

Climate Change Law and Governance
Droit et Gouvernance du Changement Climatique
Klimaschutzrecht und Governance


| 1

Schulev-Steindl | Hinteregger | Kirchengast
Meyer | Ruppel | Schnedl | Steininger [Eds.]

Climate Change, Responsibility and Liability



Nomos

<https://doi.org/10.5771/9783748930990>, am 02.05.2024, 10:23:07
Open Access –  - <https://www.nomos-elibrary.de/agb>



We work for
tomorrow



Climate Change Law and Governance Droit et Gouvernance du Changement Climatique Klimaschutzrecht und Governance

Edited by / publiée par / herausgegeben von:

Prof. Dr. Oliver C. Ruppel, LL.M.

Stellenbosch University, South Africa and Research Center
for Climate Law (Clim:Law), University of Graz, Austria

Prof. Dr. Till Markus, LL.M.

Helmholtz Centre for Environmental Research (UFZ),
Leipzig, Germany

Prof. Dr. Eva Schulev-Steindl, LL.M.

University of Natural Resources and Life Sciences,
Vienna, Austria

Dr. Hana Müllerová, Institute of State and Law of the Czech
Academy of Sciences, Prague, Czech Republic

Volume 1

Eva Schulev-Steindl | Monika Hinteregger
Gottfried Kirchengast | Lukas H. Meyer | Oliver C. Ruppel
Gerhard Schnedl | Karl W. Steininger [Eds.]

Climate Change, Responsibility and Liability



Nomos

© Coverpicture: paiche59 – fotolia.com | Nomos Verlag

The content of the chapters in this publication, including any errors or omissions that remain, is the sole responsibility of the individual contributors. While updates have been made during the editorial process, the date of submission of the individual chapters ordinarily reflects state of legislation, case law and literature. The editors have made every effort to acknowledge the use of copyright material. Should any infringement of copyright have occurred, please contact the editors, and every effort will be made to rectify omissions or errors, in the event of a reprint or new edition.

The Deutsche Nationalbibliothek lists this publication in the Deutsche Nationalbibliografie; detailed bibliographic data are available on the Internet at <http://dnb.d-nb.de>

ISBN 978-3-8487-8707-4 (Print)
978-3-7489-3099-0 (ePDF)

British Library Cataloguing-in-Publication Data

A catalogue record for this book is available from the British Library.

ISBN 978-3-8487-8707-4 (Print)
978-3-7489-3099-0 (ePDF)

Library of Congress Cataloging-in-Publication Data

Schulev-Steindl, Eva | Hinteregger, Monika | Kirchengast, Gottfried
Meyer, Lukas H. | Ruppel, Oliver C. | Schnedl, Gerhard | Steininger, Karl W.
Climate Change, Responsibility and Liability
Eva Schulev-Steindl | Monika Hinteregger | Gottfried Kirchengast
Lukas H. Meyer | Oliver C. Ruppel | Gerhard Schnedl | Karl W. Steininger (Eds.)
525 pp.

Includes bibliographic references.

ISBN 978-3-8487-8707-4 (Print)
978-3-7489-3099-0 (ePDF)

1st Edition 2022

© The Authors

Published by
Nomos Verlagsgesellschaft mbH & Co. KG
Waldseestraße 3–5 | 76530 Baden-Baden
www.nomos.de

Production of the printed version:
Nomos Verlagsgesellschaft mbH & Co. KG
Waldseestraße 3–5 | 76530 Baden-Baden

ISBN 978-3-8487-8707-4 (Print)
ISBN 978-3-7489-3099-0 (ePDF)
DOI <https://doi.org/10.5771/9783748930990>



Onlineversion
Nomos eLibrary



This work is licensed under the Creative Commons Attribution 4.0 International License.

Table of contents

Foreword by Verena Madner	7
Foreword by Christoph Bezemek	9
Preface by the editors	11
Editors and contributors	15
Part I: Foundational basis for climate responsibility and liability: Attribution science, economics and philosophical perspectives	
Climate change, its impacts, and attribution of causes: Current status and challenges	21
<i>Andrea K Steiner and Mastawesha M Engdaw</i>	
Climate change and pandemics: Feasibility constraints on mitigation and adaptation	41
<i>Marcelo de Araujo and Lukas H Meyer</i>	
The cost of carbon: Economic approaches to damage evaluation	75
<i>Michael Hanemann</i>	
Foreseeability of economic damages related to inadequate climate mitigation and adaptation	93
<i>Karl W Steininger</i>	
Part II: Legal basis for climate change responsibility and liability	
A. International aspects	
Climate change responsibility and liability in international law	105
<i>Julia Pleiel and Kirsten Schmalenbach</i>	
From blabla to concrete obligations: The Oslo Principles and the Principles on Climate Obligations of Enterprises	133
<i>Jaap Spier</i>	
China's climate change law: History, current situation, and key issues	161
<i>Zhou Ke</i>	
A rights-basis for climate compensatory claims in Kenya	179
<i>Lydia A Omuko-Jung</i>	

Table of contents

South Africa: Climate change, responsibility and liability – the legal system,
public and private law considerations 201
Oliver C Ruppel

B. European Union, Germany and Austria

Climate change litigation in Germany and Austria – an overview 281
Daniel Ennöckl and Judith Fitz

State responsibility for climate change under EU and German law 299
Oliver Dörr

Oslo Principles in EU and Austrian climate change law 313
Eva Schulev-Steindl and Gerhard Schnedl

The first Austrian climate lawsuit 361
Julia Wallner

C. Private law and climate litigation

Climate change and tort law 383
Monika Hinteregger

Legal standing in climate-related lawsuits 415
Erika Wagner

Climate change litigation and the private sector – assessing the liability risk for
multinational corporations and the way forward for strategic litigation 441
Mareike Rumpf

Part III: Climate change litigation and enforcement: Crosscutting issues

Climate change, public interest litigation and the development of renewable
energy law in China – based on the analysis of *Friends of Nature v Ningxia*
Grid Company 493
Cao Wei

Fostering responsibility through compliance mechanisms 499
Birgit Hollaus

Foreword by Verena Madner

The anthology at hand is based on conference proceedings at the Environmental Law Forum, an international conference on ‘Climate Change, Responsibility and Liability’ that took place at the University of Graz in 2018. The Conference, I had the opportunity to attend in person, was an outstanding success, constituting a major contribution to the scientific discourse on climate change and the law. Over two days, renowned speakers from Austria and around the world addressed the legal responsibilities of states, enterprises and cities in the context of climate change and its growing impacts. Thereby, the focus was on the climate liability of actors, detection, attribution and causation. In the light of ever-advancing climate change and its drastic consequences, which we increasingly experience today, the establishment of clear (legal) obligations is of utmost importance. It is, therefore, a great honour and special pleasure for me to contribute a ‘Foreword’ to this unique and forward-looking anthology.

Attempts to identify responsible actors and to determine their (legal) obligations still face many hurdles: First and foremost, the enforcement of climate change-related claims through legal action requires a legal basis, for example, human rights or the general rules on damages. In light of this, a multitude of (preliminary) questions still need to be answered: These *inter alia* relate to what extent was a given loss and damage caused by climate change? Can this be attributed to a particular actor in a legally convincing way? To what extent do human rights oblige states to protect individuals from the adverse impacts of climate change? To answer such questions, recourse to other scientific disciplines is indispensable as legal statements require strong empirical claims. However, scientific claims themselves are not seldomly fraught with uncertainty, which makes the role of the Intergovernmental Panel on Climate Change (IPCC) more relevant than ever.

The complex ‘legal playing field’ of climate change is marked by various uncertainties, which becomes inherent in the context of increasing climate litigation. Climate lawsuits, often brought by concerned individuals or environmental NGOs, seek to bridge the gap between recommendations by climate science and (often unambitious) climate policies. They aim not only at enforcing stricter climate protection measures but also at raising awareness for the delicate issue of climate change. Litigants either sue states for non-existent or insufficient climate protection legislation or businesses for their contribution to global climate change. As of today, several noteworthy successes have been achieved: In the well-known *Urgenda* decision, the *Hoge Raad* (Supreme Court) of the Netherlands obliged the state to reduce its greenhouse gas emissions by 25% until 2020. And in the recent *Neubauer* decision, the

Bundesverfassungsgericht (Federal Constitutional Court) of Germany declared the Federal Climate Protection Law to be unconstitutional as the freedom of future generations was not sufficiently considered. Climate lawsuits against carbon majors have, so far, been less successful as they usually revolve around claims for damages and the difficult issues of causation (*sine qua non*) or the attribution of concrete damages to allegedly responsible actors. However, a recent case took a whole new approach: In its 2021 *Milieudéfensie* decision, a Dutch District Court ordered Royal Dutch Shell to drastically cut its emissions, which potentially impacts future suits against multinational companies.

These recent climate litigation efforts, among many others, highlight the special importance of this volume, which aims to provide current and future generations of lawyers and judges with legal tools and arguments to advance climate protection and guarantee a decent life for all. The volume thereby takes an interdisciplinary approach where prominent scholars from different disciplines of academia, such as law, economics or philosophy, join hands. Accordingly, the contributions cover a multitude of topics and range from the attribution of moral and political responsibilities and the foreseeability of climate change to responsibility and liability under international, European Union and national law, with the latter *inter alia* focusing on Austria, China, Germany, Kenya and South Africa. The individual contributions are devoted to novel approaches, such as the Oslo Principles on Climate Change and a variety of cross-cutting issues like state responsibility in climate change; legal standing in climate lawsuits; causation in tort law; or the liability risks for carbon majors. As a whole, this remarkable book publication provides a distinct comprehensive overview and timely analysis of current developments in the field of climate change law, responsibility and liability. Ultimately, it also sheds light on areas where future research is still needed to tackle the greatest challenge of our time.

I want to express my sincere gratitude to the editors and authors who make this book a great success and a valuable contribution to the legal and interdisciplinary discourse on climate change.

Verena Madner
Vice-President of the Austrian Constitutional Court

Vienna, October 2021

Foreword by Christoph Bezemek

The volume at hand unites numerous presentations given at a Conference of the same name, held at the University of Graz in November 2018. Several such events labelled ‘Environmental Law Forum’, took place here in Graz over time, bringing together renowned experts, leading scientists and lawyers from around the world in our beautiful town, allowing them to get to know our venerable *Alma Mater* and its excellent researchers. Events like these prove particularly successful in stimulating the interdisciplinary discourse on divergent issues and in fostering innovation and novel solutions in law and beyond. At the 2018 Conference, climate change and particularly the identification of those responsible for taking (or neglecting to take) much-needed action as well as the determination of their respective obligations were in the focus.

The aforementioned Conference represents one of the University’s many efforts in its Field of Excellence ‘Climate Change’, which unites over a hundred researchers from different disciplines across faculties. Climate change research at University of Graz is concerned with a multitude of questions, including the scientific basis of climate change and its effects, transformation processes, innovations, and carbon storage technologies, but also climate justice, climate law and climate litigation. Within the Field of Excellence, researchers from a range of disciplines identify a wide range of options for a sustainable transformation and elaborate the respective changes required in the technical, social, political, or legal sphere.

Yet, strategies to deal with climate change are still clouded by uncertainties and challenges. Climate litigation struggles with difficulties to prove and assign responsibility and liability for specific impacts of climate change. This book takes an attempt to untangle this complex web by taking an interdisciplinary approach in understanding the necessary basis of responsibility and liability and narrowing down the interface between law and other disciplines.

Enforcing legal claims presupposes legal rights and legal duties/obligations. Additionally, it is important to identify the responsible agent (and the extent of responsibility) for the anthropogenic climate change which caused the loss in a manner that would be legally convincing. Legal statements on duties and responsibilities require a strong foundation on empirical claims such as those arising from attribution science. But then again, scientific claims are also faced with the challenge of uncertainties, creating a complex web on identification of actors and the extent of their contribution that would provide a basis for assigning a legal duty and consequently for enforcing legal claims against such specific actors. This publication significantly contributes to trends and developments in law, relevant to climate liability and responsibility but also contains important insights at the intersection of law and other disciplines. The

international approach underlying this volume gives the opportunity to compare (and learn from) different jurisdictions both from an academic and a practical perspective. University of Graz takes the responsibility to provide students and academics with knowledge of the grand global challenges of the 21st century seriously. This mission encompasses, particularly, climate change, the loss of biodiversity and sustainability. In doing so, our aim is to raise even more awareness for these delicate issues and to further strengthen our capabilities to significantly assist in meeting the Austrian goals in fighting climate change and to support the aims of the Paris Agreement and the 2030 Agenda of the United Nations Sustainable Development Goals.

In 2020, our new Research Center for Climate Law (ClimLaw: Graz) was founded to further deepen the University's efforts within the 'Field of Excellence Climate Change'. The Field of Excellence Climate Change @ Graz comprises over a hundred researchers who are investigating climate change and the economic, production-related, social, political and legal changes that are necessary for a sustainable transformation. As part of this coalition, ClimLaw: Graz is devoted to climate change-related (legal) research. Its establishment is a significant achievement; an achievement that makes me, as Dean of the Faculty of Law, particularly proud.

ClimLaw: Graz, as part of the Faculty of Law, aims to advance social, political, diplomatic and legal responses to climate change through research and teaching. It further actively contributes to local, national and global academic and professional efforts to combat climate change and its consequences. ClimLaw: Graz adopts a transdisciplinary approach and unites national and international experts from law from various fields of academia in its projects. In its current JustDeCarb project researchers are concerned with a socially just and politically robust decarbonisation, whereas the LEXAT project inquires legitimate expectations throughout the transformation to a low-carbon society and economy.

In addition to research, ClimLaw: Graz engages in various other activities: Teaching constitutes an essential pillar as ClimLaw: Graz offers a wide range of courses in environmental and climate law and thereby reinforces the objective of the University's respective field of excellence. As scientific conferences are an indispensable part of scientific discourse and exchange, the Research Center regularly organises and hosts Conferences that connect national and international experts to discuss the complex and multi-faceted challenge of climate change and its legal implications. It is a great pleasure that the 2018 Conference on Climate Change, Responsibility and Liability has resulted in the publication at hand, and, thus, makes a valuable contribution to the legal discourse on climate change. I would like to thank and to congratulate the organisers of the Conference, the editors and authors of this volume and the whole team of ClimLaw: Graz.

Christoph Bezemek
Dean, Faculty of Law, University of Graz

Graz, October 2021

Preface by the editors

In November 2018, an Environmental Law Forum titled ‘Climate change, responsibility and liability’ was held at the University of Graz. In the course of this international Conference, distinguished experts from different continents addressed, from an interdisciplinary perspective, the complex questions climate change raises in terms of responsibility and liability of states and enterprises.

After a pandemic-related delay, we, the editors, are now all the more pleased to reflect the outcomes of the Conference and present them to the scientific community, policymakers, legal practitioners and students. The present anthology covers many aspects pertaining to climate change responsibility and liability; it follows the structure of the Conference and is divided into three interconnected and mutually dependent parts:

Part I deals with the foundations for climate change responsibility and liability: ‘Climate change, its impacts, and attribution of causes: Current status and challenges’ provides an introduction to attribution science and the key question of how concrete climate damage might be assigned to certain activities or actors. ‘Climate change and pandemics: Feasibility constraints on mitigation and adaptation’ conducts a comparative analysis of the current COVID-19 pandemic and the climate crisis in terms of implementation hurdles respective countermeasures face. Two contributions are devoted to the economic perspective, highlighting how climate damages might be quantified in financial terms and how insufficient climate protection causes economic loss – ‘The cost of carbon: Economic approaches to damage evaluation’ and ‘Foreseeability of economic damage related to inadequate climate mitigation and adaptation’.

Part II sheds light on the legal basis for climate change responsibility and liability, covering international aspects, the German and Austrian perspective and private law and related climate litigation. Several contributions cover the international dimension, relating to international climate law as well as non-binding documents, namely ‘Climate change responsibility and liability in international law’ and ‘Oslo Principles and Climate Principles for Enterprises’. Further, three contributions provide country-specific insights for China, South Africa and Kenya: ‘China’s climate change law: History, current situation and key issues’, ‘South Africa – climate change, responsibility and liability: The legal system, public and private law considerations’ and ‘A rights-basis for climate compensatory claims in Kenya’. Articles on the national Austrian and German perspective range from ‘Climate change law in Germany and Austria’ and ‘State responsibility for climate change under EU and German law’ to ‘Oslo Principles in Austrian and EU climate change law’ and ‘Climate action – polit-

ical question or a case for the courts?’ or ‘The first Austrian climate lawsuit’. Further, private law climate litigation is comprehensively covered with contributions titled ‘Climate change and tort law’, ‘Legal standing in climate-related lawsuits’ and ‘Climate change litigation and the private sector – assessing the liability risk for multinational corporations and the way forward for strategic litigation’.

Part III comprises cross-cutting issues relating to climate change litigation and enforcement. One contribution deals with the problem of enforcement under international law, more precisely with ‘Fostering responsibility for compliance mechanisms’, whereas two authors focus on Chinese climate change law and elaborate on a Chinese climate case and mitigation policies: ‘Climate change, public interest litigation and the development of renewable energy law in China – based on the analysis of *Friends of Nature v Ningxia Grid Company*’ and ‘China’s carbon emissions reduction policies: An industrial structural adjustment approach’.

The super-wicked problem of climate change presents humanity with an unprecedented global and inter-temporal challenge. Finding answers to the most pressing questions, namely responsibility and liability for climate change, requires interdisciplinary dialogue and cooperation.

The need for joining of strengths is particularly evident in the context of climate litigation, which is on the rise globally but has, so far, only led to a limited number of successes. The enforcement of legal claims is difficult and requires not only the existence of legal rights and duties but also necessitates the determination and quantification of climate-related damage and the identification of a responsible agent.

Legal claims thus not only require strong empirical claims on climate damages (like those provided by attribution science) but also methods for the (economic) valuation of climate damages (as economics provides). The equitable shaping of the transition to low-carbon economies and societies further calls for consideration of (distributional) justice, predominantly dealt with by philosophers.

Against this background, the present anthology goes beyond a mere legal analysis – it attempts to foster international and interdisciplinary dialogue on climate change and to provide viable concepts for the liability of specific actors based on their role in causing climate change and responsibility of specific actors to respond to climate change, irrespective of their role in causing it. The book also reflects ongoing research conducted by leading scientists at the University of Graz within its Field of Excellence: Climate Change and the Research Centre ClimLaw: Graz, which is devoted to legal and interdisciplinary research on climate change.

We would like to express our gratitude to the organisers and sponsors of the 2018 Conference on climate change, responsibility and liability, which constituted the starting point for this publication. We would also like to thank all the contributors to this publication, Nomos for their professional services and Julia Wallner for the valuable assistance in making this book formally publishable. Last but not least, we

wish to thank the Rector of the University of Graz, Peter Riedler, and the Dean of the Faculty of Law, Christoph Bezemek, for their continued support.

The editors

Graz, March 2022

Editors and contributors

Christoph Bezemek is Professor of Public Law and Dean of the Faculty of Law at the University of Graz (Austria).

Wei Cao is Associate Professor at the Law School of Renmin University (China).

Marcelo de Araujo is Professor of Philosophy of Law at the Faculty of Law at the Federal University of Rio de Janeiro and Professor of Ethics in the Department of Philosophy at the State University of Rio de Janeiro (Brazil).

Oliver Dörr is Professor of Law at the European Legal Studies Institute at the University of Osnabrück (Germany).

Daniel Ennöckl is Professor for Public Law and Head of the Institute of Law at the University of Natural Resources and Life Sciences Vienna (Austria). He is an alternate member of the Austrian Constitutional Court and a member of the scientific advisory board of the Research Center for Climate Law (ClimLaw: Graz), Faculty of Law, University of Graz (Austria).

Mastawesha M Engdaw is Research Scientist at the Wegener Center for Climate and Global Change and PhD Candidate in the Doctoral Programme Climate Change at the University of Graz (Austria).

Judith Fitz is a Doctoral Researcher at the Institute of Law at the University of Natural Resources and Life Sciences Vienna (Austria).

Michael Hanemann is Professor of Economics and Wrigley Chair in Sustainability in the Economic Department at Arizona State University, and Chancellor's Professor Emeritus in the Department of Agricultural and Resource Economics at the University of California Berkeley (United States of America).

Monika Hinteregger is Professor of Civil Law at the University of Graz (Austria).

Birgit Hollaus is a Post-Doctoral Teaching and Research Associate at WU Vienna University of Economics and Business (Austria).

Gottfried Kirchengast is Professor of Geophysics at the University of Graz (Austria), Honorary Professor at the Chinese Academy of Sciences, and a member of the Austrian Academy of Sciences. He is the Founding Director of the Wegener Center for Climate and Global Change at the University of Graz, a speaker of the Field of Excellence Climate Change Graz, and a member of the scientific advisory board of the Research Center for Climate Law (ClimLaw: Graz), Faculty of Law, University of Graz (Austria).

Verena Madner is Professor of Public Law, Environmental Law, Public and Urban Governance at the Department of Socioeconomics and Co-Director of the Research Institute for Urban Management and Governance at WU Vienna University of Economics and Business (Austria). She is also Vice-President of the Austrian Constitutional Court.

Lukas H Meyer is Professor and Speaker of the Working Unit Moral and Political Philosophy in the Department of Philosophy at the University of Graz (Austria). He is also affiliated Professor of the St. Anna School of Advanced Studies in Pisa (Italy) and a member of the scientific advisory board of the Research Center for Climate Law (ClimLaw: Graz), Faculty of Law, University of Graz (Austria).

Lydia A Omuko-Jung is a Legal Consultant at Climate Focus, a Legal Analyst at Climate Change Litigation Initiative at the University of Strathclyde (United Kingdom) and an Advocate of the High Court of Kenya. Formerly, she was a Doctoral Researcher at the University of Graz (Austria) and an Associate at V.A. Nyamodi & Co. Advocates in Nairobi (Kenya).

Julia Pleiel is currently working as a legal officer in the Liaison Office of the Province of Salzburg to the EU in Brussels.

Mareike Rumpf is a Research Fellow at the Institute for International Affairs at the University of Hamburg (Germany).

Oliver C Ruppel is Professor of Public and International Law at the Faculty of Law at Stellenbosch University (South Africa) and the Director of its Development and Rule of Law Programme (DROP). He is also the Director of the Research Center for Climate Law (ClimLaw: Graz), Faculty of Law, University of Graz (Austria); distinguished Fellow at the Fraunhofer Centre for International Management and Knowledge Economy, Leipzig (Germany); and Professor Extraordinaire at various Universities around the world.

Kirsten Schmalenbach is Professor of Public International Law and European Union Law at the Paris-Lodron-University of Salzburg (Austria); previously, she was a Professor at the University of Graz (Austria).

Gerhard Schnedl is Assistant Professor at the Institute of Public Law and Political Science at the University of Graz (Austria) and member of its Sustainability Board. He is also a member of the Research Center for Climate Law (ClimLaw: Graz), Faculty of Law, University of Graz (Austria); co-editor of the journal *Sustainability Law (Nachhaltigkeitsrecht)* and co-organiser of the Environmental Law Forum Graz.

Eva Schulev-Steindl is Rector of the University of Natural Resources and Life Sciences in Vienna (Austria). Formerly she was Professor of Public and Commercial Law and Vice-Dean at the Faculty of Law of the University of Graz (Austria). She is the Founder of the Research Center for Climate Law (ClimLaw: Graz), Faculty of Law, University of Graz (Austria).

Jaap Spier is Extraordinary Professor of Global Challenges at Stellenbosch University (South Africa), Senior Associate at the Institute for Sustainability Leadership at the University of Cambridge (United Kingdom) and retired Advocate General in the Supreme Court of the Netherlands. He is a member of the scientific advisory board of the Research Center for Climate Law (ClimLaw: Graz), Faculty of Law, University of Graz (Austria).

Andrea K Steiner is Professor of Climate Analysis and Director of the Wegener Center for Climate and Global Change at the University of Graz (Austria). Since 2021, she is the Vice Dean of the Faculty of Environmental, Regional and Educational Sciences at the University of Graz (Austria).

Karl W Steininger is Professor of Climate Economics and Sustainable Transition at the Wegener Center for Climate and Global Change at the University of Graz (Austria). He is a member of the scientific advisory board of the Research Center for Climate Law (ClimLaw: Graz), Faculty of Law, University of Graz (Austria).

Erika Wagner is Professor of Civil Law, head of the Institute for Environmental Law and head of the Department for Environmental Private Law at the Institute for Civil Law at the Johannes Kepler University in Linz (Austria). She is a member of the scientific advisory board of the Research Center for Climate Law (ClimLaw: Graz), Faculty of Law, University of Graz (Austria).

Julia Wallner is a Doctoral Researcher at the Institute of Public Law and Political Science at the University of Graz (Austria).

Ke Zhou is Professor at the Law School and Director, Environmental and Resources Law Teaching and Research Center at Renmin University (China). He is a member of the scientific advisory board of the Research Center for Climate Law (ClimLaw: Graz), Faculty of Law, University of Graz (Austria).

Part I:

**Foundational basis for climate
responsibility and liability: Attribution science,
economics and philosophical perspectives**

Climate change, its impacts, and attribution of causes: Current status and challenges

Andrea K Steiner and Mastawesha M Engdaw

Abstract

Current climate change progresses rapidly. The Earth has warmed globally by more than one degree Celsius since pre-industrial times. All components of the climate system are affected – oceans, ice, atmosphere, land, and biosphere. Changes are detectable in a wide range of climate indicators and the evidence is clear from observations. Moreover, extreme weather events are becoming more frequent and intense, with increasing risks and damaging impacts on the environment and society.

Attribution science identifies the drivers of climate change by separating natural causes from human-induced causes based on characteristic signatures, so-called fingerprints. Global warming can be clearly attributed to increasing concentrations of greenhouse gases in the atmosphere, mainly due to the burning of fossil fuels. It is unequivocal that human activities are the major cause.

Extreme event attribution provides information on the influence of human-induced climate change on extreme weather events in terms of probability, severity, and impact risks. It has revealed that many of the recent extremes would have been nearly impossible without human-induced climate change.

Here, we briefly review the current state of knowledge on climate change, its impacts and the attribution of causes. We discuss the challenges and limitations in attribution as well as recent progress toward operational attribution. Attribution studies are found essential for understanding human impacts of climate change. They provide vital information for adaptation and mitigation to climate change, for climate risk assessment and for climate litigation.

1 Introduction to climate change

It is unequivocal that human influence has warmed the atmosphere, ocean and land. Widespread and rapid changes in the atmosphere, ocean, cryosphere and biosphere have occurred. Human-induced climate change is already affecting many weather and climate extremes in every region across the globe.¹

1 Intergovernmental Panel on Climate Change (IPCC), *Climate change 2021: The physical science basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press 2021).

These are key statements of the Intergovernmental Panel on Climate Change (IPCC) on the current state of the Earth's climate and the urgency of action. In 2021, Working Group I (WGI) of the IPCC published the first part of its sixth Assessment Report (AR6) on the physical state of the climate.² Main findings are condensed in the summary for policymakers.³

Long-term climate observations show that global warming has reached 1.1°C in 2021 relative to the pre-industrial 1850-1900 average.⁴ Beyond warming, changes are consistently measured in a range of climate indicators as all domains of the climate system – land, ocean, cryosphere, atmosphere, biosphere – are affected by global change. These indicators include the composition of the atmosphere, temperature and energy changes that arise from the accumulation of greenhouse gases and other factors, as well as the responses of land, oceans and ice. The scale and pace of recent changes across the climate system are unprecedented over many centuries to many thousand years shown in Fig. 1.⁵ In 2021, the world remains on course to exceed the agreed temperature thresholds of either 1.5°C or 2°C above pre-industrial levels. Unless deep reductions in greenhouse gas emissions occur in this decade, the risk of harmful effects of climate change will increase beyond what we already experience.⁶

2 IPCC, 2021 (n 1).

3 IPCC, *Summary for policymakers. Climate change 2021: The physical science basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (IPCC 2021 SPM) (Cambridge University Press 2021).

4 World Meteorological Organization (WMO), 'United in Science 2021 – a multi-organization high-level compilation of the latest climate science information' <https://public.wmo.int/en/resources/united_in_science> last accessed 5 January 2022.

5 IPCC, 2021 SPM (n 3).

6 WMO, United in Science (n 4).

Changes in global surface temperature relative to 1850-1900

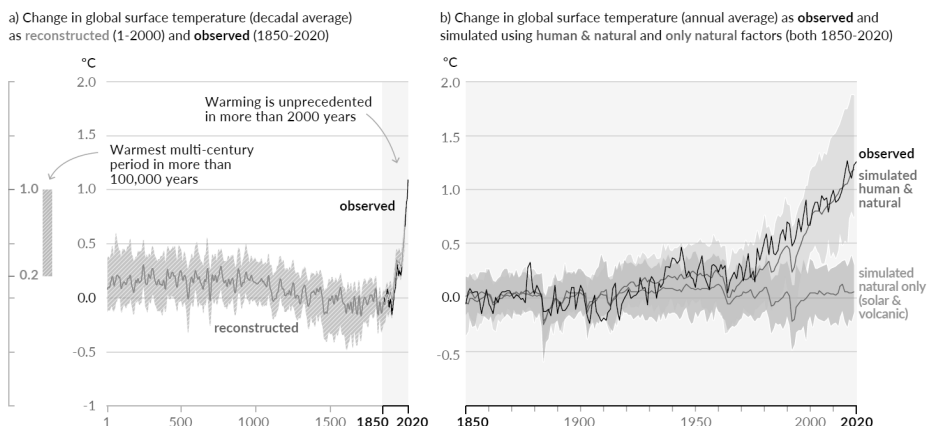


Figure 1. (a) Changes in global surface temperature reconstructed from paleoclimate archives (solid grey line, 1-2000) and from direct observations (solid black line, 1850-2020), both relative to 1850-1900. (b) Changes in global surface temperature as observed (black line) relative to 1850-1900, simulated from climate models using both human and natural drivers (dark grey) and only natural factors (light grey). Natural only factors cannot explain current climate change.⁷

In a stable climate, the amount of incoming energy from the sun is in balance with the amount lost to space in the form of reflected sunlight and outgoing thermal radiation from the Earth. Naturally, greenhouse gases trap heat in the atmosphere and make our Earth a habitable planet. But fast increasing concentrations of atmospheric greenhouse gases (Fig. 1) from emissions due to human activities are causing a net energy increase in the climate system, which heats up the Earth’s atmosphere, land, and oceans.⁸

About 90% of the accumulated heat in the Earth system is stored in the ocean. Sea surface temperatures are increasing with recent record warming observed in the upper oceans. Global warming has triggered the melting of the world’s large ice sheets and glaciers at an increasing pace over the recent decades. Arctic sea ice is shrinking rapidly. Global average sea level has risen by about 20 cm since 1900 via thermal expansion of seawater due to ocean warming and due to ice melt. The rate of sea level rise has further accelerated since the beginning of this century, and some of the observed changes might be irreversible.⁹ Moreover, increased uptake of carbon diox-

7 IPCC, 2021 SPM (n 3) Figure SPM.1.

8 E.g., Karina von Schuckmann et al., ‘Heat stored in the Earth system: Where does the energy go?’ (2020) 12 Earth Syst. Sci. Data 2013-2041, <doi:10.5194/essd-12-2013-2020> accessed 15 March 2022; Andrea K Steiner et al., ‘Observed temperature changes in the troposphere and stratosphere from 1979 to 2018’ (2020) 33 Journal of Climate 8165-8194, doi:10.1175/JCLI-D-19-0998.1.

9 WMO, United in Science (n 4).

ide by the oceans has led to acidification that endangers marine species and ecosystem services.¹⁰

Climate change is also a growing global threat to biodiversity, ecosystems, and human well-being. Widespread impacts in many aspects of biodiversity comprise species extinction, distribution and range shifts, phenology, productivity and ecosystem function.¹¹ Observations show that the effects are accelerating in marine, terrestrial and freshwater ecosystems and are already impacting agriculture, aquaculture, and fisheries.¹²

Human health and mortality are affected by, e.g., water-borne and vector-borne diseases, and food insecurity through increasing temperatures, changing precipitation patterns, and more frequent and intense extreme weather events that bring about droughts, fires, and floods.¹³

Evidence for human-induced climate change is provided, first, by long-term observations of climate variables that are critical for monitoring climate. Second, detection studies demonstrate whether statistically significant long-term trends are detectable in observed changes, different from natural climate variability. Finally, attribution studies are essential to assess the drivers of climate change and determine whether change is due to natural or human-induced causes. Advances in attribution science have made it possible to attribute the drivers of climate change and the changing risks of extreme weather events, triggered by a growing interest in integrating attribution outcomes for effective climate change adaptation and mitigation.

We give a brief overview of the status of attribution science in Section 2, including attribution of long-term climate trends and of extreme weather events. We dis-

-
- 10 Jelle Bijma et al., 'Climate change and the oceans – what does the future hold?' (2013) 74 *Marine Pollution Bulletin* 495-505, <https://doi.org/10.1016/j.marpolbul.2013.07.022>.
 - 11 Gian-Reto Walther et al., 'Community and ecosystem responses to recent climate change' (2010) 365 *Philosophical Transactions of the Royal Society B: Biological Sciences* 2019-2024, <https://doi.org/10.1098/rstb.2010.0021>; Céline Bellard et al., 'Impacts of climate change on the future of biodiversity' (2012) 15 *Ecology Letters* 365-377, <<https://doi.org/10.1111/j.1461-0248.2011.01736.x>> accessed 22 March 2022; Akira S Mori et al., 'Biodiversity-productivity relationships are key to nature-based climate solutions' (2021) 11 *Nature Climate Change* 543-550, <https://doi.org/10.1038/s41558-021-01062-1>.
 - 12 Intergovernmental Science-Policy Platform on Biodiversity (IPBES), 'Global assessment report on biodiversity and ecosystem services' (IPBES 2019) <<https://ipbes.net/global-assessment>> last accessed 5 January 2022.
 - 13 IPCC, *Climate change and land: An IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems* (Cambridge University Press 2019); Nick Watts et al., 'The 2020 report of The Lancet countdown on health and climate change: Responding to converging crises' (2021) 397 *The Lancet* 129-170, <[https://doi.org/10.1016/S0140-6736\(20\)32290-X](https://doi.org/10.1016/S0140-6736(20)32290-X)> accessed 15 March 2022; Ana Maria Vicedo-Cabrera et al., 'The burden of heat-related mortality attributable to recent human-induced climate change' (2021) 11 *Nature Climate Change* 492-500, <<https://doi.org/10.1038/s41558-021-01058-x>> accessed 28 March 2022.

cuss the challenges in attribution science in Section 3 and provide a short summary and conclusions in Section 4.

2 Status of attribution science

2.1 Attribution of the causes of climate change

Attribution is the process of identifying the drivers of the observed change in climate variables or in extreme weather events. The observed climate change is separated into components that can be explained by natural variability (including internal variability generated within the climate system) and components that result from changes external to the climate system.¹⁴ Natural variability comprises internal variability like temperature oscillations and external drivers like solar and volcanic influences. Factors due to human activities include increases in greenhouse gas concentration and aerosols, and land-use change.

The different climate drivers cause characteristic climate change signatures, so-called fingerprints. For the attribution of long-term changes, usually, observations and model simulations are used, the latter driven by different forcings. Fingerprint studies evaluate the spatial, temporal, or space-time patterns of response (fingerprints) to external forcings from climate model simulations, whether these fingerprints agree in the observations and whether they are stronger than natural variability. This enables to determine the causal factors of climate change and the uncertainty in the magnitude of this fingerprint in observations.¹⁵ Klaus Hasselmann first developed these basic attribution methods, and already 50 years ago, Syukuro Manabe predicted

14 E.g., Gabriele C Hegerl and Francis W Zwiers, 'Understanding and attributing climate change', in IPCC, *Climate change 2007: The physical science basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press 2007); Gabriele C Hegerl and Francis W Zwiers, 'Use of models in detection and attribution of climate change' (2011) 2 WIREs Climate Change 570-591, <https://doi.org/10.1002/wcc.121>; Bruce Hewitson et al., 2014: *Regional Context*, In: *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part B: Regional Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press 2014).

15 Klaus Hasselmann, 'Optimal fingerprints for the detection of time-dependent climate change' (1993) 6 Journal of Climate 1957-1971 <[https://doi.org/10.1175/1520-0442\(1993\)006<1957:OFFTDO>2.0.CO;2](https://doi.org/10.1175/1520-0442(1993)006<1957:OFFTDO>2.0.CO;2)> accessed 11 March 2022; Klaus Hasselmann, 'Multi-pattern fingerprint method for detection and attribution of climate change' (1997) 13 Climate Dynamics 601-611 <<https://doi.org/10.1007/s003820050185>> accessed 11 March 2022; Gabriele C Hegerl et al., 'Multi-fingerprint detection and attribution analysis of greenhouse gas, greenhouse gas-plus-aerosol and solar forced climate change' (1997) 13 Climate Dynamics 613-634 at <<https://doi.org/10.1007/s003820050186>> accessed 11 March 2022.

the human-caused fingerprint on atmospheric temperature change¹⁶; both are Nobel Laureates of 2021.

Over the past decades, unequivocal changes have been detected in the climate system, and attribution studies have shown that natural factors alone cannot explain the changes observed since the pre-industrial period. Human activities have been clearly identified as the main responsible factors for the observed climate change. Figure 1b clearly shows that the observed change in global average surface temperature can only be explained by human-induced and natural factors together.¹⁷ Human fingerprints on climate are ubiquitous and have been identified in a range of climate variables beyond temperature.¹⁸

Moreover, investigating the relative contributions of different human-induced forcings, i.e., carbon dioxide, other greenhouse gases, and anthropogenic aerosols, shows that greenhouse gas warming is even partly masked by cooling due to aerosol emissions (Fig. 2). According to the IPCC (2021), the global surface temperature rise of 1.1°C since 1850-1900 (Fig. 2a) is mainly driven by well-mixed greenhouse gases, which contribute to a warming of 1.0°C to 2.0°C, while other human drivers (mainly aerosols) contribute a cooling of 0.0°C to 0.8°C (Fig. 2b-c). Natural drivers and internal variability only had a minor effect on the global surface temperature within – 0.2°C to 0.2°C.¹⁹

16 Syukuro Manabe and Richard T Wetherald, 'Thermal equilibrium of the atmosphere with a given distribution of relative humidity' (1967) 24 *Journal of the Atmospheric Sciences* 241-259 <[https://doi.org/10.1175/1520-0469\(1967\)024<0241:TEOTAW>2.0.CO;2](https://doi.org/10.1175/1520-0469(1967)024<0241:TEOTAW>2.0.CO;2)> accessed 11 March 2022.

17 IPCC 2021 SPM (n 3).

18 E.g., Benjamin D Santer et al., 'Identification of human-induced changes in atmospheric moisture content' (2007) 104 *Proceedings of the National Academy of Sciences* 15248-15253 <<https://doi.org/10.1073/pnas.0702872104>> accessed 11 March 2022; Benjamin D Santer et al., 'Human influence on the seasonal cycle of tropospheric temperature' (2018) 361 *Science* 227 <<https://doi.org/10.1126/science.aas8806>> accessed 11 March 2022; Peter A Stott et al., 'Detection and attribution of climate change: a regional perspective' (2010) 1 *WIREs Climate Change* 192-211 <<https://doi.org/10.1002/wcc.34>> accessed 11 March 2022; Jianping Duan et al., 'Detection of human influences on temperature seasonality from the nineteenth century' (2019) 2 *Nature Sustainability* 484-490 <<https://doi.org/10.1038/s41893-019-0276-4>> accessed 11 March 2022; Gabriele C Hegerl et al., 'Causes of climate change over the historical record' (2019) 14 *Environmental Research Letters* 123006 <<https://doi.org/10.1088/1748-9326/ab4557>> accessed 11 March 2022; Céline JW Bonfils et al., 'Human influence on joint changes in temperature, rainfall and continental aridity' (2020) 10 *Nature Climate Change* 726-731 <<https://doi.org/10.1038/s41558-020-0821-1>> accessed 11 March 2022.

19 Nathan P Gillett et al., 'Constraining human contributions to observed warming since the pre-industrial period' (2021) 11 *Nature Climate Change* 207-212 <<https://doi.org/10.1038/s41558-020-00965-9>> accessed 11 March 2022; IPCC, 2021 SPM (n 3).

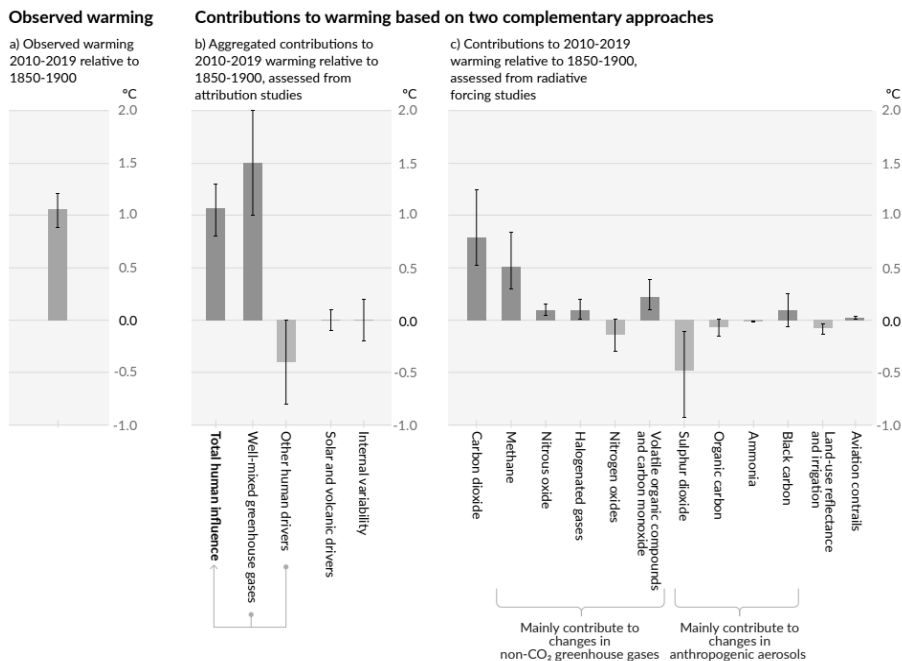


Figure 2. (a) Observed warming in the climate system, (b) total human-induced warming due to aggregated contributions of well-mixed greenhouse gases and other human drivers (mainly aerosols), natural drivers, and internal forcing, (c) individual contributions of different anthropogenic forcings.²⁰

2.2 Attribution of extreme weather and climate events

Extreme events are rare by definition, and the extent to which climate change influences an individual weather or climate event is more difficult to determine. The challenge is to estimate how much human-induced climate change has affected the magnitude of a particular event or the probability of its occurrence. Event attribution uses mainly two approaches for estimating changes in probability and magnitude of extreme events, on the one hand analysing long-term observational records, on the other hand utilising model simulations for a world with human-caused climate change to a counterfactual world without human-caused climate change.²¹

²⁰ IPCC, 2021 SPM (n 3) Figure SPM.2.

²¹ Peter Stott et al., 'Attribution of extreme weather and climate-related events' (2016) 7 WIREs Climate Change 23-41 <<https://doi.org/10.1002/wcc.380>> accessed 11 March 2022; National Academies of Sciences, Engineering and Medicine (NAS), 'Attribution of extreme weather

Confidence for attribution findings is greatest for those extremes that are related to temperature, such as the observed long-term warming, where human-caused changes are clear.²² Changes in temperature extremes thus have a more robust basis, and also atmospheric moisture as the water-holding capacity of a warmer atmosphere increases at a rate of 7% per degree Celsius.

A range of attribution studies has provided quantitative estimates of anthropogenic contributions to changes in temperature extremes²³ and precipitation extremes²⁴ globally for different regions. Changes in extremes are already affecting most regions across the globe. Human influence contributes to the observed increase in hot extremes and heavy precipitation (Fig. 3) though for the latter, attribution is more difficult due to the lack of reliable climate data and limited local research capacities, particularly in the global south.²⁵

events in the context of climate change' (NAS 2016) <<https://bit.ly/3Dkt7WV>> accessed 28 March 2022.

22 NAS 2016 (n 21).

23 E.g., Siyan Dong et al., 'Observed changes in temperature extremes over Asia and their attribution' (2018) 51 *Climate Dynamics* 339-353 <<https://doi.org/10.1007/s00382-017-3927-z>> accessed 11 March 2022; Yukiko Imada et al., 'Climate change increased the likelihood of the 2016 heat extremes in Asia' (2018) 99 *Bulletin of the American Meteorological Society* 97-101 <<https://doi.org/10.1175/BAMS-D-17-0109.1>> accessed 11 March 2022; Chao Li et al., 'Widespread persistent changes to temperature extremes occurred earlier than predicted' (2018) 8 *Scientific Reports* 1007 <<https://doi.org/10.1038/s41598-018-19288-z>> accessed 11 March 2022; Hong Yin, 'Changes in temperature extremes on the Tibetan Plateau and their attribution' (2019) 14 *Environmental Research Letters* 124015 <<https://doi.org/10.1088/1748-9326/ab503c>> accessed 11 March 2022; Nikolaos Christidis et al., 'The increasing likelihood of temperatures above 30 to 40°C in the United Kingdom' (2020) 11 *Nature Communications* 3093 <<https://doi.org/10.1038/s41467-020-16834-0>> accessed 11 March 2022.

24 E.g., Seung-Ki Min et al., 'Human contribution to more-intense precipitation extremes' (2011) 470 *Nature* 378-381 <<https://doi.org/10.1038/nature09763>> accessed 11 March 2022; Erich M Fischer and Reto Knutti, 'Anthropogenic contribution to global occurrence of heavy precipitation and high-temperature extremes' (2015) 5 *Nature Climate Change* 560-564 <<https://doi.org/10.1038/nclimate2617>> accessed 11 March 2022; Andrea J Dittus et al., 'A multiregion model evaluation and attribution study of historical changes in the area affected by temperature and precipitation extremes' (2016) 29 *Journal of Climate* 8285-8299 <<https://doi.org/10.1175/JCLI-D-16-0164.1>> accessed 11 March 2022; Megan C Kirchmeier-Young and Xuebin Zhang, 'Human influence has intensified extreme precipitation in North America' (2020) 117 *Proceedings of the National Academy of Sciences* <<https://doi.org/10.1073/pnas.1921628117>> accessed 11 March 2022; Seungmok Paik et al., 'Determining the anthropogenic greenhouse gas contribution to the observed intensification of extreme precipitation' (2020) 47 *Geophysical Research Letters* e2019GL086875 <<https://doi.org/10.1029/2019GL086875>> accessed 11 March 2022; Siyan Dong et al., 'Attribution of extreme precipitation with updated observations and CMIP6 simulations' (2021) 34 *Journal of Climate* 871-881 <<https://doi.org/10.1175/JCLI-D-19-1017.1>> accessed 11 March 2022.

25 Friederike E L Otto et al., 'Challenges to understanding extreme weather changes in lower income countries' (2020) 101 *Bulletin of the American Meteorological Society* E1851- E1860 <<https://doi.org/10.1175/BAMS-D-19-0317.1>> accessed 11 March 2022; IPCC 2021 SPM (n 3).

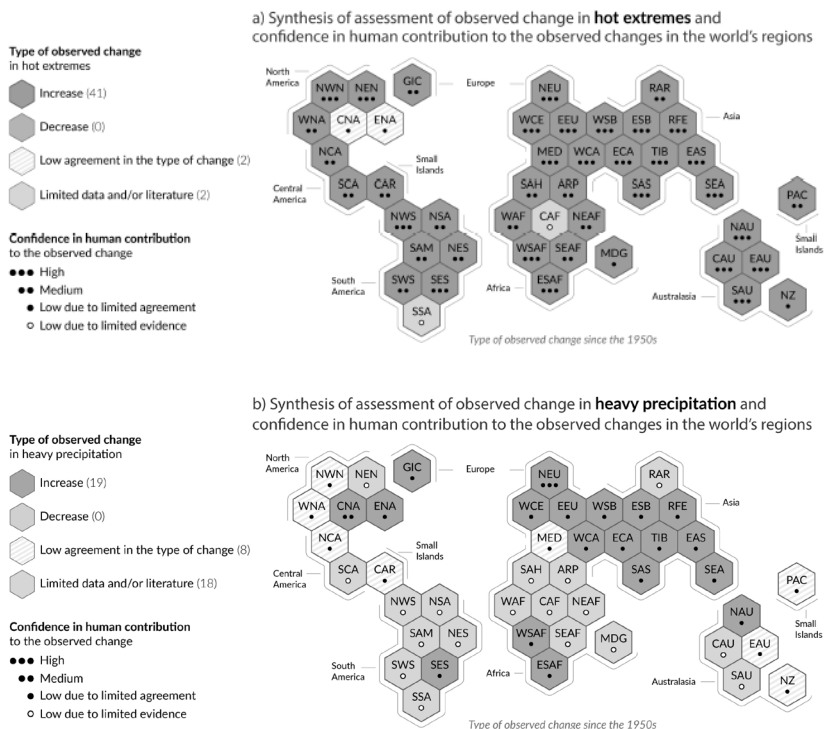


Figure 3. (a) Observed increase in hot extremes and **(b)** heavy precipitation, with confidence in human contribution indicated (dots). Each hexagon corresponds to one of the IPCC AR6 WGI reference regions.²⁶

In the case of dynamically driven extremes that are modulated by atmospheric circulation and feedbacks, alternative approaches are made. Conditional attribution regards the circulation regime as being largely unaffected by climate change (given condition) and asks the question whether known changes in the thermodynamic state affected the impact of the particular event.²⁷ The confidence in attribution analyses of specific extreme events (Fig. 4) is highest for extreme heat and cold events, followed by drought and heavy precipitation, while confidence is low in the attribution of cyclones and tropical storms.²⁸

26 IPCC 2021 SPM (n 3) Figure SPM.3a.

27 Kevin E Trenberth, John D Fasullo and Theodore G Shepherd, 'Attribution of climate extreme events' (2015) 5 Nature Climate Change 725-730; NAS 2016 (n 21).

28 NAS 2016 (n 21).

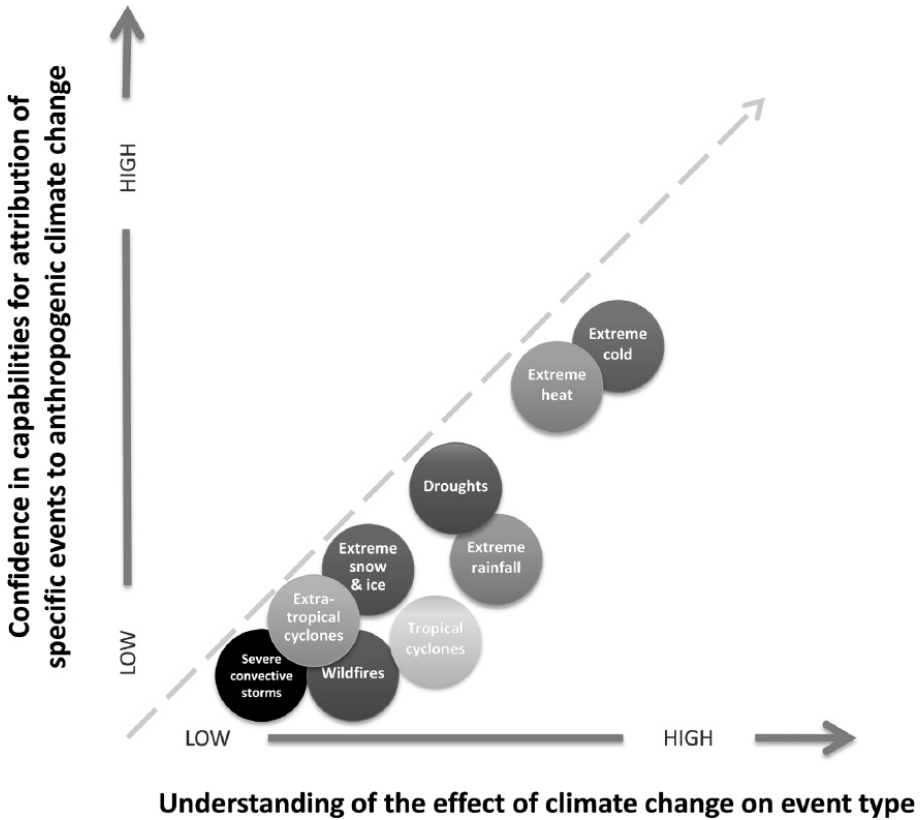


Figure 4. The state of attribution science for different extreme event types. In the horizontal, the level of understanding of the effect of climate change on the event type is reflected. In the vertical, the scientific confidence is reflected for attribution of specific events to anthropogenic climate change for that event type.²⁹

Providing rapid information on extreme events with large impacts around the world is the aim of the World Weather Attribution (WWA), an international collaboration of climate scientists since 2015.³⁰ Attribution studies of recent major extreme events in 2021 showed that the heatwave in the Pacific Northwest of America in June and July 2021 is very rare in today’s climate but would have been virtually impossible

29 NAS 2016 (n 21) Figure S.4.

30 Geert J van Oldenborgh et al., ‘Pathways and pitfalls in extreme event attribution’ (2021) 166 *Climatic Change* 13 <<https://doi.org/10.1007/s10584-021-03071-7>> accessed 11 March 2022.

without climate change. For the western Europe flood event, the heavy rainfall was found more likely due to climate change.³¹

From 1970 to 2019, over 22,326 disasters worldwide were recorded by the World Meteorological Organization (WMO), 11000 of which were attributed to weather, climate and water-related hazards. Most disaster-related human losses were caused by tropical cyclones (38%) and droughts (34%), while most economic losses were associated mainly with different types of floods (62%) and tropical cyclones (38%).³² These impact numbers show that systematic attribution of losses to the underlying hazard and information on risks is crucial for society.

3 Challenges in attribution studies

Challenges in attribution science arise from the use of observational data and climate model simulations, both of which are subject to uncertainty, and from methodological approaches and limitations for different types of climate variables and events.

3.1 Climate change indicators and climate variables

Climate variables that are mainly driven by thermodynamics are robust indicators for the detection and attribution of human-induced climate change, such as temperature, sea level, large-scale precipitation patterns, arctic sea-ice extent, glacier extent, or upper-ocean heat content (Fig. 5 a-b). The changes are consistently found in observations, theory and climate model simulations.³³ Both our understanding and confidence on attribution findings for extreme events resulting from those variables are high (Fig. 4), although detectability and robustness decrease at regional scales.

Changes in dynamically driven climate variables (such as storm tracks, jet streams, or monsoons) are not detectable yet and/or less robust across observations, theory, and models, especially at regional scales where dynamics takes control.³⁴ Circulation-driven climate variables have larger variability (Fig. 5 c-d), resulting in a

31 World Meteorological Organization (WMO), 'State of the global climate 2021: WMO provisional report (WMO 2021) <https://library.wmo.int/index.php?lvl=notice_display&id=21982> accessed 5 January 2022.

32 World Meteorological Organization (WMO), 'WMO atlas of mortality and economic losses from weather, climate and weather extremes (1970-2029)' (WMO 2020) <https://library.wmo.int/index.php?lvl=notice_display&id=21930#.YdW0g2jMI2w> accessed 5 January 2022.

33 Theodore G Shepherd, 'Atmospheric circulation as a source of uncertainty in climate change projections' (2014) 7 *Nature Geoscience* 703-708 <<https://doi.org/10.1038/ngeo2253>> accessed 11 March 2022.

34 Shepherd (n 33).

low signal-to-noise ratio and hindering trend detection.³⁵ Thus, confidence is lower in atmospheric circulation aspects of climate change.

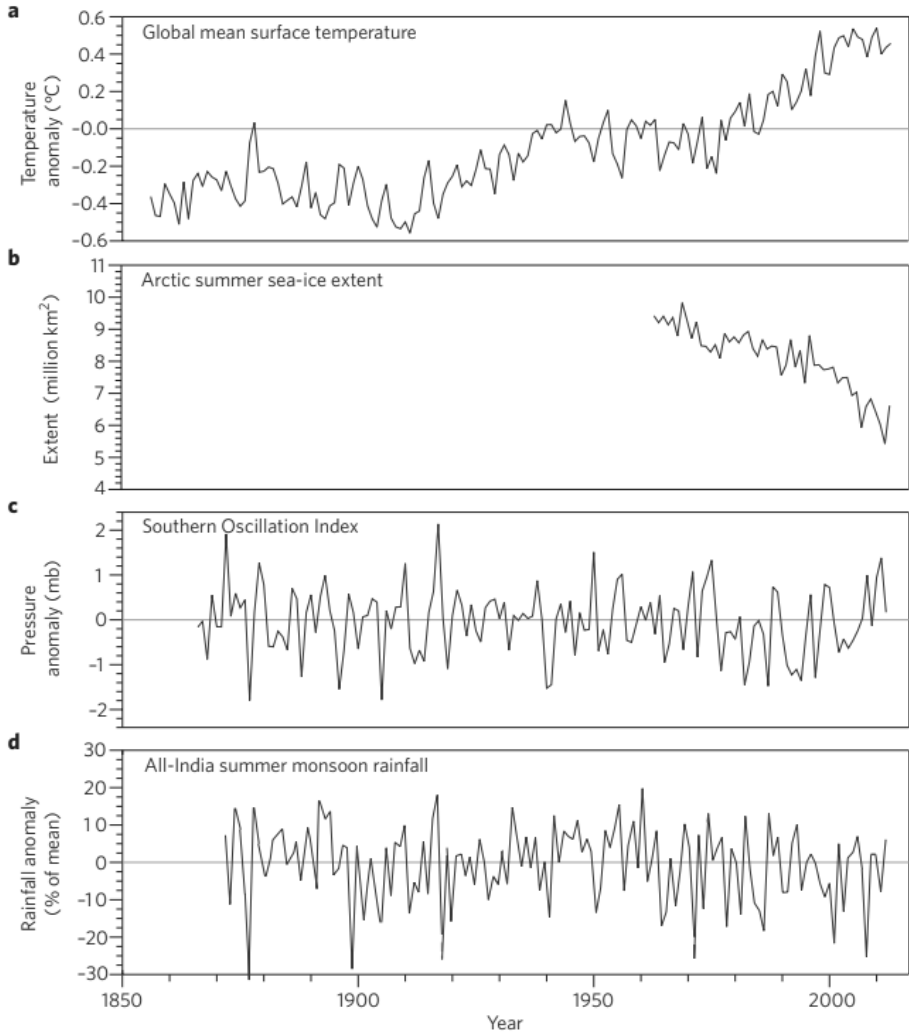


Figure 5. Observed changes in thermodynamic-driven climate indicators: (a) global annual mean surface temperature anomaly, (b) Arctic summer sea-ice extent, and in dynamically-driven indicators: (c) Southern Oscillation Index, (d) Indian summer monsoon rainfall.³⁶

35 Shepherd (n 33); Trenberth et al. (n 27).

36 Shepherd (n 33) Figure 1.

3.2 Observational records

Consistent long-term observations with appropriate spatial coverage and adequate temporal resolution are an important prerequisite for detection and attribution studies. However, this is still challenging for certain indicators and regions. Observations can be sparse in space, for example in the oceans, over remote land regions, or in continental regions of the global south. Observations can be short in time or may not have the required temporal resolution. Observational records are affected by measurement errors, sampling and representation uncertainties, and inhomogeneities, e.g., due to changes in observing location or instrument types.

A range of statistical techniques and homogenisation methods is applied for establishing homogeneous observational time series with spatio-temporal gridding. However, different algorithms for the construction of time series and gridded data sets may lead to differences in detected changes and attribution results. Besides improving methods and continuous quality control, providing information on metadata and uncertainties is crucial. Improving spatial coverage, temporal resolution and overall data quality would be beneficial to attribution science. Increasing the number of observations and establishing infrastructures in data sparse regions, such as the global south, are extremely important as these regions are also particularly vulnerable to climate impacts.

3.3 Climate model simulations

Climate model simulations are an indispensable tool in almost all attribution studies. Since models are only a limited representation of the real world, it is critical to evaluate if they fit the respective purpose. Important aspects are that the underlying physics and meteorology are reasonably represented in the model, and that major global and local forcings are accounted for to yield realistic trends. Because many attribution methods rely on estimating event probabilities or distributions of events, models should have the skill to represent the extremes of interests and/or the climatology of an event class.³⁷ The statistics of modelled extreme events should match statistics of observed extremes.³⁸

Most studies use atmosphere-only or coupled global climate models, regional climate models, or models constructed to represent a specific phenomenon.³⁹ Large ensembles or long experiments of multiple climate models are needed. Considering model uncertainties, properly accounting and correcting for model errors in simulat-

37 E.g., NAS 2016 (n 21).

38 Van Oldenborgh et al. (n 30).

39 NAS 2016 (n 21).

ing the probabilities of extreme event occurrences enables more reliable attribution of extreme weather and climate events.⁴⁰ Performance-based model selection might also aid attribution science.⁴¹

Attribution results can be sensitive to framing of the study, the choice of observations, the type of climate models, the number of ensemble members, and methodological choices. Hauser et al.⁴² demonstrated this for the case of the 2015 European summer drought deriving contradicting conclusions on the relevance of human influence depending on the chosen data source and event attribution methodology. Appropriate framing and conditioning of the attribution question is thus crucial.⁴³

Main pitfalls and challenges to overcome in extreme event attribution include the selection and definition of the event, analysis of observed probability and trends, climate model evaluation and analysis of modelled hazard trends, synthesis of the attribution of the hazard, analysis of trends in vulnerability and exposure, and communication.⁴⁴ A multi-model and multi-method framework in event attribution research is therefore crucial, especially for events with a low signal-to-noise ratio and high model dependency.⁴⁵

Figure 6 illustrates synthesis plots for interpreting attribution results as an example. For the case of extreme precipitation in Fig. 6a, all model results agree well with each other and with observations, and the weighted mean is used as the attribution result. In the second case (Fig. 6b), there are discrepancies among models and a larger model spread, which must be reflected in the uncertainty statement of the attribution result. No attribution can be made for the storm case (Fig. 6c) because the modelled trend is clearly inconsistent with the observed trend.

Overall, in many cases, a consistent message and solid scientific results are found from the attribution study. In many cases, however, the quality of the available observations or models is not good enough to make a statement about the influence of climate change on the event in question.⁴⁶

40 Omar Bellprat et al., 'Towards reliable extreme weather and climate event attribution' (2019) 10 *Nature Communications* 1732 <<https://doi.org/10.1038/s41467-019-09729-2>> accessed 11 March 2022.

41 Veronika Eyring et al., 'Towards improved and more routine Earth system model evaluation in CMIP' (2016) 7 *Earth System Dynamics* 813-830 <<https://doi.org/10.5194/esd-7-813-2016>> accessed 11 March 2022.

42 Mathias Hauser et al., 'Methods and model dependency of extreme event attribution: The 2015 European drought' (2017) 5 *Earth's Future* 1034-1043 <<https://doi.org/10.1002/2017EF000612>> accessed 11 March 2022

43 E.g., Daithi Stone, Suzanne M Rosier and David J Frame, 'The question of life, the universe and event attribution' (2021) 11 *Nature Climate Change* 276-278 <<https://doi.org/10.1038/s41558-021-01012-x>> accessed 11 March 2022.

44 Otto et al. (n 25); Van Oldenborgh et al. (n 30).

45 Hauser et al. (n 42).

46 Van Oldenborgh et al. (n 30).

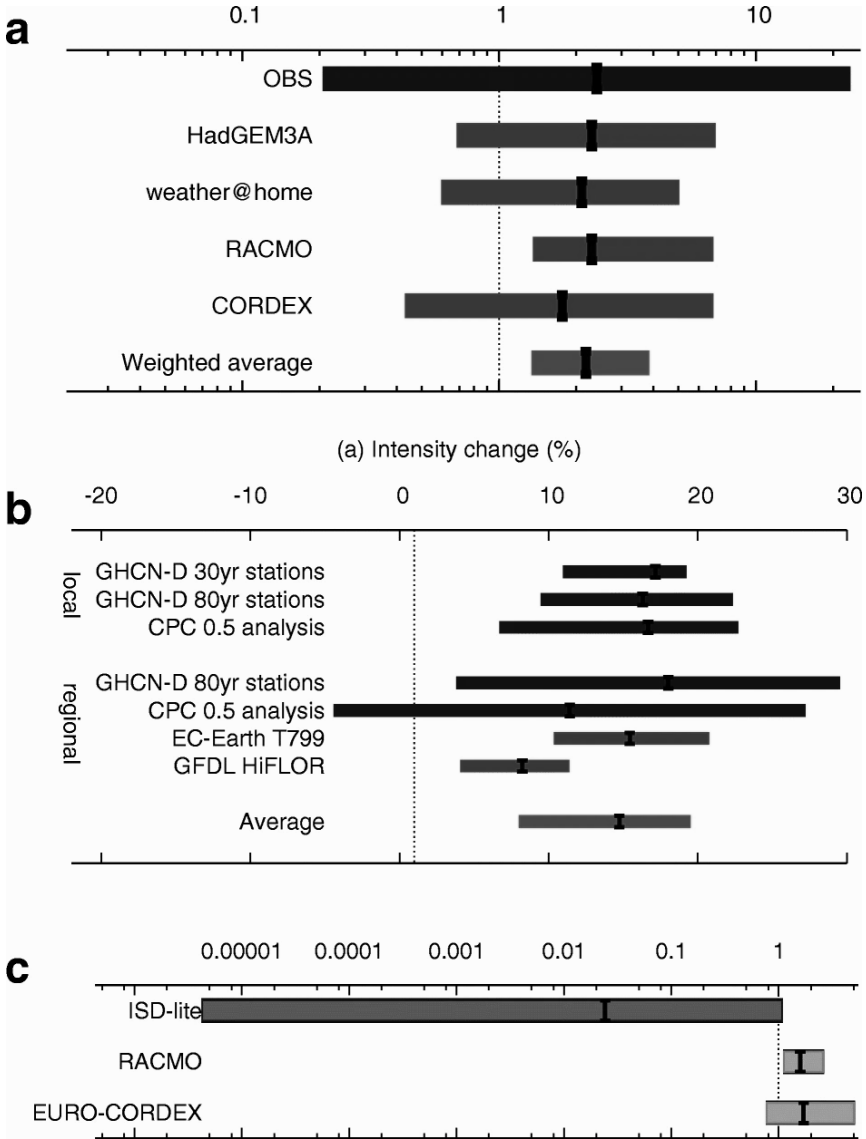


Figure 6. Synthesis of attribution results from observations, models, and the average for three studies **(a)** probability ratio of extreme precipitation in April-June over the Seine basin, **(b)** intensity of extreme precipitation on the Gulf coast, **(c)** probability ratio for changes in wind intensity over the region of storm Friederike on 18 January 2018.⁴⁷

47 Ibid Figure 5.

4 Summary and conclusions

Climate change is progressing rapidly in all components of the climate system. The evidence is clear from observations. Significant trends and changes have been detected, warming of the land, oceans, and atmosphere to rising sea levels and melting ice. Extreme weather and climate events are becoming more frequent and intense in a warmer climate. Changes in extremes are already affecting most regions around the globe.

Identifying the drivers of the observed change, attribution studies have shown that natural factors alone cannot explain the rapid changes observed in the climate system. Human activities have been clearly identified as the main responsible factors for the observed climate change due to increasing greenhouse gas emissions from the burning of fossil fuels and other activities. Human fingerprints are ubiquitous and have been identified in a range of climate variables beyond temperature.

Confidence in attribution results is greatest for those changes and extremes that are related to temperature, such as observed long-term warming or the increase in hot extremes, where the evidence is clear on human-caused changes. Attribution for circulation-driven changes and extremes is more challenging, and new methods and approaches have been developed.

Extreme event attribution estimates the influence of human-induced climate change on the probability and/or severity of an observed extreme weather or climate event and the associated risk. While confidence in attribution of specific extreme events is highest for extreme heat and cold events, followed by drought and heavy precipitation, it is lower for cyclones and storms. Event attribution revealed that many recent events would have been less severe, less likely, or virtually impossible without human-induced climate change.

Challenges in attribution arise from the sensitivity of results to the framing of the study, the choice of observations, the type of climate models, and methodological choices, and simply from limitations and uncertainties of observations and climate models. A key aspect is appropriately framing the attribution question in a multi-model and multi-method framework.

Recent developments concern the clear definition of extreme events, not only in terms of physical indicators but also in terms of criteria related to the impact of the events. A series of thresholds are used, which combine meteorological extremes with extreme loss of life or extreme economic losses. Although assessing the exposure and vulnerability of systems is complex, there is a clear need to consider vulnerabilities and impacts of extremes in event attribution. Driven by the public interest in rapid information, efforts are underway to establish operational-scale attribution and to further improve short-term climate predictions.

Climate and attribution science provide key information for a better understanding of climate change, changing extremes, causes, and impact risks. Findings benefit

society by providing a better understanding of extremes, information for decision-making, and improving early warnings. Moreover, attribution science provides vital information for mitigation and adaptation to climate change, for climate litigation and climate action, and for raising awareness of current and future climate change impacts.

Acknowledgements

This work was funded by the Austrian Science Fund (FWF) under research grant W1256 (Doctoral Programme Climate Change – Uncertainties, Thresholds and Coping Strategies).

Bibliography

- Barnett T et al., 'Detecting and Attributing External Influences on the Climate System: A review of recent advances' (2005) 18 *Journal of Climate* 1291.
- Bellard C et al., 'Impacts of climate change on the future of biodiversity' (2012) 15 *Ecology Letters* 365.
- Bellprat O et al., 'Towards reliable extreme weather and climate event attribution' (2019) 10 *Nature Communications* 1732.
- Bijma J et al., 'Climate change and the oceans – what does the future hold?' (2013) 74 *Marine Pollution Bulletin* 495.
- Bonfils CJW et al., 'Human influence on joint changes in temperature, rainfall and continental aridity' (2020) 10 *Nature Climate Change* 726.
- Christidis N, McCarthy M and Stott PA, 'The increasing likelihood of temperatures above 30 to 40°C in the United Kingdom' (2020) 11 *Nature Communications* 3093.
- Dittus AJ et al., 'A multiregion model evaluation and attribution study of historical changes in the area affected by temperature and precipitation extremes' (2016) 29 *Journal of Climate* 8285.
- Dong S et al., 'Observed changes in temperature extremes over Asia and their attribution' (2018) 51 *Climate Dynamics* 339.
- et al., 'Attribution of extreme precipitation with updated observations and CMIP6 simulations' (2021) 34 *Journal of Climate* 871.
- Duan J et al., 'Detection of human influences on temperature seasonality from the nineteenth century' (2019) 2 *Nature Sustainability* 484.
- Eden JM et al., 'Extreme precipitation in the Netherlands: An event attribution case study' (2018) 21 *Weather and Climate Extremes* 90.
- Eyring V et al., 'Towards improved and more routine earth system model evaluation in CMIP' (2016) 7 *Earth System Dynamics* 813.
- Fischer EM and Knutti R, 'Anthropogenic contribution to global occurrence of heavy-precipitation and high-temperature extremes' (2015) 5 *Nature Climate Change* 560.
- Gillett NP et al., 'Constraining human contributions to observed warming since the pre-industrial period' (2021) 11 *Nature Climate Change* 207.

- Hasselmann K, 'Optimal fingerprints for the detection of time-dependent climate change' (1993) 6 *Journal of Climate* 1957.
- , 'Multi-pattern fingerprint method for detection and attribution of climate change' (1997) 13 *Climate Dynamics* 601.
- Hauser M et al., 'Methods and model dependency of extreme event attribution: The 2015 European drought' (2017) 5 *Earth's Future* 1034.
- Hegerl G and Zwiers F, 'Use of models in detection and attribution of climate change' (2011) 2 *WIREs Climate Change* 570.
- et al., 'Multi-fingerprint detection and attribution analysis of greenhouse gas, greenhouse gas-plus-aerosol and solar forced climate change' (1997) 13 *Climate Dynamics* 613.
- et al., 'Understanding and attributing climate change', in IPCC, *Climate change 2007: The physical science basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press 2007).
- et al., 'Causes of climate change over the historical record' (2019) 14 *Environmental Research Letters* 123006.
- Herring SC et al., 'Introduction to explaining extreme events of 2017 from a climate perspective' (2019) 100 *Bulletin of the American Meteorological Society* 1.
- Hewitson B et al., 2014: 'Regional context', in IPCC, *Climate change 2014: Impacts, adaptation, and vulnerability. Part B: Regional aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press 2014).
- Imada Y et al., 'Climate change increased the likelihood of the 2016 heat extremes in Asia' (2018) 99 *Bulletin of the American Meteorological Society* 97.
- Intergovernmental Science-Policy Platform on Biodiversity (IPBES), 'Global Assessment Report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services' (IPBES 2019) <<https://ipbes.net/global-assessment>> accessed 2 January 2022.
- , 'Summary for policymakers of the global Assessment Report on biodiversity and ecosystem services' (2019) <<https://doi.org/10.5281/zenodo.3553579>> accessed 28 February 2021.
- IPCC, *Climate change and land: An IPCC Special Report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems* (Cambridge University Press 2019).
- , 'Summary for Policymakers', in IPCC, *Climate change 2021: The physical science basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press 2021).
- , *Climate change 2021: The physical science basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press 2021).
- Kirchmeier-Young MC and Zhang X, 'Human influence has intensified extreme precipitation in North America' (2020) 117 *Proceedings of the National Academy of Sciences* 13308.
- Li C et al., 'Widespread persistent changes to temperature extremes occurred earlier than predicted' (2018) 8 *Scientific Reports* 1007.
- Manabe S and Wetherald RT, 'Thermal equilibrium of the atmosphere with a given distribution of relative humidity' (1967) 24 *Journal of the Atmospheric Sciences* 241.
- Min S-K et al., 'Human contribution to more-intense precipitation extremes' (2011) 470 *Nature* 378.

- Mori AS et al., 'Biodiversity-productivity relationships are key to nature-based climate solutions' (2021) 11 *Nature Climate Change* 543.
- NAS, 'Attribution of extreme weather events in the context of climate change' (2016) National Academies of Sciences, Engineering, and Medicine, National Academies Press.
- Otto FEL et al., 'Challenges to understanding extreme weather changes in lower income countries' (2020) 101 *Bulletin of the American Meteorological Society* E1851.
- Paik S et al., 'Determining the anthropogenic greenhouse gas contribution to the observed intensification of extreme precipitation' (2020) 47 *Geophysical Research Letters* e2019GL086875.
- Risser MD and Wehner MF, 'Attributable human-induced changes in the likelihood and magnitude of the observed extreme precipitation during hurricane Harvey' (2017) 44 *Geophysical Research Letters* 12457.
- Santer BD et al., 'Identification of human-induced changes in atmospheric moisture content' (2007) 104 *Proceedings of the National Academy of Sciences* 15248.
- , 'Human influence on the seasonal cycle of tropospheric temperature' (2018) *Science* <<https://doi.org/10.1126/science.aas8806>> accessed 28 February 2022.
- Schiermeier Q, 'Droughts, heatwaves and floods: How to tell when climate change is to blame' (2018) 560 *Nature* 20.
- Shepherd TG, 'Atmospheric circulation as a source of uncertainty in climate change projections' (2014) 7 *Nature Geoscience* 703.
- Steiner AK et al., 'Observed temperature changes in the troposphere and stratosphere from 1979 to 2018' (2020) *Journal of Climate* 33.
- Stone DA, Rosier SM and Frame DJ, 'The question of life, the universe and event attribution' (2021) 11 *Nature Climate Change* 276.
- Stott PA et al., 'Detection and attribution of climate change: A regional perspective' (2010) 1 *WIREs Climate Change* 192.
- et al., 'Attribution of extreme weather and climate-related events' (2016) 7 *WIREs Climate Change* 23.
- Trenberth KE, Fasullo JT and Shepherd TG, 'Attribution of climate extreme events' (2015) 5 *Nature Climate Change* 725.
- van Oldenborgh GJ et al., 'Pathways and pitfalls in extreme event attribution' (2021) 166 *Climatic Change* 13.
- Vicedo-Cabrera AM et al., 'The burden of heat-related mortality attributable to recent human-induced climate change' (2021) 11 *Nature Climate Change* 492.
- von Schuckmann K et al., 'Heat stored in the earth system: Where does the energy go?' (2020) *Earth Syst. Sci. Data* 12.
- Walther G-R, 'Community and ecosystem responses to recent climate change' (2010) 365 *Philosophical Transactions of the Royal Society B: Biological Sciences* 2019.
- Watts N et al., 'The 2020 Report of The Lancet countdown on health and climate change: Responding to converging crises' (2021) 397 *The Lancet* 129.
- Weiskopf SR et al., 'Climate change effects on biodiversity, ecosystems, ecosystem services, and natural resource management in the United States' (2020) 733 *Science of The Total Environment* 137782.
- World Meteorological Organization (WMO), 'State of the global climate 2021: WMO provisional report' (WMO 2021) <https://library.wmo.int/index.php?lvl=notice_display&id=21982> accessed 5 January 2022.

- , ‘United in science 2021 – a multi-organization high-level compilation of the latest climate science information’ (WMO 2021) <https://public.wmo.int/en/resources/united_in_science> accessed 5 January 2022.
- , ‘WMO atlas of mortality and economic losses from weather, climate and water extremes (1970-2029)’ (WMO 2021) <<https://bit.ly/3qJzApz>> accessed 28 March 2022.
- Yin H, Sun Y and Donat MG, ‘Changes in temperature extremes on the Tibetan plateau and their attribution’ (2019) 14 *Environmental Research Letters* 124015.

Climate change and pandemics: Feasibility constraints on mitigation and adaptation

Marcelo de Araujo and Lukas H Meyer

Abstract

The COVID-19 pandemic required states to overcome several soft constraints that also stand in the way of effective climate action. This suggests that, contrary to a common line of thought in the climate debate, effective actions to address climate change are feasible. Yet two particularly robust soft constraints remain. They can be shown to be most significant for climate mitigation and less relevant for pandemic and climate adaptation policies. We call them ‘geopolitical constraints’ and ‘proximity constraints’. The latter divide into spatial and temporal proximity constraints. We argue that states might, indeed, succeed in addressing geopolitical constraints on effective climate action. But temporal proximity constraint remains a robust constraint on long-term global climate policies. This partly explains why climate mitigation policies have been less than successful. The chapter shows that the more a policy requires strong international cooperation and strong transgenerational cooperation for the benefit of future generations, the harder it is to address the relevant constraints. We argue that overcoming temporal proximity constraints requires primarily changes in institutional design, both at domestic and international levels, rather than changes in human psychology.

1 Introduction

After over thirty years of international climate negotiations, greenhouse gas emissions have increased rather than decreased. This has led some authors and policy-makers to wonder whether climate goals are politically feasible. After all, one might suggest that, in most parts of the world, politicians could not realistically expect to enforce the economic burdens, the limitation of basic freedoms, and changes in lifestyles that effective climate policy is likely to require in time to avert dangerous climate change. Even the authors of the 2018 IPCC (Intergovernmental Panel on Climate Change) report were reticent as to the feasibility of climate goals: ‘There is no single answer to the question of whether it is feasible to limit warming to 1,5°C

and adapt to the consequences'.¹ However, as we intend to show in this chapter, these doubts about the political feasibility of climate goals have been challenged after the emergence of the new coronavirus (SARS-CoV-2) in 2019.

All over the world, states and civil society have been implementing drastic measures to limit the spread of a new disease (COVID-19, or simply COVID). These measures, unprecedented in recent world history, resemble the war effort during WWI and WWII. In order to cope with the pandemic, states (whether or not under democratic rules) had to intervene in very sensitive and critically important areas of social life concerning, for instance, freedom of movement and association, right to privacy and education, as well as the right to run a business and serve customers without imposing on them burdens such as social-distancing or the compulsory use of face masks. During the pandemic, states also had to introduce special rules for access to scarce resources such as food, medicine, and medical care. In 2020 and 2021, many states provisionally closed their borders, sometimes more than once, and forced airlines to ground long-distance flights, which indirectly led to a 7% reduction of CO₂ concentration in the atmosphere in 2020, even if only temporarily.²

The current pandemic crisis seems to show, then, that at least some of the most important measures necessary to counter climate change are, indeed, politically feasible. But in spite of mounting evidence that unmitigated climate change is unsustainable, as the further accumulation of greenhouse gases in the atmosphere is likely to have consequences even more harmful than the current pandemic has already had, governments and civil society have been far less engaged in adopting drastic measures to avert dangerous climate change. How can we then account for the disparity between the drastic and foreseeably effective efforts behind the pandemic crisis, on the one hand, and the lack of such measures to address climate change, on the other? In order to answer this question, we draw a distinction between 'hard constraints' and 'soft constraints', now common in the philosophical debate on political feasibility.³

1 Intergovernmental Panel on Climate Change (IPCC), *Global warming of 1.5°C. An IPCC special report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty* (Valérie Masson-Delmotte et al. (eds), IPCC, 2018) 32 <www.ipcc.ch/sr15/> accessed 3 December 2021.

2 Pierre Friedlingstein et al., 'Global carbon budget 2020' (2020) 12 *Earth System Science Data* 3269.

3 Pablo Gilabert and Holly Lawford-Smith, 'Political feasibility: A conceptual exploration' (2012) 60 *Political Studies* 809; Jessica Jewell and Aleh Cherp, 'On the political feasibility of climate change mitigation pathways: Is it too late to keep warming below 1.5°C?' (2020) 11 *WIREs Climate Change* e621; Dominic Roser, 'Climate justice in the straitjacket of feasibility' in Dieter Birnbacher and May Thorseth (eds), *The politics of sustainability: philosophical perspectives* (Routledge 2015); Eva Erman and Niklas Möller, 'A world of possibilities: The place of feasibility in political theory' (2020) 26 *Res Publica* 1.

If one or more actors have G as a goal, two different kinds of obstacles may stand in the way of achieving G . Some obstacles cannot be overcome through social policies, institutional design, or human decision-making because the obstacles relate, for instance, to the principles of logic, or the laws of nature, or the availability of natural resources. Human beings can, for example, devise policies to develop a vaccine for the new coronavirus (goal G), but the laws of chemistry and physics that apply to G cannot be altered by means of policy-making. The laws of chemistry, thus, represent a ‘hard constraint’ on the feasibility of G . Hard constraints, in this regard, impose a binary value on the feasibility of G .⁴ If at least one hard constraint stands in the way of G , G cannot be achieved. As far as hard constraints are concerned, G is either feasible or not feasible. But even if no hard constraint stands in the way of G , ‘soft constraints’ may still represent an obstacle to its achievement. Unlike hard constraints, soft constraints relate to some aspects of human life that, at least in principle, can be changed by means of social policies and institutional design. Soft constraints are ‘malleable’: actors can succeed in achieving G depending on their capacity to overcome, for example, socio-cultural, economic, moral, legal, political, or technological constraints, or depending on their capacity to change lifestyles that prevent them from achieving G . Soft constraints impose a scalar (rather than binary) value on the feasibility of G . Some goals, thus, are more feasible than others. In what follows, when we talk about constraints, we only mean *soft* constraints, unless we explicitly state otherwise.

We assume that there are neither hard constraints on the feasibility of successful efforts to mitigate the consequences of the COVID pandemic (even assuming that COVID is likely to remain endemic in many parts of the world) nor are there hard constraints on the feasibility of efforts to avert dangerous climate change within the next 30 years. Accordingly, the question we intend to answer is: What are the soft constraints on the feasibility of successful action to address the COVID pandemic on the one hand and climate change on the other, and how strong are they? We call the first set of policy goals ‘pandemic goals’ (PG) and the second set ‘climate goals’ (CG). Which soft constraints stand in the way of PG and CG , and how malleable are they? In order to address these questions, we introduce a distinction that is central for the analysis of strategies responding to climate change but that has been largely overlooked in the current pandemic debate, namely the distinction between *adaptation* and *mitigation* measures. Since these categories apply equally to both PG and CG , one can distinguish four types of policies, as shown in the table below (see table 1).

4 Gilbert and Lawford-Smith (n 3) 813; Roser (n 3) 75; Erman and Möller (n 3) 7.

Table 1

	Pandemic Goals	Climate Goals
Adaptation	Soft constraints on the feasibility of actions to reduce the harmful impacts of an ongoing pandemic and its long-term consequences ('constraints on <i>P-A</i> policies')	Soft constraints on the feasibility of measures that increase the ability of human and natural systems to adjust to actual or projected climate change and its impacts, and by doing so, to limit harm and damage ('constraints on <i>C-A</i> policies') ⁵
Mitigation	Soft constraints on the feasibility of measures to reduce the causes of pandemic occurrence, thereby preventing the occurrence of pandemics as much as possible ('constraints on <i>P-M</i> policies')	Soft constraints on the feasibility of actions to reduce greenhouse gas emissions and enhance sinks, thereby preventing harm and damage as much as possible. ('constraints on <i>C-M</i> policies') ⁶

In the pandemic debate, the word *mitigation* is used to refer to two different kinds of strategies: on the one hand, it is used to refer to health policies that aim at mitigating the underlying causes of new disease outbreaks, which can eventually lead to the emergence of a pandemic; on the other, it is also used to refer to health policies that are deployed to mitigate the consequences of a pandemic that has already emerged. In order to avoid confusion, we speak of *pandemic adaptation* in order to refer to policies that are implemented to reduce the harmful impacts of an ongoing pandemic and its long-term consequences.⁷

5 Barry Smit et al., 'The science of adaptation: A framework for assessment' (1999) 4 *Mitigation and Adaptation Strategies for Global Change* 199, 200; Richard J T Klein et al., 'Interrelationships between adaptation and mitigation' in Martin L Parry et al. (eds), *Climate change 2007: Impacts, adaptation and vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press 2007) 745, 748-50; IPCC, *Sixth Assessment Report, Working Group I* (Final Government Distribution 2021) 3886.

6 Cf. Klein et al. (n 5) 750; IPCC, 2021 (n 5) 3922.

7 In the scientific literature on pandemics, there are hardly any working definitions for the terms *mitigation* and *adaptation*. Often, only the term *mitigation* is used, which then also describes measures that should be counted as adaptation measures according to the distinction between mitigation and adaptation established in the climate change literature. However, when the term *adaptation* is explicitly defined in the scientific literature on pandemics, the definition is similar or congruent with the definition in the scientific literature on climate change. See Jamison Pike et al., 'Economic optimization of a global strategy to address the pandemic threat' (2014) 111 *Proceedings of the National Academy of Sciences* 18519; Anson TH Ma et al., 'Protected

Consider, for instance, some of the legal, political, economic, and even psychological constraints that governments had to address in the course of 2020 and 2021 to address the COVID pandemic. These were constraints on *P-A*, as the main goal of governments, in this case, was not to mitigate the problems that may lead to the emergence of a pandemic but to adapt themselves to a pandemic that had already emerged. In order to contain the advance of new infections and to prevent an increase in the number of excess deaths, governments had to enact emergency laws, impose temporary restrictions on air travel and freedom of movement, and create new fiscal policies to protect people who were unable to work, whether as employers or employees. Now, in order to address climate goals effectively, governments have to address similar constraints (legal, political, economic, and even psychological constraints), though not temporarily as in the case of *P-A*, but over a longer period of time (or perhaps even indefinitely). Moreover, in addition to these constraints, governments will also have to address geopolitical constraints. In this chapter, we show that geopolitical and proximity constraints are particularly difficult to overcome.

Global preparedness for pandemics (a kind of *P-M* policy), as we will see in more detail later, also compels governments to address legal, political, economic, and geopolitical constraints. But not all constraints apply equally to measures to reduce the causes of pandemic occurrence and to reduce greenhouse gas emissions. With regard to the constraints that need to be overcome, *C-M* policies are different from *P-M* policies. The feasibility of *C-M* depends in particular on transgenerational cooperation, which will benefit future generations. According to the Paris Agreement (entry into force 4th of November 2016), in order to hold ‘the increase in the global average temperature to well below 2°C above pre-industrial levels and [to pursue] efforts to limit the temperature increase to 1.5°C above pre-industrial levels’ (Article 2), the (as of November 2021) 193 parties of the agreement ‘aim to achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century’ (Article 4), that is, they aim at what has been dubbed climate neutrality by 2050.⁸ This requires very far-reaching measures with burdens and costs for those living today and over the next several generations, while benefits due to the prevented worse impacts of climate change accrue mainly to those in the more distant future. The relevant actors will have to be in a position to overcome a kind of soft constraint we call ‘temporal proximity constraint’. This constraint does not significantly affect *P-A*, *P-M*, or *C-A* policies because they do not require strong transgenerational cooperation for the benefit of future generations.

areas as a space for pandemic disease adaptation: A case of COVID-19 in Hong Kong’ (2021) 207 *Landscape and Urban Planning* 103994.

8 Paris Agreement (adopted 12 December 2015, entered into force 4 November 2016) UNTC No 54113; the full text is available at <<https://bit.ly/3IjkyGw>> accessed 28 March 2022.

For the purpose of this chapter, we do not claim to have established all relevant constraints for each group of policies, that is $P-A$, $P-M$, $C-A$, and $C-M$. One could distinguish many different kinds of constraints. Some relate to technological challenges, others to economic feasibility, still others to regime-specific political feasibility, e.g., the compatibility of being responsible for unpopular measures and being democratically re-elected,⁹ and arguably also challenges related to influencing demographic development.¹⁰ We focus, instead, on what we argue are two particularly robust kinds of constraints on the feasibility of both pandemic and climate goals, namely: geopolitical constraints and proximity constraints.

2 Mitigation and adaptation goals

Pandemics are not natural disasters like earthquakes, tsunamis, or volcanic eruptions. Pandemics, like climate change, have anthropogenic causes. It is well-known, for instance, that illegal wet markets can lead to virus spillover and, thus, spark the outbreak of a pandemic. Wildlife trade and encroachment on the habitat of wild species through deforestation (or through the fragmentation of forests) can also cause pathogens to spill over into human beings and, then, give rise to a pandemic. Improved affordability of air travel and increased movement of people across borders, too, contribute significantly to the rapid spread of new viruses.¹¹ Over the last fifteen years, the scientific community has called attention to the ever-increasing probability of new outbreaks and the importance of coordinated efforts to pursue $P-M$ on a global scale.¹² $P-M$ aims at preventing the occurrence of new outbreaks, especially

9 Kathryn Judge, 'The federal reserve: A study in soft constraints' (2015) 78 *Law and Contemporary Problems* 65; John Broome, 'Efficiency and future generations' (2018) 34 *Economics and Philosophy* 221; Jonathan Symons, *Ecomodernism: Technology, politics and the climate crisis* (Polity Press 2019).

10 Darrell Bricker and John Ibbitson, *Empty planet: The shock of global population decline* (Broadway Books 2019); Mark Budolfson and Dean Spears, 'Population ethics and the prospects for fertility policy as climate mitigation policy' (2021) *The Journal of Development Studies* 1.

11 Johanna F Lindahl and Delia Grace, 'The consequences of human actions on risks for infectious diseases: A review' (2015) 5 *Infection Ecology & Epidemiology* 30048; Andrew P Dobson et al., 'Ecology and economics for pandemic prevention' (2020) 369 *Science* 379; Jeff Tollefson, 'Why deforestation and extinctions make pandemics more likely' (2020) 584 *Nature* 175; Peter Daszak, 'We are entering an era of pandemics – it will end only when we protect the rainforest' *The Guardian* (28 July 2020) <<https://bit.ly/3JPJXzI>> accessed 28 March 2022.

12 Jamison Pike et al. (n 7); James R Clapper, 'Statement for the record worldwide threat assessment of the US Intelligence Community, 9 February' (US Intelligence Community, 9 February 2016) 13-14 <www.armed-services.senate.gov/imo/media/doc/Clapper_02-09-16.pdf> accessed 3 December 2021; Daniel R Coats, 'Statement for the record worldwide threat assessment of the US Intelligence Community' (US Intelligence Community, 29 November 2019) 21 <www.dni.gov/files/ODNI/documents/2019-ATA-SFR---SSCI.pdf> accessed 3 De-

through the implementation of Sustainable Development Goals (SDGs). If an outbreak does occur, *P-M* can attenuate the chances that an outbreak develops into a pandemic.¹³ Seen in this light, it is clear that the measures to address the COVID pandemic are not *P-M*, but *P-A*. These measures are primarily aimed at reducing the impact of a disease that has already emerged and spread globally.

As early as 2005, Michael Osterholm argued that the world was unprepared for pandemics, in spite of clear evidence that pandemics were likely to become more frequent.¹⁴ In 2016, the American Intelligence Community (AIC), which provides global security advice to the American Senate, produced a report suggesting that the ‘international community remains ill prepared to collectively coordinate and respond to disease threats’, including coronaviruses.¹⁵ Early in 2019, months before the COVID outbreak, the AIC published a new report and stressed, again, the same point:

We assess that the United States and the world will remain vulnerable to the next flu pandemic or largescale outbreak of a contagious disease that could lead to massive rates of death and disability, severely affect the world economy, strain international resources, and increase calls on the United States for support.¹⁶

Needless to say, these early warnings fell on deaf ears. *P-M* requires strong international cooperation in areas such as the development of surveillance capabilities, transparent interstate communication, and schemes for mutual access to virus samples for the development of rapid diagnostic, new drugs and vaccines. Effective *P-M* will also require the strengthening of the World Health Organization, or perhaps even the creation of a ‘pandemic treaty’, as we are going to see in the next section. Effective *P-M* will also have to address the threat posed by bioterrorism, though we do not delve into this topic in this chapter.¹⁷

P-A, on the other hand, are mostly local. States and municipalities have the authority to enforce them within their own borders. *P-A* include, for instance, enactment of emergency laws, construction of field hospitals, introduction of contact tracing tools,

ember 2021; World Health Organization (WHO), *Annual review of diseases prioritized under the research and development blueprint informal consultation. Meeting report* (WHO 2018).

13 See e.g., the United Nations *2030 Agenda for Sustainable Development*: ‘Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks’; see United Nations, ‘Transforming our world: The 2030 Agenda for Sustainable Development’ (2015) 19 <<https://bit.ly/3wCSMci>> accessed 28 March 2022. See also Gordon Brown and Daniel Susskind, ‘International cooperation during the COVID-19 Pandemic’ (2020) 36 *Oxford Review of Economic Policy* 64, 69.

14 Michael Osterholm, ‘Preparing for the next pandemic’ (2005) 84 *Foreign Affairs* 24.

15 Clapper (n 12).

16 Coats (n 12) 21.

17 Ali Nouri and Christopher F Chyba, ‘Biotechnology and biosecurity’ in Nick Bostrom and Milan M Cirkovic (eds), *Global catastrophic risks* (Oxford University Press 2008); Toby Ord, *The precipice: Existential risk and the future of humanity* (1st edn, Hachette Books 2020) 203; Brown and Susskind (n 13) 73.

quarantine, and social distancing. These measures are supposed to be temporary. The quest for a vaccine, too, is an adaptation measure because its primary goal consists in adapting the human immune system to a new environment, and not to prevent the outbreak of a pandemic in the first place. If the infrastructure and expertise deployed for the development and distribution of vaccines (including booster vaccines) are kept for possible use in the future, so as to avoid another pandemic from happening, then the infrastructure and expertise will be valuable for the purpose of *P-M* as well. That adaptation measures may also work positively in terms of mitigation is well known from the analysis of climate change strategies. For reasons of effectiveness and minimising costs as well as risks, climate strategies aim at reducing impacts of climate change by addressing adaptation and mitigation together, either in such a way that adaptation or mitigation ‘is used as an entry measure providing the other one as a co-benefit’ (under the so-called complementarity approach) or ‘within an integrated framework without prioritising among [adaptation and mitigation] and giving due attention to system integrity and functionality’ (under the so-called synergy approach).¹⁸ Similarly, *P-A* measures, if appropriately complementary to or synergistic with the goal of reducing the occurrence of future pandemics, may have an added benefit in terms of *P-M*.

In any case, given their positive individual, local, and short-term adaptation effects, both governments and citizens have a strong incentive to pursue *P-A* by overcoming economic constraints such as, for instance, fiscal policy, or legal-ethical constraints such as freedom of movement and concerns about violation of privacy, or to change their lifestyles temporarily by wearing facemasks, engaging in social distancing, and avoiding handshaking. However, it should be noted that many people in different parts of the world do not fully support the enforcement of these measures. But, paradoxically, when it comes to *P-M*, the same actors perceive the same constraints as less malleable, even considering that some studies published prior to the COVID outbreak had shown that *P-M* is far less costly than *P-A*.¹⁹ From a cost-benefit perspective, the sheer costs of *P-A*, when compared to the costs of *P-M*, provide good reasons to favor *P-M* over *P-A*. But from an ethical perspective, too, it is easy to recognise that *P-M* should take precedence over *P-A*. Many moral costs – the loss of life, infringements of liberty, welfare costs to persons of all ages, and so on –

18 Lalisa A Duguma et al., ‘Climate change mitigation and adaptation in the land use sector: From complementarity to synergy’ (2014) 54 *Environmental Management* 420-32, 422. Cf. e.g., Klein et al. (n 5) 747-49; Zia A, ‘Synergies and trade-offs between climate change adaptation and mitigation across multiple scales of governance’ in Riyanti Djalante and Bernd Siebenhüner (eds), *Adaptiveness: Changing Earth system governance* (Cambridge University Press 2021).

19 Nita Madhav et al., ‘Pandemics: Risks, impacts, and mitigation’ in Dean T Jamison et al. (eds), *Disease control priorities: Improving health and reducing poverty* (3rd edn, World Bank Group 2018); Pike et al. (n 7).

may not be adequately captured by simple cost-benefit analysis, yet they are genuine and significant costs all the same, and they would be avoided by successful *P-M*.

Climate goals also require both mitigation and adaptation measures. *C-M* aim at keeping the global temperature increase below 1.5°C above pre-industrial levels by 2030 and reaching carbon neutrality by 2050.²⁰ The benefits of *C-M* (like the benefits of *P-M*) are mostly global. They require strong international cooperation. However, the effects of *C-M* will only be vividly felt within the next decades. The current generation, especially individuals who are already in their forties or older, cannot expect to benefit significantly from *C-M*. Effective *C-M*, thus, requires both strong international cooperation and strong transgenerational cooperation. *C-A*, on the other hand, can be effective at a local level and within a shorter time. *C-A* measures aim, for instance, at reshaping the infrastructure of cities in order to make them more robust against the consequences of heat waves, extreme weather, and sea-level rise.²¹ Interventions in rural areas are also necessary in order to make them less vulnerable, for example, to bush fires or river floods. *C-A* does not necessarily require strong international cooperation. However, the longer-term effectiveness of *C-A* ultimately depends on the success of *C-M*.²² Adaptation measures alone are likely to be of little help in coastal areas if, for example, sea levels rise over one meter on average by 2070 or over two meters by the end of the 21st century.²³

Since the inception of the COVID pandemic, several constraints on the feasibility of *P-A* have been successfully overcome. Some of these constraints are also constraints on the feasibility of *C-M*. Thus, in the course of 2020 and 2021, some of the constraints on the feasibility *C-M* have also been partially (even if only temporarily) overcome. Indeed, as mentioned earlier, one of the early indirect consequences of the implementation of *P-A* in 2020 was the reduction of greenhouse gas emissions. There are reasons to believe, then, that some constraints are more malleable in one context (*P-A*) and less malleable in other contexts (*P-M*, *C-A*, and *C-M*). But why? It might be correctly argued that the constraints on the feasibility of *P-A* are more malleable simply because the measures to address an ongoing pandemic are expected to remain in place for a limited amount of time, unlike the measures that are necessary to address the other goals (*P-M*, *C-A*, and *C-M*).²⁴ As we intend to show, though, this is

20 IPCC, *Global warming of 1.5°C*. (n 1) 33.

21 Ibid 396.

22 Dale Jamieson, 'Adaptation, mitigation, and justice' in Stephen Gardiner et al. (eds), *Climate ethics: Essential readings* (Oxford University Press 2010) 266-267.

23 Jonathan L Bamber et al., 'Ice sheet contributions to future sea-level rise from structured expert judgment' (2019) 116 *Proceedings of the National Academy of Sciences* 11195.

24 See e.g., Gustav Engström et al., 'What policies address both the coronavirus crisis and the climate crisis?' (2020) 76 *Environmental and Resource Economics* 789: 'Crisis management often requires exceptional policies, and may temporarily alter constraints on decision making.' (...) 'Many coronavirus policies have temporary effects on carbon emissions (e.g., reduced

not the only reason. We argue that the more a goal *G* requires strong international cooperation and strong transgenerational cooperation, the less malleable become the relevant constraints on *G*. This can be systematised as seen in table 2:

Table 2

	P-A	P-M	C-A	C-M
Strong international co-operation	not required ²⁵	required	not required ²⁶	required
Strong transgenerational cooperation for the benefit of future people	not required	not required	not required	required

Although *C-A* requires neither strong international cooperation nor strong transgenerational cooperation, the long-term effectiveness of *C-A*, as we have emphasised above, does require *C-M*, which in turn requires both strong international cooperation and strong transgenerational cooperation for the benefit of future generations. One might argue that effective *P-A* also requires strong international cooperation, even if it does not necessarily require strong transgenerational cooperation. After all, we cannot, for instance, expect each country to develop by itself a vaccine for COVID without the help of other countries. Also, the economic, social, and cultural consequences of national *P-A* measures, such as border closures, often depend on what other countries do. Uncoordinated national *P-A* measures can lead to unintended global impacts that undermine the intended benefits of national *P-A* measures. For example, uncoordinated measures can disrupt the flow of goods and interrupt production processes, negatively impacting the supply of goods to the population and the labour market. Border closures that restrict international travel in and out of the country also have the unintended consequence of undermining and impeding cultural and educational experiences internationally (and the more so, the more countries close their borders). Arts festivals, theatre and opera performances, and visiting and exchange programs often rely on artists, performers, scholars, and students to travel abroad.

traffic due to a lockdown), but we see such temporary effects as unimportant, given the long timescales involved in anthropogenic climate change.⁷

25 See (n 26) and see next paragraph.

26 Strong international cooperation is not required (see e.g., RJT Klein et al. (n 5) 747), but often conducive to the success of adaptation measures. In light of borderless climate risks and owing to the transnational and international effects of (national or regional) adaptation measures, understanding adaptation as territorially limited has been questioned and providing the technology for and financing adaptation measures have become the subject matter of international negotiations and projects. See, e.g., Magnus Benzie and Åsa Persson, ‘Governing borderless climate risks: Moving beyond the territorial framing of adaptation’ (2019) 19 *International Environmental Agreements: Politics, Law and Economics* 369.

However, we can at least imagine scenarios in which, for instance, one country pursues *P-A* effectively without having to engage in strong international cooperation. A country (or a small coalition of countries) may, for instance, achieve a breakthrough in the development of an effective vaccine and only agree to share the vaccine with other countries after its own population has been immunised, and provided it has also stockpiled millions of doses for possible use in its own territory in the future. This is a practice known as ‘vaccine nationalism’.²⁷ Now, of course, *P-A* will be more effective at a global level if it is pursued through strong international cooperation, but it does not necessarily require strong international cooperation. On the other hand, no country can seal off its borders from the effects of dangerous climate change or become entirely immune to its effects through the implementation of *C-A* only. In order to avert dangerous climate change, both strong international cooperation and strong transgenerational cooperation are required.

What are, then, the most salient constraints on the feasibility of strong international cooperation and strong transgenerational cooperation to address pandemic and climate goals? We argue that geopolitical constraints and proximity constraints constitute the most robust constraints on the feasibility of both climate and pandemic goals.

3 Geopolitical constraints

Many different forms of cross-border cooperation efforts can be deployed in an attempt to address global challenges. Consider, for instance, the swift development of effective COVID vaccines in the course of 2020 and 2021. This unprecedented achievement would not have been possible without close cooperation among researchers from different nationalities, working together in several research institutes around the world. The development of vaccines also required intense cooperation between states and the private sector of other states and between governmental and non-governmental agencies such as the WHO (World Health Organization), COVAX (COVID-19 Vaccines Global Access), CEPI (Coalition for Epidemic Preparedness Innovations) etc. And, of course, it also involved some cooperation among states. All these forms of cooperation can be correctly referred to as instances of *international cooperation*. In the face of a major global crisis, different forms of international cooperation will have to face different kinds of constraints.

27 Kai Kupferschmidt, ‘“Vaccine nationalism” threatens global plan to distribute COVID-19 shots fairly’ (Science (AAAS), 28 July 2020) <www.sciencemag.org/news/2020/07/vaccine-nationalism-threatens-global-plan-distribute-covid-19-shots-fairly> accessed 6 October 2020; Brown and Susskind (n 13); Ewen Callaway, ‘The unequal scramble for coronavirus vaccines – by the numbers. Wealthy countries have already pre-ordered more than two billion doses’ (2020) 584 Nature 506.

The international scientific cooperation for the development of COVID vaccines is a case in point. Despite travel restrictions, international scientific cooperation increased rather than decreased during the pandemic.²⁸ Travel restrictions, therefore, did not act as a strong constraint on the feasibility of international scientific cooperation. Of course, it does not follow from this that international scientific cooperation did not have to address some robust constraints during the pandemic. Vaccine research had to be carried out, for instance, within acceptable, previously agreed upon ethical constraints. They also had to meet legal constraints, which differed from country to country. Time constraints also had to be addressed, as vaccine research ultimately aimed at curbing the mounting number of COVID cases and deaths all around the world as soon as possible. In a similar vein, climate change has also sparked extensive international scientific cooperation among researchers from virtually every field of knowledge, based in every part of the world.²⁹ The problem, though, is that strong international cooperation for the purpose of scientific research on vaccines or for the creation of solutions to problems humanity has to address as a result of climate change did not give rise to a comparable degree of international cooperation among states. How is that possible? According to Jenny Lee and John Haupt, the main reason for this is that researchers and political leaders operate with ‘different logics’:

Politicians seek to promote the nation-state and engage in science primarily through a narrow lens of national development and national security, while scientists may find their allegiance to a scientific community that is less bound by political, ethnic and cultural borders.³⁰

In this chapter, to avoid confusion among different forms of international cooperation, when we speak of geopolitical constraints on the feasibility of international cooperation, we have in mind constraints on cooperation among states, even while recognising that other forms of international cooperation, especially scientific cooperation, may thrive at the same time cooperation among states becomes weaker. Many international relations theories do not limit their understanding of international relations to the strict domain of relation among states because, as we have just seen, we are familiar with a wide range of cross-border effective cooperative schemes. They involve not only scientific cooperation but also, for example, trade agreements, climate regimes, humanitarian aid, academic exchange, internet governance, which may or may not include the participation of states. There is, indeed, a broad family of institutionalist theories, comprising for instance liberal institutionalism, neoliberal

28 Jenny J Lee and John P Haupt, ‘Scientific collaboration on Covid-19 amidst geopolitical tensions between the US and China’ (2021) 92 *The Journal of Higher Education* 303.

29 IPCC, *Global warming of 1.5°C*. (n 1).

30 Lee and Haupt (n 28) 322. However, although international scientific cooperation intensified during the pandemic, especially at the beginning of the global health crisis, geopolitical constraints might revert this tendency in the longer run. See Nature (Editorial), ‘Protect precious scientific collaboration from geopolitics’ (2021) 593 *Nature* 477.

institutionalism, neo-institutionalism and so on, that recognises the relevance of non-state actors and international institutions in the domain of international relations. Accordingly, supporters of neo-institutionalism argue that the anarchic structure of the system of states does not represent a strong constraint on international cooperation, for the feasibility of effective international cooperation does not require a centralised global authority.³¹ The liberal institutionalist understanding of international relations contrasts with the understanding advanced by supporters of realism (and neorealism) in international relations – or *political realism*, as we will call them in this chapter. Supporters of political realism argue that the domain of international relations primarily concerns the relation among states, for the states are the main, if not the only relevant actors in the international arena.

While co-nationals can rely on the protection of police forces, armies and other government bodies in the event of a conflict among them, within their own territory, the structure of the system of states is such that one state cannot rely on similar institutions when another state (or group of states) threatens its security. As a sovereign political body, each state is ultimately responsible for its own security, whether individually or in a scheme of coalition with allies. As Kenneth Waltz, a well-known supporter of political realism, famously put the problem: ‘Citizens need not prepare to defend themselves. Public agencies do that. A national system is not one of self-help. The international system is’.³² Supporters of political realism argue that institutionalist theories of international relations fail to recognise the extent to which the structure of the system of states constrains each individual state to favor security over cooperation in some critically and sensitive areas of national interest.³³ They do not deny that states often cooperate, but rather claim that cooperation among states is narrowly constrained by the demands of state security.³⁴

Now, in order to understand the force of geopolitical constraints on international cooperation for the pursuit of pandemic and climate goals (*P-A*, *P-M*, *C-A*, and *C-M*), we have to focus on political realism, rather than on liberal institutionalism (or on other theories in the broad institutionalist family). There are three reasons for this. The first reason is that states are the only actors with the power and legitimacy to enforce the measures necessary to address pandemics and climate change in time to

31 Robert O Keohane, *After hegemony: Cooperation and discord in the world political economy* (Princeton University Press 2005); RAW Rhodes, Sarah A Binder and Bert A Rockman (eds), *The Oxford handbook of political institutions* (Oxford University Press 2006); Arthur A Stein, ‘Neoliberal institutionalism’ in Christian Reus-Smit and Duncan Snidal (eds), *The Oxford handbook of international relations* (Oxford University Press 2008); Thomas G Weiss, *Global governance: Why? what? whither?* (Polity Press 2013).

32 Kenneth Waltz, *Theory of international politics* (University of California 1979) 104.

33 John Grieco, ‘Anarchy and the limits of cooperation: A realist critique of the newest liberal institutionalism’ (1988) 42 *International Organization* 285.

34 Waltz (n 32) 104; Grieco (n 33) 485; John J Mearsheimer, ‘The false promise of international institutions’ (1994) 19 *International Security* 5, 9.

preclude catastrophic consequences. The international scientific community can inform the behaviour of states in these areas, but it has neither the power nor the mandate to enforce evidence-based pandemic and climate policies or to compel states to do so.

The second reason to focus on political realism is that a plethora of intergovernmental and non-governmental institutional bodies have not been able to preclude the emergence of the COVID pandemic, even though several international organisations, research institutes, and think-tanks around the world had been calling attention to the threats posed by pandemics and proposing strategies to mitigate those threats since at least 2005. Neither have intergovernmental and non-governmental institutional bodies been able to prevent the global increase of greenhouse gas emissions over the last decades.³⁵ Institutional theories can explain the success of international cooperation for the development of cutting-edge vaccines or sophisticated climate models. But institutional theories cannot adequately account for the lack of international cooperation among states in the pursuit of pandemic and climate goals. The reason for this, as suggested above, is that international scientific cooperation, on the one hand, and cooperation among states, on the other, are subjected to different kinds of constraints. Because political realism emphasises the force of geopolitical constraints on the prospect of cooperation among states (owing to the states considering national security as their top priority), political realism seems better equipped to account for states' unwillingness to cooperate with one another, even while other forms of international cooperation may intensify. However, it does not follow from this that, at a normative level, political realism is well equipped to guide the behaviour of states in the face of threats posed by pandemics and climate change, which brings us to the third reason to focus on realism.

The third reason is this: there are two quite distinct traditions of political realism. There is a well-known tradition associated with the works of influential authors such as, for instance, Kenneth Waltz, John Grieco, and John Mearsheimer. They argue that the absence of central authority within the system of states constrains the states to favour security over cooperation. Because the system of states lacks a body for the execution and enforcement of laws at a global level, similar to the legal and political bodies that exist at a national level, each state has to take care of its own security. In the international arena, no state can be sure that other states will come to its help when its survival as a state is at stake. Another reason to rely primarily on self-help in the international arena is the assumption, shared by several supporters of political

35 The Royal Society and National Academy of Sciences (NAS), 'Climate change evidence & causes. An overview from the Royal Society and the US National Academy of Sciences' (2020) <<https://royalsociety.org/topics-policy/projects/climate-change-evidence-causes/>>; and United Nations Environment Programme, 'Emissions Gap Report 2020. Executive Summary' (Nairobi, 2020) xi <www.unep.org/emissions-gap-report-2020> both accessed 29 December 2021.

realism, that today's allies may become tomorrow's enemies so that helping other states can be costly and dangerous in the long run.³⁶ As Grieco puts it: '(...) increasingly powerful partners in the present could become all the more formidable foes at some point in the future'.³⁷ We call this tradition of political realism *state survival realism*.

There is a previous generation of political realism associated with the works of authors such as, for instance, Hans Morgenthau, Georg Schwarzenberger, and John Herz, who recognised the force of geopolitical constraints on the prospect of cooperation among states. They have also realised that in the modern atomic age, no state can take care of its own security or the security of its citizens without strong cooperation with other states. A nuclear winter resulting from the massive deployment of nuclear weapons – whether for a preemptive strike or as a retaliation for a first strike – would leave everyone worst-off, and that quite regardless of state borders. For this reason, Morgenthau, Schwarzenberger, and Herz advocated global reform, rather than deterrence, as the most promising way to address questions of security. However, these authors may still be referred to as supporters of political realism, for they also argued that the states are the only actors in a position to implement the necessary measures to address challenges of global security, that is, challenges that affect the security of every state. As Herz aptly puts it: 'Hope – if any remains – is not in the impending emergence of world government in the place of nation-states. One can only work with what one has, that is, with states, their people and their leaders'.³⁸ But because this branch of political realism, committed to global reform, is quite distinct from the branch of political realism that emerged in the works of Waltz, Grieco, Mearsheimer, and having in mind that Morgenthau, Schwarzenberger, and Herz focused on global survival, rather than on state survival, we name this branch of political realism *global survival realism*. Let us see, then, how *state survival realism*, on the one hand, and *global survival realism*, on the other, account for the force of geopolitical constraints on the pursuit of pandemic and climate goals.

Consider *P-A* and *C-A* first. The pursuit of *P-A* and *C-A* does not require strong international cooperation (understood here as cooperation among states) because a state, given a set of options within its power, will typically deploy the measures that it considers will best promote its interest, even if to the detriment of other states and, sometimes, even when the measures are not backed by scientific evidence. Each state, considered as a sovereign political body, has the authority to deploy the adaptation measures it sees fit within its territory. It should not come as a surprise, then, that different states may achieve different degrees of success in their respective *P-A*

36 Waltz (n 32) 105; John J Mearsheimer, *The tragedy of great power politics* (updated edn, WW Norton & Company 2011) 52.

37 Grieco (n 33) 499.

38 John Herz, 'Technology, ethics, and international relations' (1976) 43 *Social Research* 98, 110.

and *C-A* policies, depending on their economic and technological power and on the epistemic quality of the choices they make. More powerful states, guided by evidence-based policies, may expect to attain *P-A* and *C-A* successfully without having to rely on strong international cooperation. Less powerful states, on the other hand, will have to rely on the help of other states to implement effective *P-A* and *C-A* within their respective territories. International cooperation may promote their interest, but for the more powerful states, cooperation with the less powerful states might be seen as an unnecessary burden.

Now, in saying that *P-A* and *C-A* do not require strong international cooperation, especially as far as the interests of the more powerful states are concerned, we, of course, do not mean to suggest that strong international cooperation would not lead to more effective adaptation policies, especially for the benefit of the less powerful states. The latter have to adapt to climate change and pandemics with a narrower set of options to choose from, with limited economic resources to finance climate adaptation, or limited access to vaccines and personnel protective equipment to promote pandemic adaptation. Moreover, strong international cooperation would also promote fairness on a global scale, regardless of other benefits it is likely to promote. It might be asked, then, why we argue that we should focus on political realism in the attempt to understand the constraints that stand in the way of pandemic and climate goals?

The reason is this: As predicted by state survival realism, during the COVID pandemic, the absence of central authority within the system of states may not have represented a strong constraint on international scientific cooperation, but it did not promote cooperation among states. Quite on the opposite, the pandemic heightened geopolitical tensions, specially between China and the United States. This point has been noticed by several authors who examined the geopolitical implications of the COVID pandemic in the course of 2020 and 2021.³⁹ Kickbusch and Holzscheiter, for instance, put the problem as follows:

Rather than inspiring a collective response to a public health emergency of international concern (PHEIC), the pandemic reinforced competitiveness between countries. Controlling the virus became a matter of achieving systems advantage, practising vaccine nationalism, controlling supply chains, and exploiting strategic geopolitical opportunities.⁴⁰

39 Gordon Brown and Daniel Susskind (n 13) 64; Jeffrey Cimmino, Matthew Kroenig and Barry Pavel, 'Taking stock: Where are geopolitics headed in the COVID-19 era?' (2020) Atlantic Council 21; David P Fidler, 'The Covid-19 pandemic, geopolitics, and international law' (2020) 11 *Journal of International Humanitarian Legal Studies* 237, 246; Armin von Bogdandy and Pedro Villarreal, 'International law on pandemic response: A first stocktaking in light of the coronavirus crisis' (2020) Max Planck Institute for Comparative Public Law & International Law (MPIL) Research Paper No 2020-07 <www.ssrn.com/abstract=3561650> accessed 19 December 2021; Jennifer Cole and Klaus Dodds, 'Unhealthy geopolitics: Can the response to COVID-19 reform climate change policy?' (2021) 99 *Bulletin of the World Health Organization* 148; Lee and Haupt (n 1).

40 Ilona Kickbush and Anna Holzscheiter, 'Can geopolitics derail the pandemic treaty?' (2021) *BMJ* e069129, 1.

Even within the European Union, geopolitical tensions increased during the COVID pandemic. Some analysts suggested, for instance, that Italy had been let down by other European Union states around March and April 2020, when it most needed them.⁴¹ Therefore, geopolitical constraints indeed represent a constraint on the feasibility of *P-A*. But the force of geopolitical constraints on a state's ability to implement successful *P-A* measures will mostly depend on its economic and technological power, along with decision-makers' willingness to follow evidence-based policies. *C-A* follows a similar pattern, as it has been generally admitted that poorer states have had more difficulty in adapting to climate change than richer ones.⁴²

When it comes to *P-M* and *C-M*, geopolitical constraints are even stronger, for no state, rich or poor, can expect to benefit from *P-M* and *C-M* without strong cooperation with other states. *P-M* and *C-M* aim at mitigating the underlying causes of pandemics and climate change. *P-M* strategies require, for instance, the pursuit of sustainable development goals to reduce the risks of new disease outbreaks. International organisations such as the WHO are also indispensable for the purpose of *P-M*. If a new disease outbreak does occur, the WHO must be notified quickly. Other states are then expected to follow its recommendations. *C-M* also requires strong international cooperation because no state can expect to mitigate greenhouse gas emissions effectively if the other states do not follow suit. On the contrary, a state will feel less encouraged to pursue *C-M*, if it has reasons to believe that other states will not do the same. Indeed, even if most states implemented radical *C-M* measures, a few states the size of Brazil, China, or Bangladesh might still feel encouraged to attract the whole industrial fossil fuel infrastructure, phased out everywhere else, increasing their own emissions and, thus, compromising the entire *C-M* efforts. Aware of this otherwise hypothetical scenario, states might decide not to implement *C-M* efforts in the first place or wait and engage in strong cooperation only after a substantial number of states have implemented effective *C-M* in their territories.⁴³

During the COVID pandemic, there were discussions on creating a *pandemic treaty* as an attempt to prevent future pandemics.⁴⁴ A pandemic treaty would work as a further strategy for *P-M*. Currently, the WHO International Health Regulations (IHR)

41 George Friedman, 'The coronavirus crisis and geopolitical impact' (2020) 16 Horizons: Journal of International Relations and Sustainable Development 24 <<https://bit.ly/3LqftVn>> accessed 28 March 2022.

42 Samuel Fankhauser and Thomas K J McDermott, 'Understanding the adaptation deficit: Why are poor countries more vulnerable to climate events than rich countries?' (2014) 27 Global Environmental Change 9; United Nations Conference on Trade and Development (UNCTAD), *Trade and development report 2021: From recovery to resilience: The development dimension* (United Nations 2021) 145.

43 Stephen Gardiner, *A perfect moral storm: The ethical tragedy of climate change* (Oxford University Press 2011) 95-98.

44 World Health Organization (WHO), 'The World Together: Establishment of an intergovernmental negotiating body to strengthen pandemic prevention, preparedness and response (SSA2/CONF./1)' (World Health Organization (WHO), 27 November 2021).

are the most important international legal instrument for global health. The IHR are binding upon the signatory states, but they lack proper enforcement mechanisms.⁴⁵ The WHO itself recognises that it cannot exact compliance from the signatory states:

The IHR (2005) have been agreed upon by consensus among WHO Member States as a balance between their sovereign rights and shared commitment to prevent the international spread of disease. Although the IHR (2005) do not include an enforcement mechanism per se for States which fail to comply with its provisions, the potential consequences of non-compliance are themselves a powerful compliance tool.⁴⁶

In order to address the problem of non-compliance, a pandemic treaty would have to revise that ‘balance’ between sovereignty, on the one hand, and states’ commitments to the benefit of global health, on the other. This might mean, for instance, that signatory states would have a duty to allow international regulatory bodies to inspect research facilities at short notice or to verify the causes of a new disease outbreak without interference from the state where the outbreak occurred, being subjected to sanctions in case of non-compliance.⁴⁷ For this reason, it soon became apparent that strong geopolitical constraints would have to be overcome to implement a pandemic treaty – and that despite the clear humanitarian and economic advantages of *P-M* over *P-A*. Moon and Kickbusch call attention to the force of geopolitical constraints on the prospect of a pandemic treaty in the following passage:

The pandemic has highlighted an enduring feature of the global system: the self-interested behaviour of sovereign states, and the challenge of ensuring that they comply with international rules when their perceived interests lie elsewhere. The first and foremost challenge of a treaty is for governments to make binding commitments to each other.⁴⁸

As predicted by state survival realism, powerful states such as China, the United States or Russia have declared, in 2021, that they are unwilling to endorse a pandemic *treaty* because a treaty, unlike, for instance, an *agreement*, or a *convention*, or an

45 Lawrence O Gostin and Rebecca Katz, ‘The international health regulations: The governing framework for global health security’ (2016) 94 *The Milbank Quarterly* 264; Andrea Spagnolo, ‘(Non) compliance with the international health regulations of the WHO from the perspective of the law of international responsibility’ (2018) 18 *Global Jurist* <<https://bit.ly/37VV77I>> accessed 28 March 2021.

46 World Health Organization (WHO), ‘Frequently asked questions about the international health regulations (2005)’ (WHO, 2005) <www.who.int/ihp/about/faq/en/> accessed 29 December 2021.

47 Sakiko Fukuda-Parr et al., ‘Pandemic treaty needs to start with rethinking the paradigm of global health security’ (2021) 6 *BMJ Global Health* e006392; Ronald Labonté et al., ‘A pandemic treaty, revised international health regulations, or both?’ (2021) 17 *Globalization and Health* 128; Haik Nikogosian and Ilona Kickbusch, ‘The case for an international pandemic treaty’ (2021) 372 *BMJ* n527; Jorge Vinales et al., ‘A Global pandemic treaty should aim for deep prevention’ (2021) 397 *The Lancet* 1791; Clare Wenham et al., ‘Preparing for the next pandemic’ (2021) 373 *BMJ* n1295; John Zarocostas, ‘Countries prepare for pandemic treaty decision’ (2021) 398 *The Lancet* 1951; Luke Taylor, ‘World Health Organization to begin negotiating international pandemic treaty’ (2021) 375 *BMJ* n2991.

48 Suerie Moon and Ilona Kickbusch, ‘A pandemic treaty for a fragmented global polity’ (2021) 6 *The Lancet Public Health* e355, e355.

accord, would be perceived as a constraint on their sovereignty.⁴⁹ Tellingly, the WHO document that registers the start of international discussions on the possibility of a pandemic treaty does not even use the word *treaty*. It says instead that it aims ‘to draft and negotiate a WHO convention, agreement or other international instrument on pandemic prevention, preparedness and response.’⁵⁰ As we can see, state survival realism provides a compelling account of the force exerted by geopolitical constraints on pandemic and climate goals. This account relies on the correct assumption that states, on the one hand, and non-state actors, on the other, operate with ‘different logics.’⁵¹ The analysis provided by supporters of state survival realism is sound to the extent that the *logic* with which states operate is also sound. But how sound is that logic in the face of threats like pandemics and climate change?

Supporters of state survival realism assume that the most pressing threat a state has to face is the very existence of other states in a system devoid of central government. The problem, however, is that state survival realism – and political leaders who endorse the principles of state survival realism in their respective foreign policies – fail to recognise that we now live in an even more ‘dangerous world’, but for different reasons. State borders were originally designed to provide security from external threats and promote internal cooperation. But state borders offer little protection against pandemics and climate change. They are also of little help in the event of a nuclear winter.

In the aftermath of World War II, supporters of global survival realism became keenly aware that states are ill-equipped to pursue self-protection in the event of nuclear war.⁵² Recent scholarship has shown that their respective investigations into the force of geopolitical constraints ultimately aimed at a better understanding of the conditions for global reform.⁵³ Thus, they were not suggesting that political leaders

49 Labonté et al. (n 47); Taylor (n 47).

50 World Health Organization (WHO), ‘The world together: Establishment of an intergovernmental negotiating body to strengthen pandemic prevention, preparedness and response’ <<https://bit.ly/3LIEv7M>> accessed 28 March 2022.

51 Grieco (n 33) 485.

52 George W Keeton and Georg Schwarzenberger, *Making international law work* (Stevens & Sons Limited 1946) 171-172; John Herz, ‘Rise and demise of the territorial state’ (1957) 9 *World Politics* 473, 474; Hans Morgenthau, ‘Introduction’ in David Mitrany, *A working peace system*, (Quadrangle Books 1966) 9; Hans Morgenthau, *Politics among nations: The struggle for power and peace* (5th edn, Alfred Knopf 1978) 539.

53 Campbell Craig, *Glimmer of a new leviathan: Total war in the realism of Niebuhr, Morgenthau, and Waltz* (Columbia University Press 2003); Stephanie Steinle, ‘“Plus Ça Change, plus c’est La Même Chose”: Georg Schwarzenberger’s Power Politics’ (2003) 5 *Journal of the History of International Law / Revue d’histoire du droit international* 387; Campbell Craig, ‘Hans Morgenthau and the world state revisited’ in Michael C Williams (ed), *Realism reconsidered: The legacy of Hans Morgenthau in international relations* (Oxford University Press 2007); Oliver Jütersonke, *Morgenthau, law and realism* (Cambridge University Press 2010) 179; William E Scheuerman, *The realist case for global reform* (Polity Press 2011); Richard Ned Lebow, ‘German Jews and American realism’ in Felix Rösch (ed), *Émigré scholars and the*

should follow the principles of state survival realism. Herz, in particular, realised that a nuclear conflict was not the only threat that might undermine human survival in the longer run. The combined effect of population growth, the depletion of our environment, and climate change, he argued, constituted a new kind of threat – one he named the ‘ecological threat’.⁵⁴ Early in the 1980’s, Herz proposed the foundation of a new subdiscipline within the field of international relations to devise strategies to address the ecological threat. He called it *Survival Research*.⁵⁵ But it was not until the turn of the century, amid growing concerns over the fate of humanity in the course of the 21st century, that Herz’s proposal started to attract more attention.⁵⁶

Given the pressing time constraints posed by threats such as pandemics and climate change, which cannot be avoided by means of deterrence or kept at bay through stricter border control, it is reasonable to assume, as some recent authors have suggested, that the national states are in a unique position to preclude global disasters.⁵⁷ Global survival realism, for this reason, has become even more meaningful now than it was in the aftermath of the Second World War. Global survival realism enables us to understand the enduring force of geopolitical constraints on the prospect of strong

genesis of international relations (Palgrave Macmillan 2014); Rens van Munster and Casper Sylvest, *Nuclear realism: Global political thought during the thermonuclear revolution* (Routledge 2016); William E Scheuerman, ‘Political realism and global reform: How realists learned to hate “the bomb” – and desire world government’ in Robert Schuett and Miles Hollingworth (eds), *The Edinburgh companion to political realism* (Edinburgh University Press 2018); Alison McQueen, ‘Morgenthau and the postwar apocalypse’, *Political realism in apocalyptic times* (Cambridge University Press 2018); Peter Stirk, ‘John H. Herz: Political realism in a fragile world’ in Robert Schuett and Miles Hollingworth (eds), *The Edinburgh companion to political realism* (Edinburgh University Press 2018).

- 54 John Herz, ‘Political realism revisited’ (1981) 25 *International Studies Quarterly* 182, 192; John Herz, ‘On human survival: Reflections on survival research and survival policies’ (2003) 59 *World Futures* 135, 136-137, 142; John Herz, ‘The security dilemma in international relations: Background and present problems’ (2003) 17 *International Relations* 411, 416; Herz, ‘Rise and demise of the territorial state’ (n 25) 492-493; Herz, ‘Technology, ethics, and international relations’ (n 11) 107-108; John Herz, ‘Foreword’ in Ken Booth and Nicholas J Wheeler (eds), *The security dilemma: Fear, cooperation and trust in world politics* (Palgrave Macmillan 2008).
- 55 Herz J, ‘Comment’ (1981) 25 *International Studies Quarterly* 237, 238; Herz J, ‘On human survival’ (n 54); Herz, ‘The security dilemma in international relations’ (n 54) 416.
- 56 Kennedy Graham, ‘“Survival research” and the “planetary interest”: Carrying forward the thoughts of John Herz’ (2008) 22 *International Relations* 457; Casper Sylvest, ‘Technology and global politics: The modern experiences of Bertrand Russell and John H. Herz’ (2013) 35 *The International History Review* 121; Munster and Sylvest (n 53); Tim Stevens, ‘Productive pessimism: Rehabilitating John Herz’s survival research for the anthropocene’ in Tim Stevens and Nicholas Michelsen (eds), *Pessimism in international relations: Provocations, possibilities, politics* (Palgrave Macmillan, Springer Nature 2020).
- 57 Jonathan Symons, ‘Realist climate ethics: Promoting climate ambition within the classical realist tradition’ (2019) 45 *Review of International Studies* 141; Richard Beardsworth, ‘Climate science, the politics of climate change and futures of IR’ (2020) 34 *International Relations* 374; Anatol Lieven, *Climate change and the nation state: The case for nationalism in a warming world* (Oxford University Press 2020).

cooperation among states. To the extent that global survival realism is a *realist* theory, it can explain why cooperation among states can become weaker while other forms of international cooperation (for example, scientific cooperation) become stronger. But global survival realism, unlike state survival realism, advances good reasons for a reassessment of the force of geopolitical constraints in the face of new threats to state security, that is, threats that have been largely ignored by supporters of states survival realism, or ‘extreme political realism’, as Herz would call them.⁵⁸ Yet, even if geopolitical constraints are overcome by means of global reform, the force of *proximity constraints* would still have to be addressed.

4 Proximity constraints

People generally prefer to interact and cooperate with individuals they feel close to, such as relatives, friends, members of their community, or co-nationals. This feeling of closeness is what we call a *proximity constraint*. The word *proximity* should be understood here in psychological terms. Given a set of choices that will affect the lives of a wide range of individuals, proximity constraints typically constrain one to benefit the individuals one feels close to. It does not mean, of course, that proximity constraints determine one’s choice; otherwise, proximity constraints would not be soft constraints but hard constraints. Yet proximity constraints may be difficult to overcome. The person or people one feels close to may be close in space or close in time, in which case we will speak of spatial proximity constraint as opposed to temporal proximity constraint.

The spatial dimension is relatively clear: we tend to interact and cooperate more closely with people who are spatially (or territorially) close to us. However, we speak of spatial proximity constraints to refer to perceived proximity, that is, to a sense of closeness rather than actual physical proximity. One can feel close to some people, even while not being spatially close to them. Approximately 6 million Palestinians live in the diaspora worldwide, the majority of them far from the Middle East region. Many of them, for instance the ca. 500,000 Palestinians living in Chile, are likely to strongly support Palestinians in Palestine, even though most of them have never lived in Palestine or have no intention of returning to the region. Similarly, friends and family members may feel special obligations towards each other, even while living thousands of miles apart. Proximity constraints have their origins in experiences that are only possible when people live together in physical proximity. However, the sense of obligation and loyalty they engender may persist long after separation or migration. A sense of obligation and belonging can go a long way toward fostering cooperation among people who feel close to one another. In this regard, a proximity

58 Herz, ‘The security dilemma in international relations’ (n 54) 413.

constraint works as an ‘enabling condition’ rather than as a constraint on strong cooperation.⁵⁹ On the other hand, a sense of obligation and loyalty that promotes cooperation among ‘one’s own people’ may at the same time exclude from the benefits of cooperation people who are not perceived as equally close. In this case, proximity can work as a strong constraint on the prospects for broader cooperation.

One prominent manifestation of spatial proximity constraints is the phenomenon of nationalism. Henry Shue refers to this particular soft constraint as the ‘compatriots take priority’ principle.⁶⁰ More recently, the same attitude has also been referred to as the ‘my country first’ attitude.⁶¹ But spatial proximity constraints in the form of nationalism should not be confounded with geopolitical constraints. Whether or not a state can rely on the support of loyal citizens, moved by patriotism and a strong sense of allegiance, is not relevant for our account of geopolitical constraints on strong international cooperation. As far as geopolitical constraints are concerned, the main problem lies not in a state’s relationship with its people but, as explained in the previous section, in the institutional structure of international relations. Relations among states are subject to the constraints of a system devoid of central normative authority. However, this is not to deny that the relation of a people with their own state, in the form of nationalism, may also create strong constraints on the feasibility of *C-M* and *P-M*, as both of them require from the relevant actors, as we have seen earlier, a capacity to leave behind the ‘my country first’ attitude in the face of global threats.

Now, whether nationalism might work as a powerful enabling condition for the purpose of *C-M*, as some authors have recently suggested, remains to be seen. Authors such as, for instance, Anatol Lieven and Daniele Conversi argue that international climate policies cannot be successfully implemented unless they are communicated, at a domestic level, in the language of nationalism.⁶² For now, though, it seems that nationalism has been a constraint rather than an enabling condition on the feasibility of *C-M*. It seems, indeed, that politicians such as former American President Donald Trump and far-right Brazilian President Jair Bolsonaro have justified their

59 For a definition of ‘Enabling conditions’ see e.g., IPCC, *Global warming of 1.5°C*. (n 1) 548: ‘Conditions that affect the feasibility of adaptation and mitigation options, and can accelerate and scale-up systemic transitions that would limit temperature increase to 1.5°C and enhance capacities of systems and societies to adapt to the associated climate change, while achieving sustainable development, eradicating poverty and reducing inequalities. Enabling conditions include finance, technological innovation, strengthening policy instruments, institutional capacity, multilevel governance, and changes in human behaviour and lifestyles.’

60 Henry Shue, *Basic rights: Subsistence, affluence, and U.S. foreign policy*. (Princeton University Press 1980) 131-132.

61 Brown and Susskind (n 13); Farok J Contractor, ‘Global leadership in an era of growing nationalism, protectionism, and anti-globalization’ (2017) 2 Rutgers Business Review 163.

62 Lieven (n 7); Daniele Conversi, ‘The ultimate challenge: Nationalism and climate change’ (2020) 48 Nationalities Papers 625.

notorious lack of commitment to *C-M* by endorsing a ‘my country first’ attitude.⁶³ On the other hand, nationalism may possibly function as an effective enabling condition as far as the feasibility of *P-A* is concerned. The rhetoric of war during the COVID pandemic can be interpreted as an attempt to foster morale and enhance internal cohesion in the face of a major health crisis. On 16 March 2020, for instance, the French president Emmanuel Macron declared: ‘Nous sommes en guerre’ (we are at war).⁶⁴ In a press conference on 22 March 2020, President Donald Trump followed suit: ‘Look, the greatest thing we can do is win the war. The war is against the virus. That’s the war.’⁶⁵ In the months that followed, similar declarations became common among politicians.

The temporal dimension of proximity constraints may perhaps be less apparent than its spatial counterpart, but it is equally critical for the feasibility of *C-M*:⁶⁶ we tend to favour the interests of people who are close to us in time. The force of temporal proximity constraints may explain why so many people seem to assume, implicitly or explicitly, that, due to the distance in time, our concern for future people should count less than our concern for currently living people. The idea here is that the force of moral claims becomes weaker and weaker the farther in time future generations are from us. But can this assumption be *justified* from a moral point of view?

Being indifferent to the interests of future people, as Frank Ramsey put the problem nearly a hundred years ago, is ‘ethically indefensible and arises merely from the

63 In many of their statements both presidents also expressed climate skepticism. Here, we do not explore how much of a causal factor this understanding or attitude has been in their not engaging in *C-M* policies.

64 Paris Match, ‘Emmanuel Macron: “Nous sommes en guerre” (2020) *Paris Match* <<https://www.parismatch.com/Actu/Politique/Emmanuel-Macron-Nous-sommes-en-guerre-1678992>> accessed 29 December 2021.

65 The White House, ‘Remarks by President Trump, Vice President Pence, and Members of the Coronavirus Task Force in Press Briefing’ (*The White House*, 22 March 2020) <<https://bit.ly/3DkVYuj>> accessed 28 March 2022.

66 Because both *P-A* and *P-M* measures are likely to benefit primarily those currently living or living in the near future, the temporal proximity constraint as understood here does not arise for pandemic measures. However, the highly unequal distribution of these measures’ burdens among age groups is an issue that raises questions of transgenerational fair burden-sharing. This is because, on the one hand, in terms of protection from the serious harms of contagion, the measures primarily serve the more and most vulnerable, which in OECD countries include the large number of people over 65. On the other hand, not only are the short-term social and economic burdens of the pandemic measures (including job losses, reduced income and career prospects, and loss of well-being under conditions of social distancing and lockdowns) significantly higher for younger people, but as taxpayers they will also have to pay for the measures financed by further public debt over a long period of time. See David Yarrow, ‘Should the older generation pay more of the COVID-19 debt?’ in Fay Niker and Aveek Bhattacharya (eds), *The political philosophy of the pandemic* (Bloomsbury 2021) 72 and 80. A concern for the inclusion of the perspectives and interests of the age group of young people is also underlying a recent comment in Iris M Blom et al., ‘Youth versus pandemics: The role of future generations in the pandemic treaty’ (2021) 9 *The Lancet Global Health* e1361.

weakness of the imagination.⁶⁷ The same point had already been made by Henry Sidgwick in the 19th century and was later revived by, among others, John Rawls and Derek Parfit.⁶⁸ Yet, the non-reciprocal nature of the relationship between the current generation and more distant future generations supports the hypothesis that when push comes to shove and currently living people are asked to make some sacrifices for the benefit of future generations, those alive today are likely to prioritise their own interests to the detriment of the interest of future generations. The ‘absolute difference in power’⁶⁹ between living people and those who will live in the future is a permanent feature of intergenerational relations. While current generations can affect the conditions of life of future generations, the reverse is not true.⁷⁰ The danger is that this unchangeable asymmetry of power leads to ‘the tyranny of the contemporary’.⁷¹

Proximity constraints are particularly difficult to overcome because, as some studies suggest, our capacity to develop a sense of allegiance and ties of loyalty probably emerged in the context of small groups, which did not comprise much more than 150 individuals.⁷² Everyone knew each other personally. Evolutionary pressure may have selected for individuals who could develop a sense of allegiance and loyalty to other individuals who were spatially close to them. But it is unlikely that evolution would favour the survival of individuals who felt committed to the claims of all individuals equally, regardless of kinship or family ties, not to mention the claims of individuals who did not yet exist. Although cosmopolitan views have been explicitly put forward

67 Frank Ramsey, ‘A mathematical theory of savings’ (1928) 38(152) *The Economic Journal* 543.

68 John Rawls, *A theory of justice* (Harvard University Press 1971) 293; Henry Sidgwick, *The methods of ethics* (7th edn, Hackett Publishing Company 1981) (originally published in 1874) 414; Derek Parfit, *Reasons and persons* (Clarendon Press 1984) 480-486.

69 Brian Barry, ‘Justice between generations’ in Peter MS Hacker and Joseph Raz (eds), *Law morality and society. Essays in honor of H. L. A. Hart* (Clarendon Press 1977) 269-272; Brian Barry, *Theories of justice. A treatise on social justice Vol. I* (Harvester-Wheatsheaf 1989) 189. See also Dieter Birnbacher, *Klimaethik: Nach uns die Sintflut?* (Reclam 2016) 152-153; Dale Jamieson, *Reason in a dark time: Why the struggle against climate change failed – and what it means for our future* (Oxford University Press 2014) 114-130.

70 Nevertheless, such future people may be able to set back the interests or even wrong present or past persons, insofar as the latter have or had interests relating to posthumous future states. Similarly, those alive today may be subject to moral constraints in their actions relating to persons who lived in the distant past. See Lukas H Meyer, *Historische Gerechtigkeit* (de Gruyter 2005) 78-99.

71 Gardiner (n 43) 143-184.

72 Robin Dunbar, ‘Neocortex size as a constraint on group size in primates’ (1992) 22 *Journal of Human Evolution* 469; Robin Dunbar, *Grooming, gossip, and the evolution of language* (Faber and Faber 1997) 55-79; Robin Dunbar, ‘The social brain hypothesis and its implications for social evolution’ (2009) 36 *Annals of Human Biology* 562; Robin Dunbar, *How many friends does one person need? Dunbar’s number and other evolutionary quirks* (Harvard University Press 2010) 21-34; Robin Dunbar, ‘The social whirl’ in Robin Dunbar, Louise Barrett and John Lycett (eds), *Evolutionary psychology: A beginner’s guide: Human behaviour, evolution, and the mind* (Oneworld 2007).

in Western socio-political philosophy since the fourth century BCE, the idea of modern human rights arguably only emerged in the early modern period.⁷³ Ordinary moral reasoning does not reflect the notion that all sentient beings have the same moral claims against all moral agents in a way that could effectively constrain the enormous power differentials among those alive today and the immutable power asymmetry between those alive today and future non-contemporaries. Therefore, our moral beliefs or intuitions may not be a good guide to action when we must consider the interests of billions of people who are not part of our own states or who will exist only in the future.⁷⁴ Edward O. Wilson⁷⁵ puts the problem quite poignantly in saying that: ‘We have created a Star Wars civilisation, with Stone Age emotions, medieval institutions, and godlike technology’.⁷⁶

How can we then expect to overcome the grip of proximity constraints if a tendency to prioritise the interests of the members of one’s own group – whether temporally or spatially defined – seems psychologically hardwired? One radical approach in this regard might consist in changing the human brain instead of changing the human environment. Biomedical tools, such as drugs or genetic engineering, might, at least in principle, be used in order to modulate human beings’ motivational states in such a way as to make them more cooperative and responsive to the needs of other people, including people who are only going to live hundreds of years from now. For instance, Julian Savulescu and Ingmar Persson have recently advocated the ‘moral bioenhancement’ of humankind on a global scale to preclude dangerous climate

-
- 73 Pauline Kleingeld and Eric Brown, ‘Cosmopolitanism’ (2019) in Edward N. Zalta (ed), *The Stanford encyclopedia of philosophy* (Winter 2019 Edition) <<https://stanford.io/35hk78H>> accessed 28 March 2022.
- 74 Dale Jamieson, ‘Ethics, public policy, and global warming’ (1992) 17 *Science, Technology, & Human Values* 139, 148; Ezra M Markowitz and Azim F Shariff, ‘Climate change and moral judgement’ (2012) 2 *Nature Climate Change* 243-244; TJ Kasperbauer, ‘The implications of psychological limitations for the ethics of climate change’ (2016) 25 *Environmental Values* 353; Joshua David Greene, *Moral tribes: Emotion, reason, and the gap between us and them* (The Penguin Press 2013) 22-25; Ingmar Persson and Julian Savulescu, *Unfit for the future: The need for moral enhancement* (1st ed, Oxford University Press 2012) 103-106.
- 75 Edward O Wilson, *The social conquest of Earth* (Liveright 2013) 7. For similar observations (but not in terms of evolutionary theory) see also Günter Anders, ‘Gebote des Atomzeitalters’ in Robert Jungk (ed), *Off limits für das Gewissen. Der Briefwechsel zwischen dem Hiroshima-Piloten Claude Eatherly und Günther Anders* (Rowohlt Verlag 1961) 26-34 (originally published in Frankfurter Allgemeine Zeitung, July 13, 1957).
- 76 Cf also Joshua Greene: ‘Morality evolved to enable cooperation, but this conclusion comes with an important caveat. Biologically speaking, humans were designed for cooperation, but only with some people. Our moral brains evolved for cooperation within groups, and perhaps only within the context of personal relationships. Our moral brains did not evolve for cooperation between groups (at least not all groups)’ Greene (n 83) 13. Cf also Toby Ord: ‘Evolution and cultural adaptation have led to fairly well-tuned judgments for these questions in our day-to-day lives (when it’s safe to cross the road; whether to buy a smoke alarm), but are barely able to cope with risks that threaten hundreds of people, let alone those that threaten billions and the very future of humanity’, Ord (n 17) 195.

change.⁷⁷ For the sake of argument, we not only leave aside serious doubts about the democratic legitimacy and, more generally, the moral justifiability of such a policy but also assume that there are no hard constraints on the feasibility of moral enhancement on such a scale. However, we would have to contend with strong technological, legal, political, and social constraints to pursue this kind of action against dangerous climate change. Moreover, the proposal seems to beg the question: If we could convince human beings, or perhaps only the relevant decision-makers, to morally enhance themselves in order to pursue *C-M* (and possibly also *P-M*), couldn't we also convince them to implement the relevant measures without all the trouble of pursuing moral enhancement in the first place? More importantly, given the obvious urgency, is it anything but wishful thinking to suppose that we could overcome all constraints on the feasibility of moral enhancement before it is too late to avert dangerous climate change?⁷⁸

Proximity constraints are very difficult to overcome. Because we cannot realistically expect to change human motivational states through new technologies in the foreseeable future without also having to overcome several other soft constraints (putting to the side serious doubts about the moral permissibility of such measures), it does not seem advisable to try to 'overcome' temporal proximity constraints in the sense of changing human psychology.⁷⁹ We should rather create the conditions that enable individuals to act for the benefit of future generations in spite of temporal proximity constraints. The design of our legal and political institutions already reflects our recognition that we cannot expect individuals to act against strong proximity constraints. Indeed, if we cannot, for example, realistically expect an individual to be impartial towards the interest of their friends or family members, we have good reasons to design our domestic and international institutions in such a way that legislators, judges, members of the executive branch, and international negotiators will be effectively hindered from making decisions that, while promoting their personal interests, will be detrimental to others, including future people. The force of proximity constraints does not prevent us from designing and supporting institutions that are likely to implement minimally just policies also in terms of protecting the fundamental rights that future people hold against currently living people.⁸⁰ In like manner, if

77 Persson and Savulescu (n 74) 73-85. See also S Matthew Liao, Anders Sandberg and Rebecca Roache, 'Human engineering and climate change' (2012) 15 *Ethics, Policy and Environment* 206.

78 Aleksandra Kulawska and Michael Hauskeller, 'Moral enhancement and climate change: Might it work?' (2018) 83 *Royal Institute of Philosophy Supplement* 371; Norbert Paulo and Jan Christoph Bublitz, 'How (not) to argue for moral enhancement: Reflections on a decade of debate' (2019) 38 *Topoi* 95.

79 Kasperbauer (n 74) 216.

80 Future people's minimal justice claims can be accounted for by 'basic needs intergenerational sufficientarianism'. See Lukas H Meyer and Thomas Pölzler, 'Basic needs and sufficiency:

at the individual level most people do not feel strongly motivated to act for the benefit of future generations, even if, upon reflection, they recognise that future people should not be harmed on the grounds of unsustainable lifestyles of past generations, we have good reasons to support the establishment of institutions that promote, *inter alia*, *C-M*.⁸¹

5 Conclusion

Greenhouse gas emissions have increased rather than decreased over the last decades. This led many authors and policy-makers to wonder if effective climate action is politically feasible. In this chapter, we have shown that the abatement of the COVID pandemic required the relevant actors to overcome several soft constraints that also stand in the way of effective climate action. This is evidence that effective climate action is, indeed, politically feasible.

Climate action involves both adaptation and mitigation measures. Our analysis shows that pandemics, too, require both adaptation and mitigation measures. The current effort to abate the COVID pandemic should be primarily understood in terms of adaptation measures. These measures differ from mitigation measures that aim at avoiding a pandemic from emerging in the first place. Accordingly, we focused our analysis on four different kinds of policies: adaptation measures that address an ongoing pandemic (*P-A*); mitigation measures that prevent, as much as possible, a pandemic from emerging (*P-M*); adaptation measures that address climate change (*C-A*); and mitigation measures that prevent, as much as possible, the emergence of catastrophic climate change (*C-M*). We have shown that some of the soft constraints that play a role in one set of policies may also be present in another set. But the more a policy requires strong international cooperation *and* transgenerational cooperation for the benefit of future non-contemporaries, the harder it is to address the relevant soft constraints.

We have focused on two particularly important kinds of soft constraints, which we have called *geopolitical constraints* and *proximity constraints*. The latter comprises *spatial* proximity constraints and *temporal* proximity constraints. In our analysis of the geopolitical constraints, we have critically discussed some key ideas proposed by

The foundations of intergenerational justice' in Stephen Gardiner (ed), *The Oxford handbook of intergenerational ethics* (Oxford University Press) (forthcoming).

81 On overcoming the temporal proximity constraint by institutional reform within democracies and internationally, see Dieter Birnbacher, *Verantwortung für zukünftige Generationen* (Reclam 1988) 258-268; Inigo Gonzales-Ricoy and Axel Gosseries (eds), *Institutions for future generations* (Oxford University Press 2016); Ivo Wallimann-Helmer et al., 'Democracy for the future: A conceptual framework to assess institutional reform' (2017) 21 *Jahrbuch für Wissenschaft und Ethik* 197.

authors in the tradition of political realism in international relations. We have assumed and argued here with the realists that the state remains the most powerful and legitimate actor in a unique position to address the structural changes that are necessary to pursue *P-M* and *C-M*. But we have also shown that temporal proximity constraint remains a robust constraint on actions that require transgenerational cooperation for the benefit mainly of future people. Temporal proximity constraints affect *C-M* policies in an especially strong way, but they do not significantly affect the other set of policies (*P-A*, *P-M*, and *C-A*). We have proposed then, in line with our analysis of geopolitical constraints, that temporal proximity constraints primarily require changes in institutional design, both at the domestic and international level, rather than radical changes in individuals' motivational states.⁸²

Bibliography

- Anders G, 'Gebote des Atomzeitalters' in Jungk R (ed), *Off limits für das Gewissen. Der Briefwechsel Günther Anders / Claude Eatherly* (Rowohlt 1961).
- Bamber JL et al., 'Ice sheet contributions to future sea-level rise from structured expert judgment' (2019) 116 *Proceedings of the National Academy of Sciences* 11195.
- Barry B, 'Justice between generations' in Hacker P and Raz J (eds), *Law morality and society. Essays in honor of HLA Hart* (Clarendon Press 1977).
- , *Theories of justice. A treatise on social justice Vol. I* (Harvester-Wheatsheaf 1989).

82 We thank our colleagues at the working section Moral and Political Philosophy at the University of Graz for their support: Katja Heine, Katharina Hiebaum, Clemens Kordasch, Henrike Sannecke, and Philipp Scheiber for assistance in research and the formatting of the manuscript; Jonathan Knutzen for numerous comments on the content and language of the penultimate draft, which significantly improved the text. Special thanks to Birgit Bednar-Friedl (University Graz, Department of Economics) for discussion of how to distinguish between mitigation and adaptation and very helpful literature references. Thanks also to Daniel de Vasconcelos Costa, Federal University of Rio de Janeiro, for helpful assistance in research. The authors began exchanging ideas on the chapter when the first COVID-19 pandemic lockdown brought Lukas Meyer's CAPES Visiting Professorship at the Federal State University of Rio de Janeiro, Faculty of Law, under grant number 88887.466722/2019-00 to an early end. Reflections on the topic are contained in part in previously published essays by Lukas Meyer and Marcelo de Araujo, namely, 'COVID pandemic and climate change: An essay on soft constraints and global risks', in Sarah Kenehan and Corey Katz (eds.) *Climate justice and feasibility: Normative theorizing, feasibility constraints, and climate action* (Rowman Littlefield 2021) 213-238; Lukas Meyer and Marcelo de Araujo, 'The COVID-19 pandemic and climate change: Why have responses been so different?' *E-International Relations*, 20 April 2020, 1-6, ISSN 2053-8626. Many colleagues provided very valuable comments and critiques on drafts of these papers, in particular we would like to thank Elias Moser, Norbert Paulo, Daniel Petz, Thomas Pözlner, and Santiago Truccone (all University of Graz), Kian Mintz-Woo (University College Cork), Felicitas Holzer (University of Zürich), Francisco García Gibson (University of Buenos Aires), Corey Katz (Georgian Court University) and, last but not least, Sarah Kenehan (Marywood University).

- Beardsworth R, 'Climate science, the politics of climate change and futures of IR' (2020) 34 *International Relations* 374.
- Benzie M and Persson Å, 'Governing borderless climate risks: Moving beyond the territorial framing of adaptation' (2019) 19 *International Environmental Agreements: Politics, Law and Economics* 369.
- Birnbacher D, *Verantwortung für zukünftige Generationen* (Reclam 1988).
- , *Klimaethik: Nach uns die Sintflut?* (Reclam 2016).
- Blom IM et al., 'Youth versus pandemics: The role of future generations in the pandemic treaty' (2021) 9 *The Lancet Global Health* e1361.
- Bricker DJ and Ibbitson J, *Empty planet: The shock of global population decline* (Crown Publishers 2019).
- Broome J, 'Efficiency and future generations' (2018) 34 *Economics and Philosophy* 221.
- Brown G and Susskind D, 'International cooperation during the COVID-19 pandemic' (2020) 36 *Oxford Review of Economic Policy* 64.
- Budolfson M and Spears D, 'Population ethics and the prospects for fertility policy as climate mitigation policy' (2021) *The Journal of Development Studies* 1.
- Callaway E, 'The unequal scramble for Coronavirus vaccines – by the numbers. Wealthy countries have already pre-ordered more than two billion doses.' (2020) 584 *Nature* 506.
- Cimmino J, Kroenig M and Pavel B, 'Taking stock: Where are geopolitics headed in the COVID-19 era?' (2020) *Atlantic Council* 21.
- Clapper JR, 'Statement for the record worldwide threat assessment of the US Intelligence Community, 9 February' (US Intelligence Community, 9 February 2016) <https://www.armed-services.senate.gov/imo/media/doc/Clapper_02-09-16.pdf> accessed 4 March 2022.
- Coats DR, 'Statement for the record worldwide threat assessment of the US Intelligence Community' (US Intelligence Community, 29 January 2019) <<https://bit.ly/3JO4YKO>> accessed 4 March 2022.
- Cole J and Dodds K, 'Unhealthy geopolitics: Can the response to COVID-19 reform climate change policy?' (2021) 99 *Bulletin of the World Health Organization* 148.
- Contractor FJ, 'Global leadership in an era of growing nationalism, protectionism, and anti-globalization' (2017) 2 *Rutgers Business Review* 163.
- Conversi D, 'The ultimate challenge: Nationalism and climate change' (2020) 48 *Nationalities Papers* 625.
- Craig C, *Glimmer of a new Leviathan: Total war in the realism of Niebuhr, Morgenthau, and Waltz* (Columbia University Press 2003).
- , 'Hans Morgenthau and the world state revisited' in Williams MC (ed), *Realism reconsidered: The legacy of Hans Morgenthau in international relations* (Oxford University Press 2007).
- Daszak P, 'We are entering an era of pandemics – it will end only when we protect the rainforest' *The Guardian* (28 July 2020) <<https://bit.ly/3JPJXzI>> accessed 28 March 2022.
- Dobson AP et al., 'Ecology and economics for pandemic prevention' (2020) 369 *Science* 379.
- Duguma LA et al., 'Climate change mitigation and adaptation in the land use sector: From complementarity to synergy' (2014) 54 *Environmental Management* 420.
- Dunbar R, 'Neocortex size as a constraint on group size in primates' (1992) 22 *Journal of Human Evolution* 469.
- , *Grooming, gossip, and the evolution of language* (Faber and Faber 1997).

- , ‘The social whirl’ in Dunbar R, Barrett L and Lycett J (eds), *Evolutionary psychology: A beginner’s guide: Human behaviour, evolution, and the mind* (Oneworld 2007).
- , ‘The social brain hypothesis and its implications for social evolution’ (2009) 36 *Annals of Human Biology* 562.
- , *How many friends does one person need? Dunbar’s number and other evolutionary quirks* (Harvard University Press 2010).
- Engström G et al., ‘What policies address both the coronavirus crisis and the climate crisis?’ (2020) 76 *Environmental and Resource Economics* 789.
- Erman E and Möller N, ‘A world of possibilities: The place of feasibility in political theory’ (2020) 26 *Res Publica* 1.
- Fankhauser S and McDermott TKJ, ‘Understanding the adaptation deficit: Why are poor countries more vulnerable to climate events than rich countries?’ (2014) 27 *Global Environmental Change* 9.
- Fidler DP, ‘The Covid-19 pandemic, geopolitics, and international law’ (2020) 11 *Journal of International Humanitarian Legal Studies* 237.
- Friedlingstein P et al., ‘Global carbon budget 2020’ (2020) 12 *Earth System Science Data* 3269.
- Fukuda-Parr S et al., ‘Pandemic treaty needs to start with rethinking the paradigm of global health security’ (2021) 6 *BMJ Global Health* e006392.
- Friedman G, ‘The Coronavirus crisis and geopolitical impact’ (2020) 16 *Horizons: Journal of International Relations and Sustainable Development* 24.
- Gardiner S, *A perfect moral storm: The ethical tragedy of climate change* (Oxford University Press 2011).
- Gilbert P and Lawford-Smith H, ‘Political feasibility: A conceptual exploration’ (2012) 60 *Political Studies* 809.
- Gonzales-Ricoy I and Gosseries A (eds), *Institutions for future generations* (Oxford University Press 2016).
- Gostin LO and Katz R, ‘The international health regulations: The governing framework for global health security’ (2016) 94 *The Milbank Quarterly* 264.
- Graham K, ‘“Survival research” and the “planetary interest”: Carrying forward the thoughts of John Herz’ (2008) 22 *International Relations* 457.
- Greene JD, *Moral tribes: Emotion, reason, and the gap between us and them* (The Penguin Press 2013).
- Grieco J, ‘Anarchy and the limits of cooperation: A realist critique of the newest liberal institutionalism’ (1988) 42 *International Organization* 285.
- Herszenhorn DM et al., ‘Europe fails to help Italy in Coronavirus fight’ *Politico* (5 March 2020) <<https://www.politico.eu/article/eu-aims-better-control-coronavirus-responses/?ref=hvper.com>> accessed 25 March 2022.
- Herz J, ‘Rise and demise of the territorial state’ (1957) 9 *World Politics* 473.
- , ‘Technology, ethics, and international relations’ (1976) 43 *Social Research* 98.
- , ‘Comment’ (1981) 25 *International Studies Quarterly* 237.
- , ‘Political realism revisited’ (1981) 25 *International Studies Quarterly* 182.
- , ‘On human survival: Reflections on survival research and survival policies’ (2003) 59 *World Futures* 135.
- , ‘The security dilemma in international relations: Background and present problems’ (2003) 17 *International Relations* 411.

- , ‘Foreword’ in Booth K and Wheeler NJ (eds), *The security dilemma: Fear, cooperation and trust in world politics* (Palgrave Macmillan 2008).
- IPCC, ‘Summary for policymakers’ in IPCC *Climate change 2014: Mitigation of climate change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. (Edenhofer O et al. (eds) Cambridge University Press 2014).
- , *Global warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty* (Masson-Delmotte V et al. (eds) Cambridge University Press 2018) <<https://www.ipcc.ch/sr15/>> accessed 4 March 2022.
- , *Climate change 2021: The physical science basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (Masson-Delmotte V et al. (eds) Cambridge University Press 2021) <<https://www.ipcc.ch/report/ar6/wg1/>> accessed 4 March 2022.
- Jamieson D, ‘Ethics, public policy, and global warming’ (1992) 17 *Science, Technology, & Human Values* 139.
- , ‘Adaptation, mitigation, and justice’ in Gardiner S et al. (eds), *Climate ethics: Essential readings* (Oxford University Press 2010).
- , *Reason in a dark time: Why the struggle against climate change failed – and what it means for our future* (Oxford University Press 2014).
- Jewell J and Cherp A, ‘On the political feasibility of climate change mitigation pathways: Is it too late to keep warming below 1.5°C?’ (2020) 11 *WIREs Climate Change* e621.
- Judge K, ‘The federal reserve: A study in soft constraints’ (2015) 78 *Law and Contemporary Problems* 65.
- Jütersonke O, *Morgenthau, law and realism* (Cambridge University Press 2010).
- Kasperbauer TJ, ‘The implications of psychological limitations for the ethics of climate change’ (2016) 25 *Environmental Values* 353.
- Keohane RO, *After hegemony: Cooperation and discord in the world political economy* (1st Princeton classic edn, Princeton University Press 2005).
- Kickbush I and Holzscheiter A, ‘Can geopolitics derail the pandemic treaty?’ (2021) *BMJ* e069129, 1.
- Klein RJT et al., ‘Inter-relationships between adaptation and mitigation’ in IPCC *Climate change 2007: Impacts, adaptation and vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (Parry ML et al. (eds) Cambridge University Press 2007) 745.
- Kleingeld P and Brown E, ‘Cosmopolitanism’ (2019) in Zalta EN (ed) *The Stanford encyclopedia of philosophy* (The Metaphysics Research Lab Winter 2019 edition).
- Kulawska A and Hauskeller M, ‘Moral enhancement and climate change: Might it work?’ (2018) 83 *Royal Institute of Philosophy Supplement* 371.
- Kupferschmidt K, ‘“Vaccine nationalism” threatens global plan to distribute COVID-19 shots fairly’ (*Science (AAAS)*, 28 July 2020) <<https://www.sciencemag.org/news/2020/07/vaccine-nationalism-threatens-global-plan-distribute-covid-19-shots-fairly>> accessed 25 March 2022.
- Labonté R et al., ‘A pandemic treaty, revised international health regulations, or both?’ (2021) 17 *Globalization and Health* 128.
- Lebow RN, ‘German Jews and American realism’, in Rösch F (ed) *Émigré scholars and the genesis of international relations* (Palgrave Macmillan 2014).

- Lee JJ and Haupt JP, 'Scientific collaboration on Covid-19 amidst geopolitical tensions between the US and China' (2021) 92 *The Journal of Higher Education* 303.
- Liao SM, Sandberg A and Roache R, 'Human engineering and climate change' (2012) 15 *Ethics, Policy & Environment* 206.
- Lieven A, *Climate change and the nation state: The case for nationalism in a warming world* (Oxford University Press 2020).
- Lindahl JF and Grace D, 'The consequences of human actions on risks for infectious diseases: A review' (2015) 5 *Infection Ecology & Epidemiology* 30048.
- Ma ATH et al., 'Protected areas as a space for pandemic disease adaptation: A case of COVID-19 in Hong Kong' (2021) 207 *Landscape and Urban Planning* 103994.
- Madhav N et al., 'Pandemics: Risks, impacts, and mitigation' in Jamison DT et al. (eds), *Disease control priorities: Improving health and reducing poverty* (3rd edn, World Bank Group 2018).
- Markowitz EM and Shariff AF, 'Climate change and moral judgement' (2012) 2 *Nature Climate Change* 243.
- McQueen A, 'Morgenthau and the postwar apocalypse' in McQueen A, *Political realism in apocalyptic times* (Cambridge University Press 2018).
- Mearsheimer JJ, 'The false promise of international institutions' (1994) 19 *International Security* 5.
—, *The tragedy of great power politics* (updated edn, WW Norton & Company 2014).
- Meyer LH, *Historische Gerechtigkeit* (de Gruyter 2005).
— and Pözlner T, 'Basic needs and sufficiency: The foundations of intergenerational justice' in Gardiner S (ed), *The Oxford handbook of intergenerational ethics* (Oxford University Press forthcoming).
- Moon S and Kickbush I, 'A pandemic treaty for a fragmented global polity' (2021) 6 *The Lancet Public Health* e355.
- Morgenthau H, 'Introduction', in Mitrany D (ed), *A working peace system* (Quadrangle Books 1966)
—, *Politics among Nations: The struggle for power and peace* (5th edn revised, Alfred Knopf 1978).
- Nature Editorial, 'Protect precious scientific collaboration from geopolitics' (2021) 593 *Nature* 477.
- Nikogosian H and Kickbush I, 'The case for an international pandemic treaty' (2021) 372 *BMJ* n527.
- Nouri A and Chyba CF, 'Biotechnology and biosecurity' in Bostrom N and Cirkovic M (eds), *Global catastrophic risks* (Oxford University Press 2008).
- Ord T, *The precipice: Existential risk and the future of humanity* (1st edn, Hachette Books 2020).
- Osterholm M, 'Preparing for the next pandemic' (2005) 84 *Foreign Affairs* 24.
- Parfit D, *Reasons and persons* (Clarendon Press 1984).
- Paris Match, 'Emmanuel Macron: "Nous sommes en guerre"' (2020) *Paris Match* <<https://www.parismatch.com/Actu/Politique/Emmanuel-Macron-Nous-sommes-en-guerre-1678992>> accessed 4 March 2022.
- Paulo N and Bublitz JC, 'How (not) to argue for moral enhancement: Reflections on a decade of debate' (2019) 38 *Topoi* 95.
- Persson I and Savulescu J, *Unfit for the future: The need for moral enhancement* (1st edn, Oxford University Press 2012).
- Pike J et al., 'Economic optimization of a global strategy to address the pandemic threat' (2014) 111 *Proceedings of the National Academy of Sciences* 18519.

- Ramsey F, 'A mathematical theory of savings' (1928) 38 *The Economic Journal* 543.
- Rawls J, *A theory of justice* (Harvard University Press 1971).
- Rhodes RAW, Binder SA and Rockman BA (eds), *The Oxford handbook of political institutions* (Oxford University Press 2006).
- Roser D, 'Climate justice in the straitjacket of feasibility' in Birnbacher D and Thorseth M (eds), *The politics of sustainability: Philosophical perspectives* (Routledge 2015).
- Scheuerman WE, *The realist case for global reform* (Polity Press 2011).
- , 'Political realism and global reform: How realists learned to hate "the bomb" – and desire world government' in Schuett R and Hollingworth M (eds), *The Edinburgh companion to political realism* (Edinburgh University Press 2018).
- Shue H, *Basic rights: Subsistence, affluence, and U.S. foreign policy* (Princeton University Press 1980).
- Sidgwick H, *The methods of ethics* (7th edn, Hackett Publishing Company 1981).
- Smit B et al., 'The science of adaptation: A framework for assessment' (1999) 4 *Mitigation and Adaptation Strategies for Global Change* 199.
- Spagnolo A, '(Non) compliance with the international health regulations of the WHO from the perspective of the law of international responsibility' (2018) 18 *Global Jurist* <<https://www.degruyter.com/document/doi/10.1515/gj-2017-0025/html>> accessed 25 March 2022.
- Stein AA, 'Neoliberal institutionalism' in Reus-Smit C and Snidal D (eds), *The Oxford handbook of international relations* (Oxford University Press 2008).
- Steinle S, "'Plus ça change, plus c'est la même chose": Georg Schwarzenberger's power politics' (2003) 5 *Journal of the History of International Law / Revue d'histoire du droit international* 387.
- Stevens T, "'Exeunt omnes". Survival, pessimism and time in the work of John H. Herz' (2018) 46 *Millennium: Journal of International Studies* 283.
- , 'Productive pessimism: Rehabilitating John Herz's survival research for the anthropocene' in Stevens T and Michelsen N (eds), *Pessimism in international relations: Provocations, possibilities, politics* (Palgrave Macmillan, Springer Nature 2020) <<http://search.ebscohost.com/login.aspx?direct=true&scope=site&db=nlebk&db=nlabk&AN=2179396>> accessed 17 December 2020.
- Stirk P, 'John H. Herz: Political realism in a fragile world' in Schuett R and Hollingworth M (eds), *The Edinburgh companion to political realism* (Edinburgh University Press 2018).
- Sylvest C, 'Technology and global politics: The modern experiences of Bertrand Russell and John H. Herz' (2013) 35 *The International History Review* 121.
- Symons J, *Ecomodernism: Technology, politics and the climate crisis* (Polity Press 2019).
- , 'Realist climate ethics: Promoting climate ambition within the classical realist tradition' (2019) 45 *Review of International Studies* 141.
- Taylor L, 'World Health Organization to begin negotiating international pandemic treaty' (2021) 375 *BMJ* n2991.
- The Royal Society and National Academy of Sciences (NAS), 'Climate change evidence & causes. An overview from the Royal Society and the US National Academy of Sciences' (2020) <<https://royalsociety.org/topics-policy/projects/climate-change-evidence-causes/>> accessed 29 December 2021.
- The White House, 'Remarks by President Trump, Vice President Pence, and members of the Coronavirus Task Force in press briefing' (*The White House*, 22 March 2020) <<https://bit.ly/3DkVYuj>> accessed 28 March 2022.

- Tollefson J, 'Why deforestation and extinctions make pandemics more likely' (2020) 584 Nature 175.
- United Nations, 'Transforming our world: The 2030 Agenda for Sustainable Development' (2015) <<https://sustainabledevelopment.un.org/post2015/transformingourworld/publication>> accessed 2 December 2020.
- United Nations Environment Programme, 'Emissions gap report 2020. Executive summary' (Nairobi, 2020) <<https://www.unep.org/emissions-gap-report-2020>> accessed 4 January 2022.
- Vinuales J et al., 'A global pandemic treaty should aim for deep prevention' (2021) 397 The Lancet 1791.
- van Munster R van and Sylvest C, *Nuclear realism: Global political thought during the thermonuclear revolution* (Routledge 2016).
- von Bogdandy A and Villarreal P, 'International law on pandemic response: A first stocktaking in light of the Coronavirus crisis' (2020) Max Planck Institute for Comparative Public Law & International Law (MPIL) Research Paper No 2020-07 <<https://www.ssrn.com/abstract=3561650>> accessed 19 December 2021.
- Wallimann-Helmer I et al., 'Democracy for the future: A conceptual framework to assess institutional reform' (2017) 21 Jahrbuch für Wissenschaft und Ethik 197.
- Waltz K, *Theory of international politics* (University of California 1979).
- Weiss TG, *Global governance: Why? what? whither?* (Polity Press 2013).
- Wenham C et al., 'Preparing for the next pandemic' (2021) 373 BMJ n1295.
- Wilson EO, *The social conquest of Earth* (Norton & Company 2013).
- World Health Organization (WHO), *Annual review of diseases prioritized under the research and development blueprint informal consultation. Meeting report* (WHO 2018).
- Yarrow D, 'Should the older generation pay more of the COVID-19 debt?' in Niker F and Bhattacharya A (eds), *The political philosophy of the pandemic* (Bloomsbury 2021).
- Zarocostas J, 'Countries prepare for pandemic treaty decision' (2021) 398 The Lancet 1951.
- Zia A, 'Synergies and trade-offs between climate change adaptation and mitigation across multiple scales of governance' in Djalante R and Siebenhüner B (eds), *Adaptiveness: Changing Earth system governance* (Cambridge University Press 2021).

The cost of carbon: Economic approaches to damage evaluation

Michael Hanemann

Abstract

This contribution discusses the valuation of climate damage through economic valuation methods, initially developed for valuating environmental damages and benefits from environmental protection. Damages from climate change have been quantified either at a macro level (global climate impacts) or at a micro level (impacts limited in time and/or location), with the latter being particularly relevant for climate litigation. This article first outlines the general background of economic valuation and explains the methods employed for monetising climate damages. It then outlines their use in policymaking and litigation and explains how climate damages have been evaluated with a particular focus on US practice.

1 Introduction

This chapter discusses the assessment of the damages from climate change using economic methods of valuation. These methods are not specific to climate change – they were developed mainly in the 1970s by environmental economists to value damages from pollution and benefits from environmental protection/restoration. Subsequently, they have been applied widely in other fields of economics. The methods are known collectively as non-market valuation. What they aim to do, what specifically they measure, and how, is described in section 2. Section 3 summarises how these methods have been used in environmental policymaking and litigation in the United States. Their use is now well accepted in the context of cost-benefit analysis for policy, but it is more checkered in the context of litigation for what is known as natural resource damages (NRDA). Section 4 reviews how damages from climate change have been evaluated. This has been done on two scales: a macro scale purporting to monetise all impacts globally, and a micro (local) scale evaluating particular impacts at particular locations at particular points in time. The macro scale analysis takes the form of a damage function in an integrated assessment model (IAM) – a postulated relationship connecting increases in regional or global average annual temperature to reductions in regional or global GDP postulated to result from the temperature increase. With their damage functions, IAMs have been used to calculate what is known as the social cost of carbon (SCC). The SCC estimate has been used in the US since 2010 for regulatory review of proposed major regulations. However, the IAM damage functions themselves, and the resulting SCC estimates, are probably

on too coarse a spatial scale and a temporal scale to be useful in climate-related litigation. The micro scale local impact studies are directly relevant for climate litigation. Section 5 offers concluding observations.

2 Non-market valuation in economics¹

Value means different things in different discourses. We start by describing what economists mean by value and how that differs from other discourses. Moral philosophy identifies three distinctions: (1) anthropocentric versus non-anthropocentric (ecocentric) value, (2) utilitarian versus deontological value, and (3) instrumental versus intrinsic value. Anthropocentrism makes humans the ultimate source of value: things have value only to the extent that (some) humans assign value to them. Ecocentric value, in contrast, holds that organisms and biota can have value even if no human being thinks so. Utilitarian values stem from the ability to contribute in some way to human well-being. A deontological value stems from something that is required of humans as a duty. Finally, the instrumental value of a thing is derived from its role as a means towards an end other than itself; an intrinsic value is a value that exists independently of its usefulness for achieving a goal.²

Economics focuses on human interests, preferences and behavior. Thus, the economic concept of value is anthropocentric and is based on utilitarian principles.³ While recognising that other concepts of value can have merit, I focus here on values that can be captured through economic valuation. This is a broader set of values than often presumed. A common belief is that economic value refers to the commercial value of items and exists only for items for which there is (or could be) a market with a market price. In fact, anything that people care for, from whatever motive, is subject in principle to valuation using economists' concept of value.

The economic concept of value rests on the notion that individuals have preferences for things and can make judgments regarding their own well-being. They can judge among options; they can compare alternative combinations of outcomes involving things that they care about; they can assess whether one combination is bet-

1 This section draws heavily on the excellent discussion in National Research Council, *Valuing Ecosystem Services: Toward Better Environmental Decision-Making* (The National Academies Press 2005) Chapters 2 and 4.

2 The modern notion of intrinsic value of intrinsic value reflects the notion that rights should be extended beyond human beings, Christopher Stone, *Should trees have standing? Towards a theory of legal rights for natural objects* (William Kaufmann 1974).

3 A value for an item held by humans which is being measured by economists could be instrumental or intrinsic. If the item has an intrinsic value, this is because humans deem this so. If an item has an intrinsic value from a deontological perspective and it is lost, it is irreplaceable. From an anthropocentric approach, however, whether the lost item is irreplaceable depends on what humans think.

ter than another, or worse, or the same. Using these assumptions, economic value is defined in terms of a trade-off by an individual. When an economist states that, for some individual, X has a value of 5 units of Y, it means no more, and no less, than that the individual would be willing to exchange X for 5 units of Y.⁴ The item Y is the metric, or *numeraire*, for measuring the value of X.

The numeraire for economic valuation, Y, must be something that the individual sees as having value. It also must be something the individual sees as commensurable with X (comparable to X).⁵ Most commonly, Y is a currency, such as dollars.⁶ This assumes that the item being valued is in principle replaceable with other things that are also of value and that money can buy.

Some who affirm the intrinsic value of ecosystems and biota object to the notion of quantifying that value. This quantification is, by definition, anthropocentric since humans are doing it. It also implies a ranking (i.e., a statement of which items are 'more valuable,' and possibly by how much). There may be objections to one or both of these implications of quantification. However, as described in the next section, there are contexts in which quantification of values proves useful or even necessary by providing a systematic way in which the values being quantified can be factored into an administrative or judicial decision process.

The economic concept of value is something that is inherently subjective and idiosyncratic. When an economist states that, for some individual, item X has a value of \$50, what is being asserted is that the individual would be willing to exchange X for \$50. The trade-off necessarily depends on the person's preferences, outlook, and specific circumstances (including income) at the time.

Conceptually, there are two distinct ways to frame the exchange in terms of which an individual's economic value is defined. One framing is the willingness to pay (WTP). The WTP value of X is *the maximum amount* of numeraire, Y, that the individual would be willing to give up (pay) to obtain X. The other framing is the willingness to accept (WTA). The WTA value of X is *the minimum amount* of numeraire (money) that the individual would be willing to accept as compensation for foregoing X.⁷ The exchange may not, in fact, be practical or feasible. But the WTP and WTA

4 Note what is being compared is changes: having X versus not-X as compared to having 5 units of Y versus not having that. In a climate context, what is being valued is a *change* in climate.

5 If Y is seen as incommensurable with X, the individual cannot make a tradeoff between X and Y.

6 In less monetised communities, time has been used as the numeraire – e.g., how much of your time would you give up in order to have X? Some ecologists have recommended using units of energy as the metric for measuring value, e.g., Howard T Odum, *Environmental accounting: energy and environmental decision-making* (John Wiley 1996). This rejects the premise that value arises from the preferences of individuals and that the purpose of valuation is to estimate the tradeoffs that individuals are willing to make.

7 These definitions apply when X is something seen by the individual as beneficial. If X is something that is harmful, the WTP value of X is the maximum amount of numeraire that the

values of X are what the person would exchange for X *if this were feasible*. If not an actual transaction, it is a thought experiment on the part of the individual.

The WTP and WTA values of a particular item are generally not the same. When they are different, economic theory predicts that the WTP value is often likely to be smaller than the WTA value.⁸ If the WTP and WTA values differ, which measure to use is a legal or moral judgment rather than a matter of economic theory. Suppose that X is something desirable. If the individual is not considered legally or morally to be entitled to X, then his WTP value for X is likely the more relevant. But, if the individual is considered entitled to enjoy X, then his WTA value is likely the more relevant.

This conceptual framework, measuring an individual's value for an item as either the most he would be willing to give up to obtain X or the minimum compensation he would be willing to accept to forego X, with money (or time) as the numeraire, is applicable in principle to many items that people may value, regardless of whether or not they gain access to the item commercially through a market. It has been widely applied to value many things not for sale in the marketplace, including health outcomes, cultural and historical artifacts, public goods, and social programs provided by governmental or non-governmental, non-profit organisations. The framework, first articulated by Maler (1974), is the logical extension to non-market items of how economists conceptualise the valuation of marketed commodities.

The economic value of any item is not the same as its price. First, the item may not have a market price but is still of value to the person experiencing it. For example, a person may place a value on living in a better place with better weather. In that case, the trade-off is a thought experiment – if I could exchange a quantum of my income to secure better weather, just how much income would I be willing to exchange? Second, even if the item does have a market price, the individual may be willing to pay *more* than the price, and this extra payment is part of its value to the person. The cost of an item and what it is worth to me are two distinct concepts, just as supply and demand are distinct concepts. Something may be expensive, but I place

individual would be willing to pay to avoid X, and the WTA is the minimum compensation that the individual would be willing to accept to endure X.

8 The theory underlying this issue is laid out in Michael W Hanemann, 'The economic theory of WTP and WTA' in Ian Bateman and Ken Willis (eds), *Valuing the environment preferences: Theory and practice of the contingent valuation method in the US, EC and developing countries* (Oxford University Press 1999) and Michael W Hanemann, 'Willingness to pay and willingness to accept: How much can they differ?' (1991) 81 *American Economic Review* 635. The WTP value is smaller than the WTA value if the individual's preferences for the item display a diminishing marginal rate of substitution and the item has the property that the demand for it increases, rather than declines, with the individual's income. There is no difference between the WP and WTA values if the individual's preferences are such that income is seen as a perfect substitute for X.

a low value on it. Something may be cheap, but I place a very high value on it. Therefore, price does not, in general, measure value to the consumer.⁹

Economic theory assumes that people behave purposively and consistently and that they have preferences that both motivate their actions and are revealed through those actions, whether in the marketplace or another setting, including a survey or an experiment. While economics does not prescribe what preferences people should have, it does provide a framework for classifying different preferences according to their economic implications.

People can value a thing for multiple reasons and from multiple motives. The value a person places on an item overall, reflecting all her motives, is referred to as her *total economic value* for the item.¹⁰ Economists make a distinction between two components of total economic value: *use value* and *non-use value*.¹¹ A person's use value for an item is the value that she places on the item from motives connected with someone's use of the item, whether her own use or that of someone else. Non-use value is the value she places on an item from motives not directly connected with the use of that item by anybody in any tangible way. I may value the preservation of the Grand Canyon in Arizona and be willing to contribute money to secure this because I want to be able to go there in the future, or I want my grandchildren to be able to go – those are examples of a use value. Alternatively, I may be willing to give money to protect the Grand Canyon because I see it as a wonder of nature and an iconic item in this country's natural heritage. For me, it has an intrinsic value, regardless of whether people visit it. This is a non-use value, also called an existence value or a passive-use value. Typically, use values involve some human 'interaction' with the item, whereas non-use values do not.

Both use value and non-use value are measured through an exchange – trading off a change in the amount of the item being valued, whether for its use value, its non-use value, or both (its total economic value) for an exchange of something else of value (money, time). But, the distinction has economic significance because the trade-off used to measure use and non-use value cannot be implemented in the same way; it has to be measured differently. The two methods of measurement are known as *revealed preference* and *stated preference*. Collectively, these are referred to as non-market valuation.

9 Cost and value coincide only if I am making a fine-grained choice of how many units to buy. In that case, under the assumption of diminishing marginal utility, it is a plausible presumption that the marginal value to me of the *last* unit I purchased just equals the unit's cost, which is why I stopped buying with that unit. The earlier units that I bought would have been more valuable to me than their cost, which is why I kept on buying more units.

10 This may be measured as either a WTP value or a WTA value.

11 The distinction was originally due to John V Krutilla, 'Conservation reconsidered' (1967) 57 *American Economic Review* 777.

To measure economic value, economists need to find a trade-off. With the revealed preference approach, one finds data on choices that the individual (or others like her) have made that involve a trade-off between money (if that is the numeraire) and the item to be valued or something close to it. Those choices will typically have occurred in some form of market or commercial transaction. A researcher obtains transactions data and estimates a demand function that represents the choice behaviour observed in the data. With the demand function estimated, economic theory provides a pathway to infer the particular utility function that could have generated the estimated demand function, from which WTP and WTA measures can be estimated for various potential changes involving the item whose demand function has been estimated. The key is to have obtained an accurate and complete representation of the consumer's choice behaviour.¹²

With the stated preference approach, a researcher engages with a sample of subjects in the context of a survey or an experiment and presents them with one or more explicit trade-offs in which they reveal their WTP or WTA values, depending on the design of the trade-off. Econometric estimation of the responses permits WTP or WTA values to be extrapolated to a larger group. The key is to design and implement a survey in such a way that respondents see what they are offered as a real trade-off, understand it correctly, and respond thoughtfully and to the best of their ability.¹³

Thus, with revealed preference, the researcher finds choices that exist in the marketplace, or at least extrapolates from marketplace choices, and uses assumptions to identify the underlying preferences from which WTP or WTA values can be inferred. With stated preference, the researcher creates choices trade-offs for subjects in a survey or experiment that more directly reveal their WTP or WTA values.¹⁴

Since non-use values are rooted in motives not connected with the use of the item in any tangible way, they cannot be measured through the revealed preference approach, since that is based on observed uses alongside observed market prices from which a demand function can be estimated. Thus, stated preference is required to estimate non-use values. Typically, the stated preference approach will be framed in such a way that it measures respondents' total economic value for the item in question, i.e., use value plus non-use value combined.

From my own experience in having contributed to the development of both stated preference methodology and revealed preference methodology, I would say that both

12 This necessarily relies on assumptions and judgments made by the researcher, including the mathematical form of the demand function, as well as judgments made regarding estimation procedures. Such judgments crucially affect the valuation results.

13 As will be mentioned below, the NOAA Panel on Contingent Valuation (1993) specified strict requirements for a valuation survey to be deemed reliable.

14 Patricia A Champ, Kevin J Boyle and Thomas C Brown (eds), *A primer on nonmarket valuation* (2nd edn, Springer 2017) is an excellent guide to revealed and stated preference and their implementation.

approaches present challenges. Both can be done badly, and both can be done well. Both call for good judgment on the part of the researcher and attention to detail. To do either well can take a significant investment of time and resources. All the more so if data collection is required, regardless of whether this is revealed preference data or stated preference data.

Because of the cost and time involved, there is temptation to look for a shortcut. One shortcut, often used, is *benefit transfer*. Benefit transfer takes an existing estimate of economic value developed for a different population, at a different time, and perhaps for a different but related item at a different location, and attempts to extrapolate ('transfer') that estimate of value to the item in question. There are two ways of doing this. A value transfer takes a specific estimate of value and applies it, possibly with some adjustment. A function transfer uses an estimated equation to predict a customised value for the intended application. As with any extrapolation, the quality of the resultant value estimate depends on the validity of the extrapolation. This can often be a leap of faith.

3 How non-market valuation is used

As mentioned, non-market valuation incorporates the economic concept of value and the economic methods of valuation that are used for market commodities and extends them to anything that humans value, whether market or non-market. With both market and non-market valuation, there are several contexts in which the economic quantification of such values is useful or even necessary, such as informing public policy decisions, including cost-benefit analysis, improving private sector decision making, and supplying the information needed in litigation, including the assessment of compensation for damages.

In the US, the requirement for cost-benefit analysis in rulemaking began in 1981 with President Reagan's Executive Order 12291. That order directed cabinet departments (but not independent regulatory agencies) to refrain from taking regulatory action 'unless the potential benefits to society for the regulation outweigh the potential costs to society.' It also required agencies to prepare a 'regulatory impact analysis' for each 'major' rule, defined as any regulation likely to result in an annual economic impact over \$100 million. This order was replaced by President Clinton in 1993 with Executive Order 12866, which established similar (but not identical) analytical principles and requirements. Agencies were directed to

assess all costs and benefits of available regulatory alternatives, including the alternative of not regulating. Costs and benefits shall be understood to include both quantifiable measures (to the fullest extent that these can be usefully estimated) and qualitative measures of costs and benefits that are difficult to quantify, but nevertheless essential to consider. Further, in choosing among alternative regulatory approaches, agencies should select those approaches that maximise net benefits (including potential economic, environmental, public health and safety, and

other advantages; distributive impacts; and equity), unless a statute requires another regulatory approach.

Many of these principles were re-iterated in President Obama's 2011 Executive Order 13563, which required agencies, to the extent permitted by law, to 'propose or adopt a regulation only upon a reasoned determination that its benefits justify its costs.'

The reference to 'unless permitted by law' highlights the fact that agencies implement laws passed by Congress. Some statutes have required cost-benefit analysis, other statutes have prohibited it, and yet others were silent and did not preclude it. For example, the 1990 Clean Air Act Amendments required the US Environmental Protection Agency (EPA) to develop periodic reports of the Act's benefits and costs, although it specifies that the costs any regulation promulgated should not be used to block the EPA from its central mission to protect 'human health and welfare.' A degree of equivocation regarding the proper role for cost-benefit analysis still persists. On one side, there is the view that regulation should be discouraged unless the quantified benefits exceed the costs.¹⁵ On the other side, some hold that not all socially important benefits can be quantified adequately, nor should they be. The upshot is that, while cost-benefit analysis is now an established item in regulatory policymaking in the US, sometimes it serves more to inform decisions than to drive them.

While the use of non-market valuation for compensation of certain environmental damages commenced in the US around the same time, in the 1980s, it has experienced a more turbulent history.

But first: how were violations of US environmental laws handled before the 1980's? To the extent that environmental laws were being enforced, which, especially for the Clean Water Act, was not so much,¹⁶ the main thrust was sending notices, issuing warnings and other informal efforts to bring violators into compliance. In the event of persistent non-compliance, there could then be administrative, civil, or, very rarely, criminal actions. In the case of administrative and civil judicial actions, penalties could be assessed up to prescribed maxima per violation per day. Aside from a monetary penalty, a violator might be required to make payment based on a spreadsheet model used by the EPA to estimate (very crudely) the amount of profit that might have been earned by not complying with environmental regulations. There was

15 President Trump held an extreme version of this view. His 2017 Executive Order 13771 directed agencies to 'cap' the total costs imposed by all their new regulations each year, regardless of benefits, and required that, whenever an agency proposed a new regulation, 'it shall identify at least two existing regulations to be repealed.' This order was rescinded by President Biden on his first day in office.

16 Clifford Rechtschaffen, 'Enforcing the Clean Water Act in the twenty-first century: Harnessing the power of the public spotlight' (2004) 55 *Alabama Law Review* 775.

no provision for any payment based on the amount of the environmental damage caused by the violations.

This changed for a particular type of pollution event with the enactment in 1980 of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA, Superfund Act) and its reauthorising amendments, the Superfund Amendments and Reauthorization Act (SARA) of 1986.¹⁷ Prompted by the infamous Love Canal, a housing development located on what had been a dumpsite for 21,000 tons of chemical wastes, including a dozen known carcinogens, CERCLA covered the release of hazardous substances that could endanger human health and/or the environment. It gave specific authorisation for the federal government and state governments to intervene and manage the response to a release of hazardous substances, and it created a specific liability of the potentially responsible parties to pay the costs of clean-up and restoration, relaxing certain liability limitations, standards for establishing causation and common law evidentiary barriers. An additional provision, little noticed at first, made the responsible parties liable for damages to public natural resources, and it designated the federal government, or state governments as its delegates, to recover those damages as trustees for the affected natural resources. Both concepts – trusteeship and damages for injury to natural resources – were novel legal developments.

The US Department of Interior (DoI), designated by CERCLA to develop regulations for assessing natural resource damages, was less than enthusiastic. The regulations, issued in 1987, restricted damages to market valuation of use values and stipulated that public trustees claim only the *lesser of* the diminution of use value resulting from the release or the cost of restoring the affected resources, thus precluding restoration if it cost more than the lost use value.¹⁸ These regulations were invalidated by the Court of Appeals in July 1989 (the *Ohio* ruling) as inconsistent with what Congress had intended.¹⁹ Trustees should claim for non-use value (which the Court called ‘passive lost use value’) using the suite of non-market valuation methods, and they were allowed to favour restoration unless the cost was ‘grossly disproportionate’ to the benefit.

The *Ohio* ruling came shortly after the *Exxon Valdez* oil spill in Alaska in March 1989, which had momentous consequences. CERCLA actually did not cover the Exxon Valdez spill since oil spills had specifically been excluded from its coverage.

17 The enforcement situation has *not* changed for violations of the Clean Air Act and other environmental laws, or for violations of the Clean Water Act other than releases of hazardous substances.

18 CERCLA called for two types of assessment: ‘Type A’ involving a standardised procedures and minimal field observations for the case of a minor discharge; and ‘Type B’ involving a detailed site-specific, assessment following major events. My focus here is the rules for Type B assessments contained in 52 FR 9042.

19 880 F.2d 432 (D.C. Cir. 1989).

To remedy this, Congress passed the Oil Pollution Act of 1990. In a possible rebuke to DOI, this designated the National Oceanographic and Atmospheric Administration (NOAA) as the primary federal trustee for injuries to marine and coastal resources. It also expanded the range of liable damages, and it mandated that damage assessment be conducted along the lines prescribed in the *Ohio* ruling.

The Exxon Valdez spill triggered what has been called an ‘assessment war’ in which the federal government with the state of Alaska and Exxon each conducted competing damage assessments. For damage valuation, Exxon measured lost recreational use value while launching a full-scale public relations campaign against non-use values as measured by contingent valuation, featuring the inadequacies found in poorly-designed contingent valuation studies which it had sponsored (covering items unrelated to the oil spill). In contrast, Alaska’s team (of which I was part) advanced the state of the art in designing and implementing a contingent valuation study focused on the oil spill. While this was going on, there was heavy industry lobbying of NOAA as it developed the guidelines it would promulgate for damage assessment. To buy time, in April 1992, NOAA convened a Blue-Ribbon Panel of distinguished economists to advise whether, and under what circumstances, contingent valuation could be used to measure non-use value for the purposes of natural resource damage assessment. The Panel’s report, released in January 1993, upheld the application of contingent valuation for non-use value providing the study followed strict guidelines which largely followed the protocols that we had developed in our study for the State of Alaska.²⁰ Under those conditions, the Panel found that estimates of value developed through contingent valuation convey useful information which is reliable by standards used for assessment of other damages normally allowed in court proceedings.

While NOAA was gearing up to formulate its damage assessment rules under OPA, DOI was revising its CERCLA damage assessment rules to comply with the *Ohio* ruling. In April 1991, it had issued a notice of proposed rulemaking describing how it would proceed.²¹ It noted that contingent valuation was expressly upheld in the *Ohio* ruling and, therefore, constraints on using that would be deleted. However, in January 1993, just days after NOAA’s Blue Ribbon Panel’s released its report and days before President Bush left office, DOI sent over to the Federal Register a set of rules for damage assessment that severely limited the use of contingent valuation. The rules were immediately withdrawn by the new Clinton administration. This was raised as an issue when DOI released its final rules in March 1994.²² DOI’s new rules accepted CERCLA’s preference for restoration as the appropriate measure of damage-

20 One of the Panel’s many recommendations was that, to be conservative, the WTP measure of value be used and not the WTA measure.

21 56 FR 19752.

22 59 FR 14262.

es. But, pending completion of the restoration, there will be an interval during which the resources would be partially unrestored. The DOI rules provided for monetary compensation for that interim diminution in resource value, independent of and in addition to the cost of restoration.²³ Monetary compensation for what is called *interim lost value* could include non-use value (measured through contingent valuation) as well as use value. Industry groups challenged these rules on several grounds, one being that they had been harmed by the rule withdrawal in January 1993 since the withdrawn rules would have lowered the compensatory damages to which they might become exposed. In July 1996, the Court of Appeals rejected those claims.²⁴

Meanwhile, NOAA was changing its position rather along the lines proposed by industry (unsuccessfully) to the Court of Appeals. NOAA had released its proposed damage assessment rules in January 1994, which largely resembled the rules released by DOI in March 1994.²⁵ But it then ‘fundamentally restructured’ its approach to damage compensation. Whereas the purpose previously stated was ‘to make the public whole’ through a combination of restoration and monetary compensation, the new version, re-proposed in August 1995,²⁶ focused primarily on making *the environment* whole through restoration, including perhaps some natural recovery. Monetary compensation for interim lost value was largely replaced with some additional quantum of ecological restoration.²⁷ The final OPA rules, issued in January 1996, embodied the changes proposed in 1995.²⁸ In 2008, DOI revised its CERCLA assessment regulations to align them more closely with the OPA regulations, replacing the possibility of monetary damages for interim lost value with some additional quantum of ecological restoration.²⁹ This is where the CERCLA and OPA damage assessment rules remain today.

Most damage assessments conducted under CERCLA and OPA since 1996 have followed the spirit of the OPA regulations, focusing on restoration and eschewing monetary compensation for interim lost value. However, there have been exceptions

23 Restoration would be to conditions as they would be but for the release/incident.

24 88 F.3d 1191, 1220 (D.C. Cir. 1996).

25 59 FR 1061.

26 60 FR 39804.

27 If needed and judged reliable, contingent valuation or conjoint analysis could be used, but only to scale the level of compensatory restoration for interim lost value – not to monetise compensation for damages. With contingent valuation, respondents would be given a tradeoff between expedited restoration at a cost to taxpayers versus slower, natural recovery at no cost. With conjoint analysis, respondents would be making a tradeoff among alternative ecosystem services or attributes; they would not be trading off ecosystem services against money. If compensation for damages were monetised, the funds recovered would still have to be spent on restoration. But, the new version of the rules encouraged direct calculation of the additional restoration needed to cover interim lost value, and the cost thereof, rather than explicitly calculating the value to the public of the interim lost value.

28 61 FR 440.

29 73 FR 57266.

where interim lost value was monetised for use values and/or non-use values, using contingent valuation for the latter, including several in which I have participated for state and federal trustees. By far the largest example is the damage assessment following BP's Deepwater Horizon in the Gulf of Mexico in 2010, in which I participated. There, revealed preference was used to monetise interim lost recreational use value and contingent valuation to monetise interim lost non-use value for ecosystem services. But, this was an exception to the general practice.

In summary, monetising non-use value by stated preference in the US is a standard feature of the landscape in cost-benefit analysis for policymaking and regulatory analysis but not for the assessment of compensation for natural resource damages. The use of contingent valuation was upheld by the Court of appeals in its Ohio ruling in 1989 and in its Kennecott ruling in 1996, and by NOAA's Blue Ribbon Panel in 1993. Yet, its use for damage assessment under OPA and CERCLA is now limited almost as strictly as under the original 1987 CERCLA regulations that prompted the *Ohio* ruling.

Conducting a stated preference survey to the meticulous standards prescribed by the Blue Ribbon Panel is expensive, and this certainly would not be reasonable for smaller incidents. But, the aversion to deploying stated preference goes beyond that. Why?

One factor is the common preference on the part of government attorneys to avoid trial and obtain a settlement of their damage claims. From my own experience, I know that, psychologically, it is easier to persuade a responsible party to make a payment of \$X million because there is this set of restoration actions that need to be undertaken, and their cost amounts to \$X million, rather than because some economist has conducted a measurement exercise which shows that the public values the loss at \$X million.

Another factor is a strong preference for restoration, which is hardly inexplicable or unreasonable. In addition, there is some animus against monetising nature. An example is Seevers (1996), who lauds NOAA's decision to 'sideline' monetary valuation in favour of compensatory restoration which, he asserts, better accounts for 'the diverse ways' in which people value natural resources and promotes a more satisfactory balance 'between protecting the environment and promoting commercial activity.' Damage assessment, he concludes, quoting NOAA, is 'not about collecting money.' To the contrary, in my view, damage assessment *is* about collecting money since restoration costs money, and all the money collected for natural resource damages is required to be used for restoration. The real questions are: (1) How much money should be collected? (2) How does one determine that amount, especially with respect to interim lost value?

Some critics of economic valuation have asserted that compensation for interim lost non-use value should be determined by a judge or jury as the fact finder, which is done in all tort cases that allow plaintiffs to be compensated for noneconomic

injuries.³⁰ This overlooks a fundamental conceptual distinction between the injury suffered by a plaintiff in those cases and the interim lost non-use value of a public natural resource. The non-economic injury suffered by the tort plaintiff, while a non-market good is conceptualised in economics as a *private good*, it is both rival and excludable. The lost non-use value of a public natural resource is a *public good*; it is both non-rival and non-excludable.³¹ The implication is that if harm to a public natural resource reduces the well-being of one member of the public, it can do so also for other members of the public.³² While a tort plaintiff can offer testimony about a non-economic injury and be cross-examined before a judge or jury as fact finder, this is not possible for injury to a public good. In fact, the closest thing to such testimony is the documented responses collected from a survey of the public designed and implemented according to the strict standards set forth by the NOAA Blue Ribbon Panel.

However, because interim lost non-use value is a public good, it is susceptible of large damages. Far more people may be affected by an injury to a public good than the number affected by the same injury to a private good, rendering the potential compensation correspondingly larger. You can say that the need to restore an injury to nature is the same regardless of whether a small or large number of people care for the resource. But, as a public good, the interim lost non-use value – the loss to the public before nature is restored (assuming that it can be restored) – is *not* the same regardless of the size of the public.³³ This accounts for the unrelenting industry pressure on DOI and OPA to limit or exclude monetisation of interim lost non-use value.³⁴

Industry has succeeded in propagating the view that measuring non-use value by contingent valuation is too controversial to be a practical option.³⁵ It has established a

30 Allan Kanner and Tibor Nagy, 'Measuring loss of use damages in natural resource damage actions' (2005) 30 *Columbia Journal of Environmental Law* 417.

31 By contrast, interim lost use value is a private good.

32 This does not imply that all members of the public lose wellbeing when a public good is damaged. Preferences vary, and some people may not care at all for that public good. Generally, the only way to determine what economists call the extent of the market for a public good – the number of people who place a non-zero value on it – is through a survey.

33 Interim lost value is inherently an anthropocentric concept, not an ecocentric one.

34 Richard B Stewart, 'Evaluating the present natural resource damages regime: The lawyer's perspective' in John Daniel Ballbach and Richard B Stewart (eds), *Natural resource damages: A legal, economic and policy analysis* (National Legal Center for the Public Interest 1995) described the use of contingent valuation is the single most controversial issue in natural resource damage assessment, and that accords with my own experience.

35 As an example, having mentioned critics who would forego reliance on contingent valuation evidence because it is controversial and subject to claims it is grossly unreliable; Robert Force, Martin Davies and Joshua S Force, in 'Deepwater horizon: Removal costs, civil damages, crimes, civil penalties, and state remedies in oil spill cases' (2011) 85 *Tul L Rev* 889 add the observation that they are unaware of any reported decision that has based damages on evidence from contingent valuation. While the statement is correct, it overlooks the fact that almost every natural resource damage case ended through settlement rather than through the de-

dogma that monetising non-use value will fail in court.³⁶ The government trustee attorneys are often not experienced as trial lawyers, and this makes them risk-averse. They have largely been intimidated by industry into shying away from monetisation of damages in favour of a tally of restoration costs. That would not matter if the restoration adequately compensated for the damage to the public, but it is unclear that this is the case.

4 Damages from climate change

To an economist, monetising damages from climate change is in principle no different than monetising other outcomes that change people's level of well-being - it is no different with regard to the type of impacts involved, the type of data needed, or the methods of economic measurement deployed. Climate change may affect people in diverse ways, benefiting some people but harming others. In some cases, it is their livelihood that is affected; in others, it is their health, access to food or clean water, the amenity of life, or the natural environment around them. The changes that affect human well-being can be classified as market and non-market. The market effects involve changes in market prices, changes in revenue and net income, changes in the quantity or quality of market commodities, or changes in the availability of commodities. Non-market changes are changes in the quantity, quality or availability of things that matter to people, even though they are not obtained through the market.

A given change in a physical or biological system can generate both market and non-market impacts on human well-being. For example, an episode of extreme heat in a rural area may cause heat stress for exposed farm workers and dry up a wetland that serves as a refuge for migratory birds, while killing some crops and impairing the quality of others that survive. From an economic perspective, the damages would be conceptualised as a loss of income for farmers and farm workers; an increase in prices of crops for consumers and/or a reduction in their quality; and non-market impacts, including the impairment of human health (though some of these effects may be captured in the wage of farm workers) and ecosystem harm.

While valuing these things in the context of climate change impacts is no different than valuing them in other contexts, whether cost benefit analysis, project appraisal, or assessment of natural resource damages, the spatial and temporal scales on which these things are being evaluated can be utterly different, depending on the focus of the analysis. Thus, the valuation of damages from climate change has been conducted

cision of a judge or jury following a trial, Karen Bradshaw, 'Settling for natural resource damages' (2015) 40 *Harvard Environmental Law Review* 211.

36 This is true whether non-use value is monetised by contingent valuation or by conjoint analysis trading off ecosystem services against money.

on two scales: a macro scale purporting to monetise all impacts globally, and a micro (local) scale evaluating particular impacts at particular locations at particular points in time.

The macro scale analysis takes the form of a damage function embedded in an integrated assessment model (IAM), the main versions of which are the DICE model developed by William Nordhaus, and its regionally disaggregated sibling, RICE; PAGE, developed by Chris Hope; and FUND, developed by Richard Tol. These models were developed in the 1990s³⁷ and, while they have undergone various refinements and updates, their general structure has remained the same. They combine three main components: (1) a model of economic activity in a region at a point in time, which culminates in the generation of greenhouse gas emissions; (2) a model of the global carbon cycle which tracks how those emissions accumulate in the atmosphere, leading to a change in radiative forcing and from that to a change in the global climate, typically summarised through the global average annual temperature in a given period; and (3) a damage function, or set of damage functions, which translates the change in global average annual temperature to an overall economic impact or sectoral economic impacts, represented as percentage reductions in annual GDP. The IAMs march through time, typically on a multi-annual time step, from, say, 2000 through 2300. The spatial unit of analysis in DICE and PAGE is the entire world; in RICE and FUND the world is divided into broad regions (12 regions for RICE, 16 for FUND).

In DICE, there is a single damage function for the reduction in overall global GDP. In PAGE, there are four separate global damage functions for different categories of global damage. In FUND, there are eight sectoral damage functions for each world region. These IAMs have been deployed to calculate what is known as the social cost of carbon (SCC). The SCC measures the economic value of the marginal global damage associated with an increment in CO₂ emissions in a specific time period (regardless of the location of the emissions). Specifically, the SCC is the discounted present value of the stream of annual economic values measuring (via the damage function) the increment in annual damages due to the change in global annual average temperature resulting from the initial one-time increment in emissions. An estimate of the SCC based on averaging DICE, PAGE and FUND has been used in the US since 2010 for regulatory review of proposed major regulations. Since it monetises impacts occurring over a long span of time (through 2300, say), the numerical value of the SCC depends crucially on the discount rate used to calculate present value. The Obama Administration used discount rates of 2.5%, 3% and 5%, with 3% as the central value; the Trump Administration used discount rates of 3% and 7%, with 7% as the central value; the Biden Administration restored the Obama

37 DICE was first published in 1993, PAGE in 1993, FUND in 1995 and RICE in 1996.

discount rates.³⁸ In addition, the Trump Administration allowed only climate damages in the US to be counted, which lowered the SCC value by about 85%.

However, the IAM damage functions are problematic. They are a postulated relationship connecting changes in regional or global average annual temperature with changes in regional or global GDP. This is a long-run relationship, and a global one. There is no historical data from which it could meaningfully be estimated. Instead, the existing damage functions are speculation on the part of the individual IAM model developers. When the IAMs were first developed in the 1990s, the developers drew on the extant literature, which then contained about thirty economic micro scale studies monetising particular types of climate impacts at particular locations, from which they then extrapolated to a global damage function. Since then, the economic literature on climate change impacts has mushroomed. In 2013, almost 400 studies monetising climate change impacts were listed in the Web of Science under the search terms ‘climate change’, ‘economic’ and ‘damage’. Today, over 2,000 such studies are listed. However, the IAM developers have not kept abreast of this literature, and the IAM damage functions no longer reflect what is found in micro-scale case studies of damages.³⁹ Over time, the IAM developers have idiosyncratically adjusted their IAM damage functions by themselves. They have done so, in my opinion, in a manner that seems, at best, ill-informed and, at worst, highly erratic. Consequently, it is not clear to me that the IAM estimates of the SCC would stand up well in litigation.⁴⁰

Another problematical factor is the uncertainty pervading IAM projections – not the uncertainty about climate change per se but rather the myriad uncertainties in projecting the future trajectory of global emissions over three centuries, future technology, future adaptations, future physical and biological impacts, and future anthropocentric valuations of those impacts. Moreover, because discounting is involved, the specific timing and pace of future impacts greatly affect the calculation of SCC.

Thus, plaintiffs in litigation for damages for climate change are better served by focusing on specific impacts at specific locations in a near-term time frame that are well documented in – or amenable to reasonable extrapolation from – micro-scale studies monetising local impacts. In fact, these studies are highly similar – in methodology if not in their topical focus – to the studies conducted for the cost-benefit analysis of government regulations and investment, and to monetise natural resource damages from oil spills or releases of hazardous substances.

38 The discounted present value today of \$100 in 2100 is \$13.87 using a 2.5% discount rate, \$9.40 using 3%, \$2.02 using 5%, and \$0.45 using 7%.

39 In my view, the damage functions are likely to understate the overall impact of global warming.

40 I had some experience of this in 2015 when I testified in defence of the Obama SCC estimate before the Minnesota Public Utility Commission.

5 Conclusion

To summarise: monetising damages from climate change draws on concepts and methodologies that have now been used and accepted in economics for more than fifty years. In the US and the EU, these are commonly used for policy assessment and investment appraisal. Their use in litigation for natural resource damages resulting from oil spills or the release of hazardous substances is more constrained. Instead, the main thrust of damage assessment in that context has been to focus on restoration of the injured natural resources. In the context of climate change, however, focusing on compensatory restoration would quite often be a lost cause. A different strategy will generally be needed to value the damages from climate change that entails squarely facing up to the challenge of deploying stated preference to monetise losses to public goods. I believe that, when needed, this can be done successfully to the high standards laid down almost thirty years ago by NOAA's Blue Ribbon Panel.

Bibliography

- Bradshaw K, 'Settling for natural resource damages' (2015) 40 *Harvard Environmental Law Review* 211.
- Champ PA, Boyle KJ and Brown TC (eds), *A primer on nonmarket valuation* (2nd edn, Springer 2017).
- Force R, Davies M and Force JS, 'Deepwater horizon: Removal costs, civil damages, crimes, civil penalties, and state remedies in oil spill cases' (2011) 85 *Tul L Rev* 889.
- Hanemann WM, 'Willingness to pay and willingness to accept: How much can they differ?' (1991) 81 *American Economic Review* 635.
- , 'The economic theory of WTP and WTA' in Bateman I and Willis K (eds), *Valuing the environment preferences: Theory and practice of the contingent valuation method in the US, EC and developing countries* (Oxford University Press 1999).
- Kanner A and Nagy T, 'Measuring loss of use damages in natural resource damage actions' (2005) 30 *Columbia Journal of Environmental Law* 417.
- Krutilla JV, 'Conservation reconsidered' (1967) 57 *American Economic Review* 777.
- Maler KG, *Environmental economics: A theoretical enquiry* (Johns Hopkins Press 1974).
- National Research Council, *Valuing ecosystem services: Toward better environmental decision-making* (The National Academies Press 2005).
- Odum HT, *Environmental accounting: Energy and environmental decision-making* (John Wiley 1996).
- Rechtschaffen C, 'Enforcing the Clean Water Act in the twenty-first century: Harnessing the power of the public spotlight' (2004) 55 *Alabama Law Review* 775.
- Seevers JS, 'NOAA's new natural resource damage assessment scheme: It's not about collecting money' (1996) 53 *Washington and Lee Law Review* 1513.
- Stewart RB, 'Evaluating the present natural resource damages regime: The lawyer's perspective' in Ballbach JD and Stewart RB (eds), *Natural resource damages: A legal, economic and policy analysis* (National Legal Center for the Public Interest 1995).

Michael Hanemann

Stone C, *Should trees have standing? Towards a theory of legal rights for natural objects* (William Kaufmann 1974).

Cases

United States

State of Ohio v U.S. Dept. of the Interior, 880 F.2d 432 (D.C. Cir. 1989).

Kennecott Utah Copper v U.S. Dept. of Interior, 88 F.3d 1191, 1220 (D.C. Cir. 1996).

Foreseeability of economic damages related to inadequate climate mitigation and adaptation

Karl W Steininger

Abstract

This article examines the economic relevance of insufficient climate change mitigation and adaptation and emphasises the contribution of economics in quantity estimates when attributing responsibility and liability: Based on attribution sciences, economics uses models to quantify gross climate damages (with or without effective mitigation and adaptation measures). The calculation of social benefits of effective mitigation and adaptation allows to weigh them against the costs of mitigation and adaptation, so that economically sound policies can be adopted in terms of climate protection. Thereby, the Paris Agreement, according to which the international community committed itself to limit the global temperature increase to well below 2 degrees, with efforts to limit it to below 1.5 degrees, constitutes an essential point of reference. The remaining global carbon budget derived from the temperature target allows for the calculation of national, regional and sectoral carbon budgets, which in turn determine whether mitigation measures are perceived as ‘sufficient’. It becomes clear that the economic damage of unmitigated climate change exceeds the costs of adaptation and mitigation, inaction is thus economically unjustifiable.

1 Introduction

Climate change is real, both observed as materialising and known to be growing in its implications. This is not only clearly visible in scientific results, such as condensed in the IPCC Assessment Reports,¹ but also in the enhanced awareness of the public in societies worldwide. While climate change damages had earlier mainly hit the global South at significant scales, the industrialised world is increasingly affected, raising popular awareness even further in these countries. For example, in the summer of 2021, floods hit many European countries, most severely in eastern Belgium and in Germany (North Rhine-Westphalia and Rhineland-Palatinate); in Germany, this was the deadliest flood since the North Sea Flood of 1962, and months

1 IPCC, *Climate change 2021: The physical science basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press 2021); available at <<https://www.ipcc.ch/report/ar6/wg1/#FullReport>> accessed 13 October 2021.

later, the affected cities are still without any local shop infrastructure, have housing stock with wet walls and in some cases lack a supply of fresh water.

How should climate-change-related responsibility and liability be addressed? Complementing the natural science attribution (addressed in the first chapter of this publication), we here focus on the state-of-art in determining the economic relevance, both current and foreseen. Two dimensions can be distinguished. First, economic evaluation of (future) climate damages (i.e., increasing weather- and climate-related impacts due to climate change) can serve as a basis to identify which of these can be reduced and mitigated by adaptation and the net benefits materialising as a consequence. The second dimension concerns greenhouse gas emission mitigation. Aware of the fundamental impacts that unrestrained climate change would imply, the global community in the Paris Agreement,² bound itself to limit global warming to well below 2 degrees (above pre-industrial), with efforts to limit it to below 1.5 degrees. This target can be translated to a global carbon budget,³ and in turn, broken down to countries, regions, or sectors.⁴ If legislators do not ensure sufficient action to reduce greenhouse gas mitigation immediately, future generations will be hit harder by stronger emission reduction requirements, more significant climate damages, or both. In April 2021, the German constitutional court ruled that parts of the 2019 German climate law are unconstitutional, as the law was not stringent enough on greenhouse gas mitigation, thus burdening future generations over-proportionally. In this respect, economics can inform about the availability of instruments to ensure compliance with the remaining carbon budget and the order of magnitude of economic impacts shifted across generations connected with non-compliance with such a budget.

This contribution addresses the economic evaluation of climate impacts and their possible mitigation (and adequacy thereof) in section 2 and of greenhouse gas emission mitigation (again including adequacy) in section 3, concluding with remarks on the economics of climate change responsibility and liability with respect to both lines of analysis.

-
- 2 Paris Agreement (adopted 12 December 2015, entered into force 4 November 2016) UNTC No 54113; the full text is available at <<https://bit.ly/3IJkyGw>> accessed 28 March 2022.
 - 3 IPCC, *Global warming of 1.5°C. An IPCC special report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty* (2018); available at <<https://bit.ly/3qGE111>> accessed 28 March 2021.
 - 4 Karl W Steininger et al., 'Sectoral carbon budgets as an evaluation framework for the built environment' (2020) 1 (1) *Buildings and Cities* <<https://doi.org/10.5334/bc.32>> accessed 13 October 2021; Keith Williges et al., 'Fairness critically conditions the carbon budget allocation across countries' (2022) 74 *Global Environmental Change* 102481 <<https://bit.ly/3lLwibi>> accessed 31 March 2022.

2 The knowns and unknowns in future economic climate impacts

‘Climate change (...) is shifting what is expected in our geological age. This affects the determination of foreseeability of climate-related risks, which may in turn translate into shifting liabilities for professionals and others in a court of law,’⁵ Marjanac and Patton summarise the challenge. This present volume discusses the legal implications of a world where climate change impacts are occurring, and in particular, more frequent and severe extreme weather events are not only preventable, ‘but demonstrably reasonably foreseeable.’ Building upon extreme weather attribution science (see chapter 1 of this volume), economics can support the quantification – in economic terms – of the magnitude of both foreseeable climate damages and those that can be mitigated by adaptation. Given the availability of the former, legal interest could be particularly high in the latter.

Data from international reinsurance companies indicate that weather- and climate-related damage values have been on the rise for the last three decades.⁶ However, the future development of damages – both unmitigated and mitigated – is subject to uncertainty due to climate and socio-economic development. To give an example for the relevance of socio-economic development: regardless of specific climate development, future heatwaves will impact populations harder, the larger the share of the elderly and the poorer they are, as poverty could result in less adaptable environments (due to e.g., less availability of air conditioning).

While more robust estimates for expected damages are available at the aggregate level, especially for multi-year averages, such estimates are much more uncertain when sought for specific, smaller regions or locations. However, physical, or hard, climate change adaptation can only take place at specific locations (e.g., the building of a dam as flood protection or growing an alpine protective forest as avalanche protection). This implies that economic instruments, such as fostering insurance protection and soft adaptation, like disaster emergency planning and organisational structures, also have significant relevance due to being effective across much greater spatial scales.

To capture the uncertainties due to socio-economic development, the IPCC Assessment framework uses scenarios of so-called Socio-economic Pathways (‘SSPs’) spanning a broad range from ‘green and sustainable growth’, over ‘regional rivalry’ to ‘fossil-led growth’. This approach can be used in spirit to develop uncertainty

5 Sophie Marjanac and Lindene Patton, ‘Extreme weather event attribution science and climate change litigation: An essential step in the causal chain?’ (2018) *Journal of Energy & Natural Resources Law* <<https://doi.org/10.1080/02646811.2018.1451020>> accessed 2 November 2021.

6 Munich Re, ‘NatCatSERVICE: Natural catastrophes in 2020’ (2021) <<https://bit.ly/3r48TMz>> accessed 28 March 2022; Munich Re, ‘TOPICS Geo Natural Catastrophes 2017’ (2018) <<https://bit.ly/3iIcT0p>> accessed 28 March 2022.

scenarios at the local and regional level, where damage values prove to be subject to stronger variability (and uncertainty).

One of the most comprehensive (for its time) examples of an economic evaluation of future climate change damage at the national level was triggered by the demand of a finance ministry to cover future climate change-related expenses in its long-term public budget planning. A cross-sectoral climate impact quantification for Austria up to mid-century employing IPCC uncertainty scenarios at the national and subnational level has been made available to address this demand.⁷ The method can serve as an example for other countries. For Austria, weather- and climate-related damages have been projected to rise six-fold (from an average annual level of € 1 bn. in the 2000s) by mid-century, with a potential for a twelve-fold increase. This covers just those impact chains for which robust quantification methods were available at the time (37 out of the more than 80 domestic impact chains that were identified, and including just three international ones).

This result demonstrates the foreseeability of climate change impacts, both in aggregate and split up by impact fields. But economics can be employed to further analyse and identify how adaptation can reduce or limit those damages.

Even if the globe succeeds in achieving climate neutrality, and even if already in the not-too-distant future, without adaptation, most of these impacts will be unavoidable, with many expected to further intensify. As strategies to adapt to and deal with observed and anticipated impacts are available, they can be analysed in simulations that indicate their future effectiveness. Building upon the above cross-sectoral impact assessment for Austria, Steininger et al.⁸ and Bachner et al.⁹ assessed the economy-wide effects of public adaptation. In three relevant adaptation fields (agriculture, forestry and catastrophe management) sufficient data was available. While bearing additional costs for implementing adaptation actions in these three fields, the welfare loss due to climate change damages was found to be cut by more than half (net impact, net welfare loss reduction by 56%, measured in terms of Hicksian equivalent variation). Beyond the main implication of lower economic damages, co-benefits of adaptation also occur, e.g., from additional employment.

7 Karl Steininger et al., 'Consistent economic cross-sectoral climate change impact scenario analysis: Method and application to Austria' (2016) 1 Climate Services <<https://doi.org/10.1016/j.cliser.2016.02.003>> accessed 13 October 2021; Karl Steininger et al., *Klimapolitik in Österreich: Innovationschance Coronakrise und die Kosten des Nicht-Handelns* (Wegener Center Research Briefs 1-2020) <<https://doi.org/10.25364/23.2020.1>> accessed 13 October 2021.

8 Steininger et al., Consistent economic cross-sectoral climate change impact scenario analysis (n 7).

9 Gabriel Bachner et al., 'How does climate change adaptation affect public budgets? Development of an assessment framework and a demonstration for Austria' (2019) 24 Mitigation and Adaptation Strategies for Global Change <<https://doi.org/10.1007/s11027-019-9842-3>> accessed 13 October 2021.

Public adaptation strategies differ strongly across countries. In a comparative analysis across Spain, the Netherlands and Austria, Van der Wijst et al.¹⁰ provide evidence that the economy-wide net benefits of adaptation also prevail in other EU member states. They find that national adaptation in Spain and the Netherlands is effective in reducing the negative sectoral and economy-wide effects of a range of climate impacts at a scale of 30% to 96% (net impact, change in loss of Hicksian equivalent variation, comparing climate impacts with and without adaptation). The high end of this range occurs for scenarios where climate impacts that would otherwise occur are counteracted by adaptation measures (such as the Delta flood protection program in the Netherlands) which are designed to prevent damages due to events up to precisely the scale simulated (e.g., the very rise in water level). Despite increased spending, this also leads to net improvements in public budgets.

For a detailed analysis of quantitative climate impacts across Europe, the Horizon2020 research project COACCH (CO-designing the Assessment of Climate Change costs) has supplied a tool to depict climate impacts across different time horizons and socioeconomic scenarios (SSPs), disaggregated at the NUTS2 regional level for all European countries.¹¹ Results on climate impacts are available for a variety of sectors, scenarios (combinations of one of the SSPs and one of the greenhouse gas concentration pathways (representative concentration pathways, RCPs)), impact variables (e.g., GDP) and time horizons (up to 2070). Maps and data tables are available. With such transparency and public availability at this level of detail, it is difficult to argue that climate change impacts would be too uncertain to be of any foreseeability.

3 Economic damages of inadequate greenhouse gas emission mitigation policy

Given that the absorption capacity for greenhouse gases of the atmosphere is a global common, and the effectiveness of emission mitigation depends only on aggregate emission reduction, the determination of a specific level of emission reduction considered to be the responsibility of any particular actor (nation state, region, business) – which then could serve as a reference for liability claims – at the outset appears quite complex. However, as there is a clear overall mitigation target agreed upon by the global community and settled in the Paris Agreement, this target can serve as an anchor point. Limiting global warming to well below 2 degrees, with efforts to limit it below 1.5 degrees, can be translated into a well-defined carbon budget, i.e., an

10 Kaj-Ivar van der Wist et al., *D4.3 macroeconomic assessment of policy effectiveness. Deliverable of the H2020 COACCH Project* (2021) <<https://bit.ly/3wFnZeZ>> accessed 28 March 2021.

11 The tool can be accessed at <www.coacch.eu/interactive-tool/> accessed 2 November 2021.

amount of CO₂ (and considering all greenhouse gases in this specification) that is still available to be emitted at the global level, but not to be exceeded. Depending on the respective actual temperature limit (2 degrees or 1.5 degrees) and the likelihood sought to remain below this temperature, a specific global carbon budget can be derived. The IPCC quantifies the remaining carbon budget from 2018 onwards for not exceeding 1.5 degrees of warming by the end of the century at 420 Gt CO₂ (if a likelihood of 66% is sought), or at 580 Gt CO₂ (for one of 50% only).¹²

These global carbon budgets can be broken down into nation-states or other geographically defined entities (municipalities, cities), economic sectors, or even firms. For geographical disaggregation, a mechanism based on equal per capita shares in the global budget is the most applied method. Enhancing justice requires introducing adjustments to account for differential capability, differential benefits still received from past emissions, and unequal historical emissions.¹³ In any case, and regardless of such adjustments, a well-specified carbon budget again emerges for geographic entities, e.g., nation-states or regions within. In this way, a global responsibility can be attributed to legal entities subject to potential liability.

How large is the economic damage if these legal entities (e.g., national governments) do not act to safeguard remaining within the carbon budgets they are 'entitled' to? Or, broken down to shorter time periods, if emissions from within their territories (or agents covered) for specific time periods exceed the respective allocated share of their budget? There are at least two answers to this type of question.

The first answer, of relevance if the global community as a whole exceeds the global carbon budget, is that such insufficient policy implies enhanced climate change and thus rising climate change damages. Their economic quantification has been covered in the previous section 2 of this chapter; here, it is the implied increase in damages at the global level that is the relevant number. Note, that the case of the Peruvian farmer Saúl Luciano Lliuya against the German company RWE brought forward at the Upper State Court in Hamm (Germany) addresses a respective share of these damages. The subject matter of the claim was the enhanced risk of glacial lake flooding affecting the farmer's city of Huaraz, which has been shown by Stuart-Smith et al.¹⁴ to be almost entirely attributable to anthropogenic climate change, i.e., the share on the impact side relevant for the plaintiff and on the source/causation side of the defendant.

12 IPCC, Global warming of 1.5°C (n 3).

13 Keith Williges et al., 'Fairness critically conditions the carbon budget allocation across countries' (2022) 74 *Global Environmental Change* 102481 <<https://bit.ly/3ILwibi>> accessed 28 March 2022.

14 Rupert Stuart-Smith et al., 'Increased outburst flood hazard from Lake Palcacocha due to human-induced glacier retreat' (2021) 14 *Nature Geoscience* <<https://doi.org/10.1038/s41561-021-00686-4>> accessed 13 October 2021.

The second answer is relevant if the global community, in practical terms, enforces global compliance with the global carbon budget requiring future governments to compensate earlier inaction with additional and stricter climate mitigation policy. A stronger fossil lock-in (again due to inaction) and the resulting later (and even steeper) emission reduction needed both increase societal costs of the transition. To quantify the economic damages of a delayed and increasingly steep reduction in emissions is difficult, as climate-neutral social and technological innovation are inherently dynamic processes, where laggards are punished on multiple levels (missing out on cost advantages, losing markets, lacking relevant learning by doing, etc.). As an optimistic lower bound of damages, one might consider a compensating acquisition of emission permits at a scale to close the emission reduction gap – if the world is in a scenario in which it enforces compliance with the carbon budget at the global level and permits are thus accordingly priced.

Assuming very cautious innovation dynamics, Steininger et al.¹⁵ quantify the advantage of an earlier greenhouse gas emission reduction for Austria, in line with the increased EU ambition of at least 55% emission reduction by 2030, relative to 1990, moving beyond the earlier effort sharing decision based on the EU 40% emission reduction by 2030. Such an advantage could amount to an average 0.2% (for the 55% ambition) to 0.5% (for the 60% ambition) of GDP per anno, when aggregated over 2020-2050. The analysis thereby also supplies a full set of instruments and respective stringency levels for all sectors. In all scenarios, climate neutrality is achieved by 2050 at the EU level and by 2040 at the Austrian level for sectors not covered by the European Emission Trading System (ETS), as introduced in 2005 and integrating air transport in 2012.

4 Concluding remarks on the economics of climate responsibility and liability

While the challenges and opportunities of attributing responsibility and liability for climate change are manifold, the concepts and methods of economics can be one cornerstone in addressing them. More specifically, building on attribution science, economics can be employed to quantify the societal relevance of inaction in adaptation to a changing climate as well as in mitigation of greenhouse gas emissions.

For insufficient adaptation, both the foreseeability of climate impacts can be demonstrated in versions of integrated assessment models (IAMs), and the quantification of the ability of adaptation to reduce impacts can be achieved by implement-

15 Karl Steininger et al., *The economic effects of achieving the 2030 EU climate targets in the context of the corona crisis – an Austrian perspective* (Wegener Center Scientific Report 91/2021, Wegener Center Verlag, University of Graz 2021); available at <<https://wegcloud.uni-graz.at/s/yLBxEP9KgFe3ZwX>> accessed 13 October 2021.

ing adequate measures in economic models. The former (quantification of gross climate damages) settles that agents cannot back out of responsibility via blaming general ignorance or brute uncertainty of climate change. The latter even identifies the dimension of the social benefit of adaptation (or the cost of the lack of it) to be weighed against the cost of adaptation policy to determine an adequate scale of the latter.

Economic valuation methods have repeatedly been found adequate and highly relevant in the juridical context in the past. A salient example is the use of contingent valuation – a monetary evaluation of use and non-use values by means of creating a hypothetical market – in damage evaluation after oil spills or other environmental damages. A panel established by the US National Oceanic and Atmospheric Administration concluded in 1993, that this method

can produce estimates reliable enough to be the starting point of a judicial process of damage assessment, including lost passive-use values... [A well-constructed study] contains information that judges and juries will wish to use, in combination with other estimates, including the testimony of expert witnesses.¹⁶

We can expect state-of-the-art economics to serve at similar relevance and reliability in judicial processes on climate responsibility and liability.

Bibliography

- Arrow K et al., *Report of the NOAA Panel on contingent valuation* (National Oceanic and Atmospheric Administration 1993).
- Bachner G et al., ‘How does climate change adaptation affect public budgets? Development of an assessment framework and a demonstration for Austria’ (2019) 24 *Mitigation and Adaptation Strategies for Global Change*, 1325-1341 <<https://doi.org/10.1007/s11027-019-9842-3>> accessed 13 October 2021.
- IPCC, *Global warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty* (2018) <<https://www.ipcc.ch/sr15/download/#full>> accessed 13 October 2021.
- , *Climate change 2021: The physical science basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press 2021) <<https://www.ipcc.ch/report/ar6/wg1/#FullReport>> accessed 13 October 2021.
- Marjanac S and Patton L, ‘Extreme weather event attribution science and climate change litigation: An essential step in the causal chain?’ (2018) 36 (3) *Journal of Energy & Natural Resources Law*, 265-298 <<https://doi.org/10.1080/02646811.2018.1451020>> accessed 13 October 2021.

16 Kenneth Arrow et al., *Report of the NOAA Panel on Contingent Valuation* (National Oceanic and Atmospheric Administration 1993).

Foreseeability of economic damages related to inadequate climate mitigation and adaptation

- Munich Re, 'TOPICS geo natural catastrophes 2017' (2018) <<https://bit.ly/3iIcT0p>> accessed 28 March 2022.
- , 'NatCatSERVICE: Natural catastrophes in 2020' (2021) <<https://bit.ly/3r48TMz>> accessed 28 March 2022.
- Steininger KW et al., 'Consistent economic cross-sectoral climate change impact scenario analysis: Method and application to Austria' (2016) 1 *Climate Services*, 39-52 <<https://doi.org/10.1016/j.cliser.2016.02.003>> accessed 13 October 2021.
- , *Klimapolitik in Österreich: Innovationschance Coronakrise und die Kosten des Nicht-Handelns* (Wegener Center Research Briefs 1-2020) <<https://doi.org/10.25364/23.2020.1>> accessed 13 October 2021.
- , 'Sectoral carbon budgets as an evaluation framework for the built environment' (2020) 1(1) *Buildings and Cities*, 337-360 <<https://doi.org/10.5334/bc.32>> accessed 13 October 2021.
- , *The economic effects of achieving the 2030 EU Climate Targets in the context of the corona crisis – an Austrian perspective* (Wegener Center Scientific Report 91/2021, Wegener Center Verlag, University of Graz 2021) <<https://wegcloud.uni-graz.at/s/yLBxEP9KgFe3ZwX>> accessed 13 October 2021.
- Stuart-Smith R et al., 'Increased outburst flood hazard from Lake Palcacocha due to human-induced glacier retreat' (2021) 14 *Nature Geoscience*, 85-90 <<https://doi.org/10.1038/s41561-021-00686-4>> accessed 13 October 2021.
- van der Wijst KI et al., *D4.3 macroeconomic assessment of policy effectiveness. Deliverable of the H2020 COACCH project* (2021) <<https://bit.ly/3wFnZeZ>> accessed 28 March 2022.
- Williges K et al., 'Fairness critically conditions the carbon budget allocation across countries' (2022) 74 *Global Environmental Change* 102481 <<https://bit.ly/3ILwibi>> accessed 28 March 2022.

Part II:

Legal basis for climate change responsibility and liability

A. International aspects

Climate change responsibility and liability in international law

Julia Pleiel and Kirsten Schmalenbach

Abstract

With its widespread and varied impacts, climate change is one of the most significant and increasingly pressing concerns of the international community in the 21st century. Despite being an acute global issue, the inherent political and economic implications mean there has been little progress towards effectively addressing it at the international level. The reluctance of many source states to meaningfully cut their greenhouse gas emissions is out of step with the dire reality of climate change-induced extreme weather events and slow onset events. This global failure raises questions regarding the international responsibility and liability of source states, with the answers, unfortunately, being complex and riddled by legal uncertainty. With its transnational, intergenerational and cumulative dimensions, climate change poses unique challenges when being addressed using the traditional rules associated with international responsibility and liability.

1 Introduction

An innumerable number of biogenic organisms produce greenhouse gas emissions and thereby contribute to climate change.¹ However, human beings have become particularly problematic in this regard as our growing population coupled with activities such as burning fossil fuels, increased meat consumption and changing natural landscapes into human landscapes, has greatly accelerated climate change. The advent of the Industrial Revolution opened the door for certain legal persons to make the emission of greenhouse gases a source of profit. These ‘Carbon Majors’, the most prominent of which are fossil fuel corporations such as Chevron, ExxonMobil, Saudi Aramco, British Petroleum, Gazprom, Royal Dutch Shell and the National Iranian Oil Company, have together produced almost one-fifth (18.7%) of all carbon dioxide with an industrial origin that has been released into the atmosphere since the dawn of the Industrial Revolution in the 18th century.² Regarding the historical contribution

1 Natural systems such as forest fires, oceans, wetlands, permafrost, volcanoes, mud volcanoes and earthquakes generate greenhouse gas emissions, see Xi-Liu Yue and Qing-Xian Gao, ‘Contributions of natural systems and human activity to greenhouse gas emissions’ (2018) 9 *Advances in Climate Change Research* 243.

2 Richard Heede, ‘Tracing anthropogenic carbon dioxide and methane emissions to fossil fuel and cement producers, 1854-2010’ (2014) 122 *Climatic Change* 229, 237.

to the current climate crisis, the largest national contributors are the United States of America (25%), the member states of the European Union taken together (22%), China (12.7%), Russia (6%) and Japan (4%).³ However, none of these leading emitters is solely responsible for climate change. Rather, the cumulative emission of man-made greenhouse gases from every country around the globe over the last 270 years has inexorably led to the warming of the planet's climate, which is resulting in increasingly severe extreme weather events ranging from heatwaves, droughts and wildfires through to heavy rain with its associated flooding and erosion as well as slow onset events such as rising sea levels and desertification.⁴ Many of the countries and populations that are most vulnerable to climate change are also the ones who have historically contributed very little to the increased concentration of greenhouse gases in the earth's atmosphere. Clearly, the multitude of actors, the diversity in the scope and type of emissions that have little regard for national borders and the multi-generational period involved all pose exceptional challenges for traditional international law to effectively address and combat the highly complex climate change issue.

The legal status of the atmosphere is that of an international resource that all states can legitimately use, but that cannot be appropriated by any individual state.⁵ The fact that the atmosphere is open for legitimate use by all states is what has led to its gradual pollution and degradation. For almost 270 years, states have been able and allowed to introduce substances into the atmosphere that alter its composition, especially by actively promoting, or even subsidising, the unrestrained production and consumption of fossil fuels. Given the far-reaching political and economic interests attached to the emission of greenhouse gases, it has proven difficult to impose binding legal obligations on states to reduce anthropogenic emissions from their territories in order to avert the looming climate change catastrophe. However, states can no longer claim that greenhouse gas emissions are a purely domestic concern since climate change and its adverse effects have been recognised as 'a common concern

3 Our World in Data, 'Who has contributed most to global CO₂ emissions? Cumulative carbon dioxide emissions over the period from 1751 to 2017' <<https://ourworldindata.org/uploads/2019/10/Cumulative-CO2-treemap.png>> accessed 7 January 2022.

4 Ove Hoegh-Guldberg et al., 'Impacts of 1.5°C global warming on natural and human systems' in Valérie Masson-Delmotte et al. (eds), *Global warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty* (IPCC 2019) 175, 254.

5 ILC, 'First report on the protection of the atmosphere' (5 May to 6 June and 7 July to 8 August 2014) UN Doc A/CN.4/667, para 86, 90; the atmosphere as an air mass has to be distinguished from the airspace above a state's territory which falls under the sovereign jurisdiction and control of the given state.

of humankind'⁶. When a state largely disregards this common concern and instead places its national interests above all else, it becomes necessary to assign responsibility and liability for such a state's contribution to climate change. Even though the adverse effects of climate change are already causing significant and irreversible damage, states have proven unwilling to assign responsibility or liability against each other because, as the saying goes, 'birds of a feather stick together'.⁷

2 The relevance of an effective responsibility and liability regime for environmental protection

While responsibility and liability primarily aim at compensating victims for damage that has already occurred, they are also said to have a preventive function by deterring actors from causing environmental degradation in the first place.⁸ This function is based on an economic analysis of law in the sense that when a potential polluter is confronted with the costs of its actions in the form of responsibility or liability claims, it will exercise a certain level of care to reduce or avoid environmental damage.⁹ However, the capacity of liability to incentivise environmentally-sound behaviour is not undisputed, especially for environmental damage to a global commons such as the atmosphere. Some authors contest the meaningful existence of such an incentive since they have found no empirical evidence on the international level to

6 Preamble, first paragraph, of the United Nations Framework Convention on Climate Change (adopted 9 May 1992, entered into force 21 March 1994) 1771 UNTS 107 (UNFCCC); repeated in the preamble, eleventh paragraph, of the Paris Agreement to the UNFCCC (adopted 12 December 2015, entered into force 4 November 2016) TIAS No 16-1104; for the concept of the common concern of humankind see amongst many Frank Biermann, 'Common concern of humankind: The emergence of a new concept of environmental law' (1996) 34 *Archiv des Völkerrechts* 426-481; Dinah Shelton, 'Common concern of humanity' (2009) 1 *Iustum Aequum Salutare* 33-40; Friedrich Soltau, 'Common concern of humankind' in Kevin R. Gray, Richard Tarasofsky and Cinnamon Carlame (eds), *Oxford Handbook of international climate change law* (Oxford University Press 2016) 202-212.

7 One of the few outliers is Tuvalu whose then Prime Minister Koloa Talake threatened to bring a claim for compensation against several industrialised countries, including the United States and Australia, before international courts in 2002. However, such a claim was never brought, see Hannah Stallard, 'Turning up the heat on Tuvalu: An assessment of potential compensation for climate change damage in accordance with states responsibility under international law' (2009) 15 *Canterbury Law Review* 163.

8 For the deterring effect of reparations see Dinah Shelton, 'Righting wrongs: Reparations in the articles on state responsibility' (2002) 96 *American Journal of International Law* 833, 844; on liability see Michael G. Faure and Andre Nollkaemper, 'International liability as an instrument to prevent and compensate for climate change' (2007) 43 *Stanford Journal of International Law* 123, 139-142.

9 The classic work on this subject is by Steven Shavell, *Economic analysis of accident law* (Harvard University Press 1987).

substantiate the claim that liability regimes have a deterring or preventive function.¹⁰ Settling the above issue may come down to one key factor, namely, that for responsibility and liability to have an effective deterrent effect requires them to be underpinned by supportive judgments. The International Court of Justice (ICJ) took a step in that direction in the *Certain Activities* case by recognising for the first time that compensation is due for damage caused to the environment. The ICJ ruled that the impairment or loss of the ability of the environment to provide goods and services is compensable under international law¹¹ and, therefore, the ICJ awarded Costa Rica US\$120,000 for damage caused by Nicaragua's wrongful activities.¹² However, while international law recognising that compensation is due for ecological damage is welcome, the value of the environment in the *Certain Activities* case seems to have been significantly underestimated. Thus, the deterrent effect of the judgment can be called into question.

3 Some remarks on terminology: responsibility and liability

Considerable ambiguity exists in connection with the two legal terms 'responsibility' and 'liability' with the topic occupying scholars for many years and resulting in a considerable body of literature.¹³ The distinction between responsibility and liability in international law commonly used today can be traced back to the International Law Commission (ILC) and its work on the codification of the principles of international law governing state responsibility. This effort culminated in the Articles on the Responsibility of States for Internationally Wrongful Acts (ASR), which represent customary international law in large part. According to this work of the ILC, responsibility traditionally arises for internationally wrongful acts and involves the obligation to make amends for such wrongful acts, for example, in the form of financial

10 Rüdiger Wolfrum, 'Means of ensuring compliance with and enforcement of international and environmental law' (1998) 272 *Recueil des Cours de l'Académie de Droit International* 78; Robin R. Churchill, 'Facilitating (transnational) civil liability litigation for environmental damage by means of treaties: Progress, problems, and prospects' (2001) *Yearbook of International Environmental Law* 3, 39; Jutta Brunnée, 'Of sense and sensibility: Reflections on international liability regimes as tools for environmental protection' (2004) 53 *The International and Comparative Law Quarterly* 351, 366.

11 ICJ, *Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica v Nicaragua)* (Compensation owed by the Republic of Nicaragua to the Republic of Costa Rica) (2018) ICJ Rep 15, paras 41 and 42 (hereinafter *Certain Activities*).

12 ICJ, *Certain Activities*, para 86.

13 The two fundamental works on this topic are by Pierre-Marie Dupuy, *La responsabilité internationale des États pour les dommages d'origine technologique et industrielle* (Editions A. Pedone 1977) and Rene Lefebvre, *Transboundary environmental interference and the origin of state liability* (Kluwer Law International 1997).

reparation.¹⁴ Liability, on the other hand, denotes a duty to pay monetary compensation for damage resulting from activities not necessarily prohibited by international law.¹⁵ This international law understanding should be borne in mind as in domestic law ‘liability’ is often regarded as a synonym for ‘responsibility’.¹⁶ The conceptual distinction between responsibility and liability introduced by the ILC, while still facing some valid criticism in academia¹⁷, has gradually been espoused in the international sphere. The two terms overlap insofar as they both cover an obligation to make financial reparation and monetary compensation respectively, illustrating that a strict conceptual distinction between responsibility and liability is not only open to challenge with respect to the general usage of both terms in domestic law, it also wrongly conveys the impression of a clear boundary between state responsibility and state liability.

In this chapter, and in conformity with international usage, the denomination ‘responsibility’ is used to denote the legal consequences of an internationally wrongful act, which consists, *inter alia*, of the obligation to redress any damage incurred (Article 36 ASR). For all other situations concerning the duty to make a monetary reparation, this contribution uses the term ‘liability’.

4 International responsibility for contributions to climate change

Any consideration on the international responsibility of states for their contribution to climate change necessarily starts with the search for an international obligation not to contribute to climate change. If such an international obligation exists, its breach will trigger – as a rule – the international responsibility of the wrongdoer (Article 1 ASR). The legal consequence of this responsibility is, first and foremost, the duty to cease the internationally wrongful activity (Article 30 ASR),¹⁸ which would be a

14 See Arts 1 and 28ff ASR; ILC, ‘Report of the International Law Commission on the work of its 53rd Session’ (23 April to 1 June and 2 July to 10 August 2001) UN Doc A/56/10, 25.

15 ILC, ‘Report of the International Law Commission on the Work of its 21st session’ (2 June to 8 August 1969) UN Doc A/7610/Rev1, para 83.

16 ILC, ‘Preliminary Report of SR Quentin-Baxter on international liability for injurious consequences arising out of acts not prohibited by international law’ (1990) UN Doc A/CN.334, para 12.

17 Ian Brownlie, *System of the law of nations, state responsibility, Part I* (Clarendon Press 1983) 50; Michael B. Akehurst, ‘International liability for injurious consequences arising out of acts not prohibited by international law’ (1985) 16 *Netherlands Yearbook of International Law* 3, 8; Alan E. Boyle, ‘State responsibility and international liability for injuries consequences of acts not prohibited by international law: A necessary distinction’ (1990) 39 *International and Comparative Law Quarterly* 1; Louise de la Fayette, ‘The ILC and international liability: A commentary’ (1997) 6 *Review of European, Comparative and International Environmental Law* 322, 323.

18 UNGA Res 56/83 (12 December 2001) UN Doc A/RES/56/83, Annex.

major step towards the goal of curbing greenhouse gas emissions. That said, the issue of state responsibility and climate change is a difficult pairing with no straightforward arguments and clear-cut solutions.¹⁹

4.1 State responsibility for the breach of the no-harm rule

One of the few universally accepted environmental obligations under customary international law is the no-harm rule. The origins of this rule can be traced back to the 1941 *Trail Smelter* award²⁰, a landmark decision that highlighted for the first time the limits of a state's sovereign rights to allow any form of environmentally significant activities with cross-border impacts on its territory. It is this one sentence in the 90-page award that fundamentally changed the legal landscape of international environmental law:

(U)nder the principles of international law (...) no State has the right to use or permit the use of its territory in such a manner as to cause injury by fumes in or to the territory of another or the properties or persons therein, when the case is of serious consequence and the injury is established by clear and convincing evidence.²¹

Subsequent to this award, the no-harm rule has been incorporated into various policy documents, the most important of which are Principle 21 of the 1972 Stockholm Declaration²² and Principle 2 of the 1992 Rio Declaration²³, as well as in a number of key multilateral environmental treaties, such as the preamble of the UNFCCC in the 8th recital. Today, it is widely recognised that states are duty-bound to prevent, reduce and control the risk of environmental harm to other states and – according to the ICJ²⁴ – to areas beyond national jurisdiction (i.e., global commons).²⁵ This general rule readily applies to greenhouse gas emissions as they do not deviate much from the traditional concept of transboundary pollution, such as the toxic fumes caused by the Canadian smelter near the border to the United States in the *Trail Smelter* case.

19 Malgosia Fitzmaurice, 'Responsibility and climate change' (2010) 53 German Yearbook of International Law 89.

20 *Trail Smelter Case (US v Canada)* (1938 and 1941) 3 RIAA 1905-1982; amongst the wealth of academic writing see John E. Read, 'The Trail Smelter dispute' (1963) 1 Canadian Yearbook of International Law 213; Karin Mickelson, 'Rereading Trail Smelter' (1993) 31 Canadian Yearbook of International Law 219; Rebecca M. Bratspies and Russell A. Miller (eds), *Transboundary harm in international law: Lessons from the Trail Smelter arbitration* (Cambridge University Press 2006).

21 *Trail Smelter Case*, 1965.

22 'Stockholm Declaration' United Nations Conference on the Human Environment (Stockholm 5-16 June 1972) UN Doc A/CONF.48/14/Rev1.

23 'Rio Declaration' United Nations Conference on Environment and Development (Rio de Janeiro 3-14 June 1992) UN Doc A/CONF.151/26 (Vol.1).

24 ICJ, *Legality of the Use of Nuclear Weapons* (Advisory Opinion) (1996) ICJ Rep 226, para 29.

25 Alan Boyle and Catherine Redgwell, *Birnie, Boyle & Redgwell's International law and the environment* (4th edn, Oxford University Press 2021) 159-170.

Leaving issues such as proportionate causation aside at this point, there is no doubt that the aggregated result of greenhouse gas emissions has, does and will continue to inflict harm on the global commons (e.g., ocean acidification) and all state territories to a greater or lesser extent. Although perhaps not immediately apparent in the *Trail Smelter* case because of its specifics, it is important to note that the geographical distance between the emitting state and the affected territory or common good is of no consequence under the no-harm rule. In the day and age of global spaces, it is well accepted that the concept of ‘transboundary’ harm can encompass any case where environmentally harmful behaviour has effects outside the source state’s jurisdiction, including further afield than geographic neighbours.²⁶

The state’s preventive environmental obligation consists of two subcomponents, i.e., procedural obligations (e.g., notification duties) and substantive obligations (e.g., prohibiting emissions), only the latter will be discussed here.²⁷ The obligations imposed on source states require such states to act with due diligence at all times, which means that its authorities have to exercise the appropriate amount of care to assuage any risks of transboundary harm and take action when necessary. The ICJ does not treat due diligence as a one-size-fits-all standard under international law but applies a primary-rule specific due diligence standard.²⁸ Consequently, the environmentally focused ICJ cases provide unique insights into the understanding of the international standard of care under the environmental preventative duty. In *Pulp Mills*, the ICJ noted that particular care is required when implementing obligations in the field of environmental protection due to the irreversibility of some environmental harm, i.e., the due diligence standard becomes more demanding in relation to the scale and permanence of the expected harm.²⁹ This customised approach is further highlighted by the fact that a source state is required to use ‘all means at its disposal’, which underlines that the standard of care required is context-specific concerning both the transboundary environmental risk and the actual capacities of the state concerned. If a source state acted diligently, it is not responsible for any transboundary environmental harm as its obligation under the prevention principle is based on conduct rather than result. However, a source state can only be deemed to have been negli-

26 ILC, ‘Report of the International Law Commission on the work of its 53rd session (23 April-1 June and 2 July-10 August 2001) UN Doc A/56/10, Article 2 (c).

27 On the content of procedural obligations and the consequences of their breach see Jutta Brunée, ‘International environmental law and community interests, procedural aspects’ in Eyal Benvenisti and Georg Nolte (eds), *Community interest across international law* (Oxford University Press 2018) 151; idem, ‘Harm prevention’ in Lavanya Rajamani and Jacqueline Peel (eds), *The Oxford handbook of international environmental law* (2nd edn, Oxford University Press 2021) 269, 275-276.

28 Neil MacDonald, ‘The role of due diligence in international law’ (2019) 68 *International & Comparative Law Quarterly* 1041, 1045.

29 ICJ, *Pulp Mills on the River Uruguay* (Argentina v Uruguay) (2010) ICJ Rep 14, paras 185-187 (hereinafter *Pulp Mills*).

gent regarding the substantive dimension of the preventive obligation³⁰ if environmental harm outside of its territory has occurred. Consequently, a source state is not internationally responsible for any flagrant lack of environmental action if no environmental harm outside of its territory can be causally connected to this inaction.³¹

There is little doubt that each and every source state has the necessary knowledge base to be aware of the harmful consequences of its greenhouse gas emissions, even though it has no definitive knowledge of its exact contribution to any specific environmental harm linked to its emissions. If one takes the view that such definitive knowledge is both unattainable and not required, which is what the ICJ judgment in *Corfu Channel*³² suggests,³³ the limited capacities of many states remain the key variable in the context of due diligence.³⁴ That said, both industrialised and industrialising source states, patently the largest greenhouse gas emitters, to a greater or lesser extent, have the capacity to replace fossil-fuel-based technologies and force changes upon climate-damaging industries to adopt sustainable alternatives. However, what remains a major obstacle to establishing a breach of the no-harm rule is the causal link between the unfettered emission of greenhouse gases and transboundary environmental harm. In this context, the environmental harm under consideration is not climate change *per se* but rather the environmental damage caused by climate change-related extreme weather or slow onset events. This means that climate change-induced environmental harm is ‘indirect damage’, i.e., it does not result directly and immediately from a specific instance or source of greenhouse gas emissions but rather is the remote consequence of combined emissions. Another issue is that the environmental harm is caused by the (in)activity of multiple source states and the greenhouse gas emissions of each source state individually are not sufficient for the specific environmental harm to occur (*conditio sine qua non*, what is at times referred to as the ‘but-for’ test).³⁵ Assigning responsibility under such circumstances

30 Note that responsibility for the violation of procedural obligations under the no-harm rule does not require the occurrence of environmental harm, see ICJ, *Pulp Mills*, paras 78-79.

31 ICJ, *Pulp Mills*, para 265; *Certain Activities*, para 217; *Application of the Convention on the Prevention and Punishment of the Crime of Genocide* (Bosnia and Herzegovina v Serbia and Montenegro) (2007) ICJ Rep 43, para 431 (hereinafter *Bosnian Genocide*).

32 ICJ, *Corfu Channel Case (UK v Albania)* (Merits) (1949) ICJ Rep 4, at 18.

33 See Christina Voigt, ‘State responsibility for climate change damages’ (2008) 77 *Nordic Journal of International Law* 1, 12.

34 On the differentiation between states based on their capabilities in regard to climate change see Christina Voigt and Felipe Ferreira, ‘“Dynamic differentiation”: The principles of CBDR-RC, progression and highest possible ambition in the Paris Agreement’ (2016) 5 *Transnational Environmental Law* 285-303.

35 The test asks, ‘but for the existence of X, would Y have occurred?’. The issue here is *causation in fact*, because the no-harm rule requires the occurrence of transboundary environmental damage that can be linked to the source state’s failure to diligently act (‘but-for’). A separate issue is the *causation in law*, which links the breach of the no-harm rule to the injury for the purpose of reparation or compensation, see Ilias Plakokefalos, ‘Causation in the law of state

is even further complicated under international law as rules of causation that provide a satisfactory answer to multiple non-linear causes contributing to environmental harm have yet to be developed. Academic writing attempts to fill this void by suggesting, *inter alia*, that causation only requires a *pro rata* contribution by the source states to the environmental harm (a so-called necessary element of a sufficient-set test).³⁶ It is difficult to foresee whether the ICJ will embrace this approach. If one looks beyond the climate change paradigm for a moment, a prediction on the ICJ's future course may be made based on the *Bosnian Genocide* case. In this case, the Court had to decide whether Serbia had breached its duty to prevent the genocide in Srebrenica, which is in at least one aspect comparable to the no-harm rule – it is an obligation of conduct. The Court found that ‘responsibility is however incurred if the State manifestly failed to take all measures to prevent genocide which were within its power, and which might have contributed to preventing the genocide.’³⁷ Translating this stance to climate-induced environmental damage, a source state cannot argue that it does not have to act in light of the assumption that even an immediate halt to its greenhouse gas emissions would in any conceivable way stop or slow down the harmful effects of climate change. If the Court's stance mirrors that taken regarding genocide, then it will likely deem that cutting greenhouse gas emissions contributes to global efforts to prevent climate change and source states are obliged to act. Even if climate change has gone beyond the tipping point for the damage-limitation goals already set irrespective of where global emission levels are, each individual source state's efforts regarding emission reduction will nevertheless contribute to mitigating further harm. Despite this rather optimistic possibility, the fact that no state affected by climate change has currently instituted legal proceedings before the ICJ or any other international tribunal says a lot about the procedural³⁸ and substantive obstacles that stand in the way of the no-harm rule being upheld in an international courtroom.³⁹

responsibility and the problem of overdetermination: In search of clarity’ (2015) 26 *European Journal of International Law* 471, 478.

36 Ilias Plakokefalos, ‘Causation in the law of state responsibility and the problem of overdetermination: In search of clarity’ (2015) 26 *European Journal of International Law* 471, 477.

37 ICJ, *Bosnian Genocide*, para 430 (emphasis here).

38 Under the Monetary Gold principle, the ICJ will deem a case between two disputant states as inadmissible if the legal interests of an absent third state (i.e., all other emitting states) would form ‘the very subject-matter’ of a merits decision, see Jefferi Hamzah Sendut, ‘Inter-state climate change litigation and the monetary gold principle’ (*Opinio Juris*, 5 January 2021) <<https://opiniojuris.org/2021/01/05/inter-state-climate-change-litigation-and-the-monetary-gold-principle/>> accessed 7 January 2022.

39 For an analysis of the possibility of proceedings before the ICJ see Margaretha Wewerinke-Singh, Julian Aguon and Julie Hunter, ‘Bringing climate change before the International Court of Justice: Prospects for contentious cases and advisory opinions’ in Ivano Alogna, Christine Bakker and Jean-Pierre Gauci (eds), *Climate change litigation: Global perspectives* (Brill 2021) 393-414.

4.2 State responsibility for non-compliance with obligations under the Paris Agreement

In view of the legal problems outlined above, it appears more promising to hold source states internationally responsible for their failure to achieve the greenhouse gas targets set in multinational environmental treaties. Naturally, this draws attention to the Paris Agreement to the UNFCCC that entered into force in 2016. Currently, 191 states have ratified the treaty, which makes the Paris Agreement one of the few virtually universal environmental agreements legally binding upon all its state parties. That said, the Paris Agreement is composed of both legally binding obligations and non-binding commitments. Under Article 4.2, the state parties are obligated to prepare, communicate and implement successive plans to achieve their nationally determined contribution to cutting greenhouse gas emissions. Whereas the actual *achievement* by a state party to reach its nationally determined goal is not compulsory, the duty of each state party to pursue domestic mitigation measures with the aim of achieving the promised goal is (second sentence of Article 4.2: 'shall').⁴⁰ Consequently, the failure of a state party to sufficiently cut its greenhouse gas emissions as promised does not trigger its international responsibility *vis-a-vis* the other state parties to the Paris Agreement.⁴¹ If, however, a state party does not adopt any meaningful national mitigation measures or refuses to act, it is (arguably) in breach of the Paris Agreement. The uncertainty here is created by the views of some state parties regarding Article 4.2. However, a growing number of commentators maintain that this article in the Paris Agreement does indeed establish a legally binding obligation of conduct, irrespective of the eventual result.⁴²

The question that needs answering then is whether the Paris Agreement is a so-called self-contained regime⁴³ that categorically precludes the application of the general rules of state responsibility in cases where state parties breach their obligation of conduct under the agreement. The answer to this question lies in the Paris Agreement itself, the interpretation of which must reveal the intention of state parties to not allow recourse to general responsibility rules outside of the agreement. The

40 Daniel Bodansky, 'The legal character of the Paris Agreement' (2016) 25 *Review of European, Comparative and International Environmental Law* 142, 146.

41 Peter Lawrence and Daryl Wong, 'Soft law in the Paris Climate Agreement: Strength or weakness?' (2016) 26 *Review of European, Comparative and International Environmental Law* 276; James Crawford, 'The current political discourse concerning international law' (2018) 81 *Modern Law Review* 1, 21.

42 Christina Voigt, 'The Paris Agreement: What Is the standard of conduct for parties?' (2016) 26 *Questions of International Law* 17; Benoit Mayer, 'Obligations of conduct in the international law on climate change: A defence' (2018) 27 *Review of European, Comparative and International Environmental Law* 130, 135.

43 Bruno Simma, 'Self-contained regimes' (1985) 16 *Netherlands Yearbook of International Law* 111, 117.

conclusion reached here is that this intent cannot be established: The mere fact that the Paris Agreement sets up an Implementation and Compliance Committee, which has been operative since June 2020, says nothing about the state parties' attitude towards general rules of responsibility. Even though the Committee was formed to enhance the effectiveness of the treaty, it is neither a dispute settlement mechanism nor tasked with enforcing the legally binding provisions of the Paris Agreement (Article 15.2: facilitative, transparent, non-adversarial, non-punitive). Central to the debate on the Paris Agreement's self-containment is Article 8, in which the parties recognise the importance of addressing loss and damage from the effects of climate change. This provision is qualified by paragraph 51 of the UNFCCC Conference of the Parties' Decision 1/CP.21 on the adoption of the Paris Agreement. According to paragraph 51, state parties have agreed that Article 8 of the Paris Agreement 'does not involve or provide any basis for any liability or compensation.'⁴⁴ There is no denying that the definitive language of paragraph 51 of Decision 1/CP.21 impacts the interpretation of Article 8 Paris Agreement because it is a relevant context within the meaning of Article 31 para 2 lit a Vienna Convention on the Law of Treaties⁴⁵ (VCLT). However, if one accepts that Article 8 of the Paris Agreement does not provide a proper legal basis for compensation claims, then one has to accept that neither paragraph 51 nor Article 8 say anything about claims based on a separate legal basis, i.e., general rules on state responsibility.⁴⁶ It follows that states affected by climate change (e.g., small, low-lying island states) can hold source states responsible for non-compliance with their obligations of conduct under Article 4.2 of the Paris Agreement and expose their pro-climate lip-service. It is an entirely different issue, though, whether any negligent source state is then obligated to compensate for climate-induced damage suffered by any claimant (Article 36 ASR). This brings us back to the causation issue discussed above: the obligation to compensate requires that the damage was *caused* by the internationally wrongful conduct. The *Bosnian Genocide* case illustrates that the ICJ applies two different causation standards depending on the issue at hand. The causation standard for establishing a breach of an obligation is less strict: a contribution to the injury suffered (i.e., genocide) suffices.⁴⁷

44 Decision 1/CP.21, Report of the Parties on its 21st session, Paris, 30 November to 11 December 2015, UN Doc. FCCC/CP/2015/10/Add.1 ('Adoption of the Paris Agreement'), 29 January 2016, para 51.

45 Vienna Convention on the Law of Treaties (adopted 22 May 1969, entered into force 27 January 1980) 1155 UNTS 331.

46 Linda Siegele, 'Loss and damage (Article 8)' in Daniel Klein et al. (eds), *The Paris Agreement on Climate Change: Analysis and commentary* (Oxford University Press 2017) 224, 232-233; Christina Voigt, 'International environmental responsibility and liability' in Lavanya Rajamani and Jacqueline Peel (eds), *Oxford Handbook of international environmental law* (2nd edn, Oxford University Press 2021) 1003, 1010; Elisa Calliari et al., 'Article 8 loss and damage' in Geert Van Calster and Leonie Reins (eds), *The Paris Agreement on Climate Change: A commentary* (Edward Elgar 2021) MN 8.28.

47 ICJ, *Bosnian Genocide*, para 430.

The causation standard concerning the obligation to make reparation is more demanding though.⁴⁸ In order to establish this causal link, the ICJ in *Bosnian Genocide* requires that the respondent's use of the means at its disposal would have sufficed to achieve the desired result, that is, no genocide would have occurred ('but-for' test).⁴⁹ In *Certain Activities*, which also concerned reparation, the ICJ was less strict and simply asked for 'a sufficient causal nexus between the wrongful act and the injury suffered'.⁵⁰ Even temporarily putting aside what 'sufficient' means in climate change cases, it is not a trivial matter to link a breach of obligations under the Paris Agreement, e.g., the persistent non-enforcement of domestic climate laws in a source state, with climate-induced damage, e.g., the destruction of an injured state's coastline by rising sea levels.

4.3 State responsibility for a breach of environmental human rights

International human rights law is a possibly more promising path towards establishing the international responsibility of a source state for its failure to reduce its greenhouse gas emissions sufficiently. By way of example, in 2005, a group of Inuits petitioned the Inter-American Commission of Human Rights alleging that the United States was in breach of its obligations under the American Declaration on the Rights and Duties of Man (1948). The petition cited the failure of the US to regulate its greenhouse gas emissions which, they claimed, were causing detrimental changes to their living conditions.⁵¹ The petition was ultimately rejected⁵², but it was successful in shifting the international focus to human rights litigation against source states. As such, in all likelihood, international human rights and their enforcement mechanisms will be increasingly used to force source states into making policy changes to address climate change.

There is no denying that climate change seriously impacts the enjoyment of human rights, not only for future generations but also for the present one.⁵³ With the

48 Ibid para 462.

49 Ibid.

50 Ibid para 34.

51 Inuit, Petition to the Inter-American Commission on Human Rights, Seeking Relief from Violations Resulting from Global Warming Caused by Acts and Omissions of the United States (7 December 2005) 103-4 <www.ciel.org/Publications/ICC_Petition_7Dec05.pdf> accessed 7 January 2022.

52 The IAHRCom decided that 'the information provided does not enable [the Commission] to determine whether the alleged facts would tend to characterise a violation of rights protected by the American Declaration [on the Rights and Duties of Man]' see Octavio Quirico, 'Climate change and state responsibility for human rights violations: Causation and imputation' (2018) 65 *Netherlands International Law Review* 185, 190.

53 On this issue see UNEP, *Climate change and human rights* (UNON Publishing Services Section 2015) 2-8.

effects of climate change becoming increasingly apparent, it is no longer a fanciful dystopian scenario that many areas of the world will experience diminished living conditions or become uninhabitable. Nevertheless, some climate change-related human rights complaints, such as the one initiated in 2020 by a group of Portuguese children and young adults against 33 state parties to the European Convention on Human Rights (ECHR), remain distinctively abstract in nature as they concern future health risks caused by accelerated climate change.⁵⁴ These anticipatory complaints face particular problems due to their reliance on far-reaching causal chains as well as factual and scientific uncertainties.⁵⁵ Other complaints focus on the here and now, submitting that human rights to life, privacy, family, food, water, health and housing are already affected by the negative impacts of climate change on livelihoods and living environments.⁵⁶ In this respect, it is well established that all states are obliged to respect these human rights and to guarantee them to all individuals under their jurisdiction, including a duty to protect them against violations by third parties. Environmental human rights obligations have been relatively well-defined and established by numerous decisions, judgments and communications of international human rights bodies.⁵⁷ Nevertheless, establishing a source state's international responsibility for climate-induced human rights violations faces challenges. Again, one of them is the issue of causation, which requires linking the political failure to sufficiently reduce greenhouse gas emissions to specific human rights aggrievances. The required multistage causal chain must connect (1) greenhouse gas emissions to climate change, (2) climate change to certain natural events (extreme weather events or slow onset events) and (3) this natural event to the individual human rights impairment. The second causation step poses the most significant problems when, for example, one tries to link a human-rights violation concerning the right to life to an extreme weather event such as a hurricane. In contrast, slow onset events such as rising sea

54 *Duarte Agostinho and Others v Portugal and Others* App no 39371/20, the application form is available at <<https://youth4climatejustice.org/wp-content/uploads/2020/12/Application-form-annex.pdf>> accessed 7 January 2022; at the European Court of Human Rights there are currently three climate change cases pending: the Portuguese children, a complaint submitted by Swiss seniors and a complaint submitted by an Austrian suffering from multiple sclerosis.

55 Ingrid Leijten, 'Human rights v insufficient climate action: The Urgenda case' (2019) 37 *Netherlands Quarterly of Human Rights* 112, 114.

56 See OHCHR, 'Report of the Office of the United Nations High Commissioner for Human Rights on the Relationship Between Climate Change and Human Rights' (2009) UN Doc A/HRC/10/61.

57 Thoroughly discussed in: Linda Hajjar Leib, *Human rights and the environment: Philosophical, theoretical, and legal perspective* (Martinus Nijhoff 2011); John Knox and Ramin Pejan (eds), *The human right to a healthy environment* (Cambridge University Press 2018); Sumuda Atappattu and Andrea Schapper, *Human rights and the environment: Key issues* (Routledge 2019).

levels⁵⁸, desertification⁵⁹ and glacial melting⁶⁰ are less difficult to scientifically link to climate change. Nevertheless, the multitude of cumulative contributing factors remains one of the major problems for individuals to overcome in order to link their grievance to a source state's climate change mitigation shortcomings. What is required is that international human rights bodies and courts embrace the concept of proportionate responsibilities of individual source states for the global failure to achieve the agreed-upon goals to mitigate climate change. Even if human rights courts accept each state's share in greenhouse gases as being partially causal to a specific human rights grievance, which would be in line with the Dutch *Urgenda* judgment⁶¹, one crucial question remains: Will the international human rights body or court oblige the respondent source state to reduce its greenhouse gases by a certain percentage in a certain period of time? While answering in the positive seems inconceivable, the *Urgenda* case illustrates that this is not completely outside the realm of possibility. However, applicants before the European Court of Human Rights (ECtHR) should be prepared for the Court to shy away from too many specifics regarding the required climate action under human rights law. In *Fadeyeva v Russia*, the ECtHR conceded that 'in today's society the protection of the environment is an increasingly important consideration'⁶². Nevertheless, the Court noted that because of the complexity involved, state parties have a broad margin of appreciation regarding the discharge of their obligation to protect individuals under their jurisdiction from environmental harm.⁶³ Even though it remains possible for the ECtHR to determine that there has been a manifest error by a national authority, it is difficult to see the ECtHR considering itself as the enforcer of the nationally determined contributions under the Paris Agreement. On the other hand, a ruling that a respondent state has to reduce its greenhouse gas emissions in accordance with its own policy goals does not necessarily tantamount to judicial overreach as it leaves the political

58 Michael Oppenheimer et al., 'Sea level rise and implications for low-lying islands, coasts and communities' in Hans-Otto Pörtner et al. (eds), *The Ocean and cryosphere in a changing climate. A special report of the Intergovernmental Panel on Climate Change* (IPCC 2019) 321.

59 Alisher Mirzabaev et al., 'Desertification' in Valérie Masson-Delmotte et al. (eds), *Climate change and land. An IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems* (IPCC 2019) 249.

60 Andrew Bliss, Regine Hock and Valentina Radić, 'Global response of glacier runoff to twenty-first century climate change' (2014) 119 *Journal of Geophysical Research: Earth Surface* 717-730.

61 In *Urgenda*, the Hague District Court decided in light of the assessment reports of the Intergovernmental Panel on Climate Change (IPCC), that the fact that 'Dutch emissions only constitute a minor contribution to global emissions does not alter the State's obligation to exercise care towards third parties', Hague District Court, *Urgenda Foundation v The State of The Netherlands*, Case C/09/456689/HA ZA 13-1396, 24 June 2015, ECLI:NL:RBDHA:2015:7145 (in Dutch), ECLI:NL:RBDHA:2015:7196 (English translation) para 4.79.

62 *Fadeyeva v Russia* App no 55723/00 (ECtHR, 30 November 2005) para 103.

63 *Ibid.*

decision of how to achieve the climate goals to the political discretion of the state.⁶⁴ Given that this legal development is still in its embryonic stage, it suffices here to note that human rights bodies and courts are capable of adapting their human rights approaches to evolving pressing societal climate issues as they have in the past.

5 International liability for damage caused by climate change

From an international law perspective, liability for the emission of greenhouse gases that contribute to climate change can exist under norms of national law (public law or tort law) if it is prescribed by international law or under norms of international law. Due to space constraints, only the latter will be analysed in the present chapter. National climate change litigation, including climate change-related lawsuits brought against both governments⁶⁵ and corporations,⁶⁶ before national courts, is on the rise across the globe, as attested by more than 1,800 climate change litigation cases currently in the database of the Sabin Center for Climate Change Law.⁶⁷ While the oldest case in the US litigation database dates back to 1986, almost 50% of cases have been filed in the last five years. The oldest case in the non-US litigation database was filed in 1994; more than 60% of cases have arisen in the last five years. The objective of climate-based lawsuits against governments essentially is to pressure states into developing and implementing effective climate change protection, adaptive measures and policies. In contrast, climate lawsuits against corporations seek to change corporate policy but also to receive compensation for climate change-related damage and reimbursement of expenses arising from the need to adapt to climate change. While the legal basis for these lawsuits is national law, courts use international environmental law as a means of interpretation or guidance in regard to the state's climate

64 Ingrid Leijten, 'Human rights v insufficient climate action: The *Urgenda* case' (2019) 37 *Netherlands Quarterly of Human Rights* 112, 117.

65 Most famously Supreme Court of the Netherlands, *Urgenda Foundation v The State of the Netherlands*, Case 19/00135, 20 December 2019, ECLI:NL:HR:2019:2006 (in Dutch); most recently Administrative Court of Paris, *Notre Affaire à Tous and Others v France*, Case N°1904967, 1904968, 1904972, 1904976/4-1, 3 February 2021 (the Administrative Court ruled that France can be held liable for failing to meet its commitments to reduce greenhouse gas emissions under national and European Union law).

66 Hague District Court, *Milieudefensie et al. v Royal Dutch Shell plc*, Case C/09/571932 / HA ZA 19-37926, May 2021, ECLI:NL:RBDHA:2021:5337 (in Dutch) (a multinational corporation was held liable for its greenhouse gas emissions and the accompanying detrimental effects on the global climate for the first time); Higher Regional Court Hamm, *Saúl Luciano Lliuya v RWE AG*, Case No 2 O 285/15, 30 November 2017 (in this ongoing case a Peruvian farmer is suing RWE for reimbursement of a portion of the costs incurred to establish flood protection).

67 For details see Sabin Center for Climate Change Law, *Climate Change Litigation Databases* <<http://climatecasechart.com/climate-change-litigation/>> accessed 7 January 2022.

change mitigation obligations.⁶⁸ By way of example, the court in *Urgenda* extensively relied on international climate goals to determine the legal obligations of the Netherlands under Article 2 (the right to life) and Article 8 (the right to family life) of the ECHR regarding the reduction of greenhouse gas emissions.⁶⁹ Increasingly and as mentioned above, claims are also being brought before regional human rights courts as well as communications and complaints before various human rights committees and other international quasi-judicial bodies.⁷⁰

5.1 State liability for damage caused by climate change under customary international law

A question that arises is whether a rule exists under customary international law stipulating that if one state causes damage to another state, for example, by allowing the excessive introduction of chlorofluorocarbons into the atmosphere that leads to ozone depletion above the latter state's territory, compensation has to be paid irrespective of whether the activity causing the damage was lawful or unlawful. Such a rule would require not only the general practice of states stemming from domestic jurisprudence or international treaties but also states' acceptance that this is required under international law (*opinio juris*).⁷¹ As previously mentioned, the *Trail Smelter* award concerned the international responsibility of Canada rather than its liability for transboundary environmental damage to private property in the United States. This responsibility was triggered by Canada's breach of its primary obligation under international law not to cause transboundary harm and to take measures to prevent actors under its jurisdiction from doing so.⁷² Similarly, international treaty law does not support the existence of a rule of state liability for lawful acts that cause damage. If a plethora of liability instruments were in existence that could serve as sufficient state practice and *opinio juris*, an argument could indeed be made for the existence of

68 Lennart Wegener, 'Can the Paris Agreement help climate change litigation and vice versa?' (2020) 9 *Transnational Environmental Law* 17, 25.

69 *Hague Court of Appeal, Urgenda Foundation v The State of the Netherlands*, Case C/09/456689/ HA ZA 13-1396, 9 October 2018, ECLI:NL:GHDHA:2018:2591 (in Dutch), ECLI:NL:GHDHA:2018:2610 (unofficial English translation) paras 46-53; Supreme Court of the Netherlands, *Urgenda Foundation v The State of the Netherlands*, paras 7.1-7.6.2.

70 For example, 16 children filed a communication to the United Nations Committee on the Rights of the Child, alleging that the failure of states to tackle the climate crisis constitutes a violation of their rights. The Committee declared the communication inadmissible due to the non-exhausting of domestic remedies, *Chiara Sacchi et al. v Argentina, Brazil, France, Germany and Turkey*, UN Doc CRC/C/88/D/104/2019, 8 October 2021.

71 Article 38 para 1 lit b Statute of the International Court of Justice (adopted 26 June 1945, entered into force 24 October 1945): 'international custom, as evidence of a general practice accepted as law'.

72 *Trail Smelter Case*, 1965.

such a rule under customary international law; however, this is not the case. Amongst the thousands of international environmental treaties currently in force,⁷³ there is only one that explicitly imposes liability on states for damage caused by lawful activities under their jurisdiction or control, namely the Convention on International Liability for Damage Caused by Space Objects (Space Liability Convention)⁷⁴. Additionally, Article 7 para 2 of the Convention on the Law of the Non-navigational Uses of International Watercourses⁷⁵ arguably contains elements of liability by stipulating an obligation of lawfully acting states to ‘discuss’ compensation if significant harm occurs. A handful of other agreements establish the civil liability of a private operator for certain ultra-hazardous activities that can have a transboundary effect, most notably involving nuclear energy and the maritime transport of oil.⁷⁶ Given that the Space Liability Convention only regulates the highly specialised area of outer space and the fact that it is not predominantly environmentally orientated, does not allow sweeping conclusions to be drawn as to the existence of a general liability rule for transboundary environmental damage under customary international law.⁷⁷ Consequently, one can confidently claim that there is no state practice, no *opinio juris* and therefore no rule on state liability under customary international law. This makes a special agreement such as the Paris Agreement (part II.) or the Space Liability Convention (part III.) vital for the possible imposition of liability.

73 The International Environmental Agreements (IEA) Database Project currently includes over 1,300 MEAs, over 2,200 BEAs and 250 other environmental agreements. For detailed figures see <<https://iea.uoregon.edu/>> accessed 7 January 2022.

74 Convention on International Liability for Damage Caused by Space Objects (adopted 29 March 1972, entered into force 1 September 1972) 961 UNTS 13810.

75 Convention on the Law of the Non-navigational Uses of International Watercourses (adopted 21 May 1997, entered into force 17 August 2014) 2999 UNTS 77.

76 Anne Daniel, ‘Civil liability regimes as a complement to multilateral environmental agreements: Sound international policy or false comfort?’ (2003) 12 *Review of European, Comparative and International Environmental Law* 225.

77 Similarly Günther Handl, ‘State liability for accidental transnational environmental damage by private persons’ (1980) 74 *American Journal of International Law* 525, 535-540; Michel Montjoie, ‘The concept of liability in the absence of an internationally wrongful act’ in James Crawford et al. (eds), *The law of international responsibility* (Oxford University Press 2010) 503, 507; Rüdiger Wolfrum, ‘Environmental liability in international law’ in Wolfgang Kahl and Marc-Philippe Weller (eds), *Climate change litigation: A handbook* (C.H. Beck, Hart, Nomos 2021) MN 37-39.

5.2 State liability for damage caused by climate change under the Paris Agreement

It should be noted at the outset that the UNFCCC, the Kyoto Protocol⁷⁸ and the Paris Agreement do not individually or collectively establish a full-fledged international state liability regime for damage caused by climate change. The reason is that industrialised states have thus far refused to consider anything that could even remotely be interpreted as an admission of liability or financial responsibility for the impacts of global climate change, an issue that has come to be recognised as one of the taboos of climate change negotiations.⁷⁹

The point of departure for considerations on state liability within the international climate change treaty regime is Article 8 para 1 of the Paris Agreement and the now infamous paragraph 51 of Decision 1/CP.21, which was discussed above (part D. II). Paragraph 51 states that ‘Article 8 of the Agreement does not involve or provide a basis for any liability or compensation’⁸⁰ and thus explicitly addresses liability. Contrary to what was said regarding states’ duties to compensate for injuries caused by a breach of the Paris Agreement, namely that Article 8 does not preclude the application of general rules on state responsibility, the liability issue is quite a different matter. The wording of paragraph 51 makes it clear that the Paris Agreement did not intend to create a new conventional liability regime where customary liability rules on which states have traditionally relied do not exist (see part E. I).

A number of arguments have been brought forward to support the view that Decision 1/CP.21 does not prevent the development of a future liability regime, either by the states parties to the Paris Agreement or under the ‘Warsaw International Mechanism for Loss and Damage associated with Climate Change Impacts’ (WIM) established at the Warsaw COP19 in 2013.⁸¹ In this context it is significant that the exclusion of a new liability and compensation regime is contained in the decision that adopted the Paris Agreement and not in the Agreement itself.⁸² While the legal status of decisions by international institutions, such as the Conference of the Parties to the Convention (COP), is still disputed, most scholars agree that they are not legally

78 Kyoto Protocol to the UNFCCC (adopted 11 December 1997, entered into force 16 February 2005) 2303 UNTS 162.

79 Benito Müller et al., *Framing future commitments: A pilot study on the evolution of the UNFCCC greenhouse gas mitigation regime* (Oxford Institute for Energy Studies 2003) 5-1.

80 Decision 1/CP.21, Report of the Parties on its 21st session, Paris, 30 November to 11 December 2015, UN Doc. FCCC/CP/2015/10/Add.1 (‘Adoption of the Paris Agreement’), 29 January 2016, para 51.

81 Established by COP Decision 2/CP.19, Report of the Conference of the Parties on its nineteenth session, held in Warsaw from 11 to 23 November 2013, UN Doc. FCCC/CP/2013/10/Add.1, 31 January 2014, para 1.

82 MJ Mace and Roda Verheyen, ‘Loss, damage and responsibility after COP21: All options open for the Paris Agreement’ (2016) *Review of European, Comparative and International Environmental Law* 197, 205.

binding unless their governing instrument provides for such.⁸³ This means that the states parties acting in consensus can override any earlier interpretation of the treaty and the Conference of the Parties, which serves as the meeting of the Parties to the Paris Agreement (CMA), can adopt a decision that supersedes the exclusion of a liability and compensation regime. Considering that paragraph 51 only interprets Article 8 Paris Agreement and does not preclude the claiming of a breach of general international law, other provisions of the Agreement could provide a legal basis and path forward for liability or compensation claims.⁸⁴ Most prominently in this regard is Article 4.2 Paris Agreement, which enshrines a legally-binding procedural obligation for state parties to submit nationally determined contributions. As elaborated above, states parties that fail to comply with this procedural obligation under the Paris Agreement may still incur responsibility.⁸⁵

5.3 State liability for damage caused by climate engineering under the Space Liability Convention

Geoengineering, also referred to as ‘climate engineering’, is defined as ‘the deliberate large-scale manipulation of the planetary environment to counteract anthropogenic climate change’⁸⁶ and seeks to either remove carbon dioxide from the atmosphere or to reduce the incoming solar radiation. While such efforts are intended to mitigate climate change, they could potentially interfere with the natural systems on earth in an unforeseen and irreversible manner, thereby exasperating climate change even further. As geoengineering is still in its infancy and partially relies on technology that has not been developed yet, the full gamut of possible consequences for the global climate is not entirely foreseeable.⁸⁷ One example of geoengineering is the envisioned use of technology such as reflective mirrors in outer space to reduce incoming solar radiation.⁸⁸ Such appliances could cool the planet but negatively affect the

83 Daniel Bodansky, ‘Legally binding versus non-legally binding instruments’ in Scott Barrett et al. (eds), *Towards a workable and effective climate regime* (CEPR Press and Ferdi 2015) 155, 157; in favour of bindingness Jutta Brunnée, ‘Coping with consent: Law-making under multi-lateral environmental agreements’ (2002) 15 *Leiden Journal of International Law* 1.

84 Mace and Verheyen (n 82) 206.

85 Morten Broberg, ‘Interpreting the UNFCCC’s provisions on ‘mitigation’ and ‘adaptation’ in light of the Paris Agreement’s provision on loss and damage’ (2020) *Climate Policy* <<https://doi.org/10.1080/14693062.2020.1745744>> accessed 7 January 2022.

86 Royal Society, *Geoengineering the climate: Science, governance and uncertainty* (The Royal Society 2009) 1.

87 Takanobu Kosugi, ‘Role of sunshades in space as a climate control option’ (2010) 67 *Acta Astronautica* 241, 243.

88 For more details see Daniel J Lunt et al., ‘“Sunshade World”: A fully coupled GCM evaluation of the climatic impacts of geoengineering’ (2008) 35 *Geophysical Research Letters*

earth's hydrologic cycle, the El Niño-Southern Oscillation climate pattern and the North Atlantic Deep Water cycle and therefore impact not only the global climate⁸⁹ but multitudes of individual ecosystems and biodiversity as a whole⁹⁰. Nevertheless, space-based climate engineering research continues apace, albeit in labs rather than in orbit for the time being. The following analysis will explore whether climate engineering activities undertaken in outer space give rise to state liability under the Space Liability Convention. It should be noted that space-based climate engineering is just one particular aspect of climate engineering, the majority of climate engineering activities are unlikely to take place in space and will therefore fall outside the scope of the Space Liability Convention.

There are two immediately relevant sections in the convention applicable here. Firstly, Article I lit a of the Space Liability Convention only covers damage to persons and property, meaning that environmental damage is excluded. However, if changes to the global climate brought about by climate engineering caused droughts, floods or the like, that resultant damage could be classified as damage to public or private property and incur clean-up, mitigation and restoration costs that are covered by the Space Liability Convention.⁹¹ Secondly, the applicability of the Space Liability Convention to any given case will depend upon the interpretation of the phrase 'damage caused by a space object' (Article II Space Liability Convention).⁹² Any judicial review based on these articles will need to establish causal links, and this will raise similar issues to those discussed regarding the no-harm rule (part D. I.). For example, a state launches a reflective mirror into outer space that has specific negative effects on the global climate, which, in turn, leads to extreme weather events that damage common goods or private property. Attributing a specific extreme weather event, which could occur at a much later date and on the opposite end of the globe, to the reflective mirror would be challenging in light of the plethora of stressors that currently affect and damage the environment. Moreover, the occurrence of a natural

L12710, <<https://agupubs.onlinelibrary.wiley.com/doi/full/10.1029/2008gl033674>> accessed 7 January 2022.

89 Wilfried Rickels et al., *Large-scale intentional interventions into the climate system? Assessing the climate engineering debate* (Kiel Earth Institute 2011) 40.

90 Royal Society, *Geoengineering the climate: Science, governance and uncertainty* (The Royal Society 2009) 34.

91 Carl Q Christol, 'International liability for damage caused by space objects' (1980) 74 *American Journal of International Law* 346, 362; Peter Stubbe, *State accountability for space debris: A legal study of responsibility for polluting the space environment and liability for damage caused by space debris* (Brill 2018) 371-372.

92 While the Space Liability Convention does not define causation or lay down the conditions that must be met in order for causation to be fulfilled, a causal link is central to any compensation claim, in the sense that the victim must demonstrate that the damage suffered was caused by the space object, see Lesley J Smith and Armel Kerrest, 'Article II (Absolute Liability)' in Stephan Hobe et al. (eds), *Cologne commentary on space law Volume II* (Carl Heymanns 2013) 410-477.

climate phenomenon could have been the cause of the damage. However, a multi-stage causal chain is not necessarily problematic under the Space Liability Convention. While commentators argue that damage caused through a chain of events initiated by a space object does not hamper the applicability of the Space Liability Convention,⁹³ there is no state practice on which to base any recourse regarding causation given that the only invocation of the Space Liability Convention to date was resolved by diplomatic means.⁹⁴

A substantial issue regarding assigning climate engineering a place in a causal chain is the scientific uncertainty. Given that climate engineering is still only theoretically possible and has a multitude of forms it could take, the unknown properties, scale and form of climate engineering present a challenge. Additionally, attributing specific extreme weather events such as droughts or floods to climate engineering would be extremely difficult if not impossible given the complexity, variability and unpredictability of the global climate system.⁹⁵ To overcome this attribution problem, novel methods for proving the existence of a causal link between climate engineering activities and personal or property damage in light of scientific uncertainties and a lack of reliable scientific data have been suggested. One notable method uses probabilistic event attribution whereby causal explanations are based on probability distributions.⁹⁶ This leads to cautious optimism that at least some of the foreseeable challenges in attributing liability for climate engineering activities can indeed be overcome in the future.

6 Summary and conclusion

Anthropogenic climate change is arguably the greatest threat to the environment since the impact of an asteroid that caused the extinction of the dinosaurs 66 million years ago and represents an existential threat to humankind. As the foregoing elaborations have demonstrated, a myriad of conceptual uncertainties and hurdles in inter-

93 Ibid.

94 'Canada: Claim against the Union of Soviet Socialist Republics for damage caused by Soviet Cosmos 954' (1979) 18 *International Legal Materials* 907ff; the final settlement is reproduced in (1981) 20 *International Legal Materials* 689.

95 Stephen H Schneider, 'Geoengineering: Could – or should – we do it?' (1996) 33 *Climatic Change* 291, 294; Jason J Blackstock and Jane CS Long, 'The politics of geoengineering' (2010) 327 *Science* 527; Alan Robock et al., 'A test for geoengineering?' (2010) 327 *Science* 530, 531; Toby Svoboda and Peter Irvine, 'Ethical and technical challenges in compensating for harm due to solar radiation management geoengineering' (2014) 17 *Ethics, Policy & Environment* 157, 161-162.

96 Myles Allen et al., 'Scientific challenges in the attribution of harm to human influence on climate' (2007) 155 *University of Pennsylvania Law Review* 1353; Joshua B Horton et al., 'Liability for solar geoengineering: Historical precedents, contemporary innovations, and governance possibilities' (2015) 22 *N.Y.U. Environmental Law Journal* 225, 261-264.

national law remain open and undecided and currently prevent state responsibility and state liability from being viable options for effectively remedying the adverse effects of climate change. Recurring issues, such as the necessity of establishing a causal link between the activity and the harm, present hurdles to all three legal bases for state responsibility discussed here, i.e., the no-harm rule, the Paris Agreement and human rights. Additionally, determining the exact role of the multitude of emitters, including nature itself, needs to be resolved for progress to be made. An analysis of state liability for climate change damage has led down a legal *cul de sac*, given that states have been very reticent to adopt any international regime on environmental state liability, leading many to argue that they are figuratively fiddling while Rome burns. The only meaningful state liability regime in existence has little bearing on climate change as it concerns the highly specialised area of outer space, and even then, it does not cover environmental damage.

However, the foregoing elaborations nevertheless show that there are approaches for the substantiation of prevention and compensation claims under international law for those adversely affected by climate change. Novel methods for navigating the causation quagmire and possible future developments with regard to the Paris Agreement could pave the way for responsibility and liability claims.

In the end, successfully tackling climate change requires a concerted international effort, implemented by those causing the problem who need to be willing to change and hold themselves accountable via international climate protection obligations to effectively reduce emissions and recompense for irreparable damage.

Bibliography

- Akehurst MB, 'International liability for injurious consequences arising out of acts not prohibited by international law' (1985) 16 *Netherlands Yearbook of International Law* 3-16.
- Allen M et al., 'Scientific challenges in the attribution of harm to human influence on climate' (2007) 155 *University of Pennsylvania Law Review* 1353-1400.
- Atappattu S and Schapper A, *Human rights and the environment: Key issues* (Routledge 2019).
- Biermann F, 'Common concern of humankind: The emergence of a new concept of environmental law' (1996) 34 *Archiv des Völkerrechts* 426-481.
- Blackstock JJ and Long JCS, 'The politics of geoengineering' (2010) 327 *Science* 527 <<https://www.science.org/doi/10.1126/science.1183877>> accessed 7 January 2022.
- Bliss A, Hock R, Radić V, 'Global response of glacier runoff to twenty-first century climate change' (2014) 119 *Journal of Geophysical Research: Earth Surface* 717-730.
- Bodansky D, 'Legally binding versus non-legally binding instruments' in Barrett S et al. (eds), *Towards a workable and effective climate regime* (CEPR Press and Ferdi 2015) 155-165.
- , 'The legal character of the Paris Agreement' (2016) 25 *Review of European, Comparative and International Environmental Law* 142-150.

- Boyle AE, 'State responsibility and international liability for injuries consequences of acts not prohibited by international law: A necessary distinction' (1990) 39 *International and Comparative Law Quarterly* 1-26.
- and Redgwell C, *Birmie, Boyle & Redgwell's international law and the environment* (4th edn, Oxford University Press 2021).
- Bratspies RM and Miller RA (eds), *Transboundary harm in international law: Lessons from the Trail Smelter arbitration* (Cambridge University Press 2006).
- Broberg M, 'Interpreting the UNFCCC's provisions on 'mitigation' and 'adaptation' in light of the Paris Agreement's provision on 'loss and damage'' (2020) *Climate Policy* <<https://doi.org/10.1080/14693062.2020.1745744>> accessed 7 January 2022.
- Brownlie I, *System of the law of nations, state responsibility. Part I* (Clarendon Press 1983).
- Brunnée J, 'COPing with consent: Law-making under multilateral environmental agreements' (2002) 15 *Leiden Journal of International Law* 1-52.
- , 'Of sense and sensibility: Reflections on international liability regimes as tools for environmental protection' (2004) 53 *The International and Comparative Law Quarterly* 351-368.
- , 'International environmental law and community interests, procedural aspects' in Benvenisti E and Nolte G (eds), *Community interest across international law* (Oxford University Press 2018) 151-175.
- , 'Harm prevention' in Rajamani L and Peel J (eds), *The Oxford handbook of international environmental law* (2nd edn, Oxford University Press 2021) 269-284.
- Calliari E et al., 'Article 8 loss and damage' in Van Calster G and Reins L (eds), *The Paris Agreement on climate change: A commentary* (Edward Elgar 2021) 200-217.
- Christol CQ, 'International liability for damage caused by space objects' (1980) 74 *American Journal of International Law* 346-371.
- Churchill RR, 'Facilitating (transnational) civil liability litigation for environmental damage by means of treaties: Progress, problems, and prospects' (2001) 12 *Yearbook of International Environmental Law* 3-41.
- Crawford J, 'The current political discourse concerning international law' (2018) 81 *Modern Law Review* 1-22.
- Daniel A, 'Civil liability regimes as a complement to multilateral environmental agreements: Sound international policy or false comfort?' (2003) 12 *Review of European, Comparative and International Environmental Law* 225-241.
- De la Fayette L, 'The ILC and international liability: A commentary' (1997) 6 *Review of European, Comparative and International Environmental Law* 322-333.
- Dupuy PM, *La responsabilité internationale des Etats pour les dommages d'origine technologique et industrielle* (Editions A. Pedone 1977).
- Faure MG and Nollkaemper A, 'International liability as an instrument to prevent and compensate for climate change' (2007) 43 *Stanford Journal of International Law* 123-179.
- Fitzmaurice M, 'Responsibility and climate change' (2010) 53 *German Yearbook of International Law* 89-138.
- Handl G, 'State liability for accidental transnational environmental damage by private persons' (1980) 74 *American Journal of International Law* 525-565.
- Heede R, 'Tracing anthropogenic carbon dioxide and methane emissions to fossil fuel and cement producers, 1854-2010' (2014) 122 *Climatic Change* 229-241.
- Hoegh-Guldberg O et al., 'Impacts of 1.5°C global warming on natural and human systems' in Masson-Delmotte V et al. (eds), *Global warming of 1.5°C. An IPCC Special Report on the im-*

- pacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty* (Intergovernmental Panel on Climate Change 2019).
- Horton JB et al., 'Liability for solar geoengineering: Historical precedents, contemporary innovations, and governance possibilities' (2015) 22 N.Y.U. Environmental Law Journal 225-273.
- ILC, 'Report of the International Law Commission on the work of its 21st session' (2 June-8 August 1969) UN Doc A/7610/Rev1.
- , 'Preliminary report of SR Quentin-Baxter on international liability for injurious consequences arising out of acts not prohibited by international law' (1980) UN Doc A/CN.334.
- , 'Report of the International Law Commission on the work of its 53rd Session' (23 April-1 June and 2 July-10 August 2001) UN Doc A/56/10.
- , 'First report on the protection of the atmosphere' (5 May-6 June and 7 July-8 August 2014) UN Doc A/CN.4/667.
- Knox J and Pejan R (eds), *The human right to a healthy environment* (Cambridge University Press 2018).
- Kosugi T, 'Role of sunshades in space as a climate control option' (2010) 67 Acta Astronautica 241-253.
- Lawrence P and Wong D, 'Soft law in the Paris Climate Agreement: Strength or weakness?' (2016) 26 Review of European, Comparative and International Environmental Law 276-286.
- Lefeber R, *Transboundary environmental interference and the origin of state liability* (Kluwer Law International 1997).
- Leib LH, *Human rights and the environment: Philosophical, theoretical, and legal perspective* (Martinus Nijhoff 2011).
- Leijten I, 'Human rights v insufficient climate action: The *Urgenda* case' (2019) 37 Netherlands Quarterly of Human Rights 112-118.
- Lunt DJ et al., "'Sunshade world": A fully coupled GCM evaluation of the climatic impacts of geoengineering' (2008) 35 Geophysical Research Letters L12710, doi:10.1029/2008GL033674 accessed 7 January 2022.
- MacDonald N, 'The role of due diligence in international law' (2019) 68 International & Comparative Law Quarterly 1041-1054.
- Mace MJ and Verheyen R, 'Loss, damage and responsibility after COP21: All options open for the Paris Agreement' (2016) Review of European, Comparative and International Environmental Law 197-214.
- Mayer B, 'Obligations of conduct in the international law on climate change: A defence' (2018) 27 Review of European, Comparative and International Environmental Law 130-140.
- Mickelson K, 'Rereading Trail Smelter' (1993) 31 Canadian Yearbook of International Law 219-234.
- Mirzabaev A et al., 'Desertification' in Masson-Delmotte V et al. (eds), *Climate change and land. An IPCC Special Report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems* (Intergovernmental Panel on Climate Change 2019).
- Montjoie M, 'The concept of liability in the absence of an internationally wrongful act' in Crawford J et al. (eds), *The law of international responsibility* (Oxford University Press 2010) 503-513.
- Müller B et al., *Framing future commitments: A pilot study on the evolution of the UNFCCC greenhouse gas mitigation regime* (Oxford Institute for Energy Studies 2003).

- OHCHR, 'Report of the Office of the United Nations High Commissioner for Human Rights on the relationship between climate change and human rights' (2009) UN Doc A/HRC/10/61.
- Oppenheimer M et al., 'Sea level rise and implications for low-lying islands, coasts and communities' in Pörtner H-O et al. (eds), *The ocean and cryosphere in a changing climate. A Special Report of the Intergovernmental Panel on Climate Change* (Intergovernmental Panel on Climate Change 2019).
- Our World in Data, 'Who has contributed most to global CO₂ emissions? Cumulative carbon dioxide emissions over the period from 1751 to 2017' <<https://bit.ly/3DiqDIO>> accessed 28 March 2022.
- Plakokefalos I, 'Causation in the law of state responsibility and the problem of overdetermination: In search of clarity' (2015) 26 *European Journal of International Law* 471-492.
- Quirico O, 'Climate change and state responsibility for human rights violations: Causation and imputation' (2018) 65 *Netherlands International Law Review* 185-215.
- Read JE, 'The Trail Smelter dispute' (1963) 1 *Canadian Yearbook of International Law* 213-229.
- Rickels W et al., *Large-scale intentional interventions into the climate system? Assessing the climate engineering debate* (Kiel Earth Institute 2011).
- Robock A et al., 'A test for geoengineering?' (2010) 327 *Science* 530-531.
- Royal Society, *Geoengineering the climate: Science, governance and uncertainty* (The Royal Society 2009).
- Sabin Center for Climate Change Law, 'Climate Change Litigation Databases' <<http://climatecasechart.com/climate-change-litigation/>> accessed 7 January 2022.
- Schneider SH, 'Geoengineering: Could – or should – we do it?' (1996) 33 *Climatic Change* 291-302.
- Sendut JH, 'Inter-state climate change litigation and the monetary gold principle' (*Opinio Juris*, 5 January 2021) <<https://opiniojuris.org/2021/01/05/inter-state-climate-change-litigation-and-the-monetary-gold-principle/>> accessed 7 January 2022.
- Shavell S, *Economic analysis of accident law* (Harvard University Press 1987).
- Shelton D, 'Righting wrongs: Reparations in the Articles on State Responsibility' (2002) 96 *American Journal of International Law* 833-856.
- , 'Common concern of humanity' (2009) 1 *Iustum Aequum Salutare* 33-40.
- Siegele L, 'Loss and damage (Article 8)' in Klein D et al. (eds), *The Paris Agreement on Climate Change: Analysis and commentary* (Oxford University Press 2017) 224-238.
- Simma B, 'Self-contained regimes' (1985) 16 *Netherlands Yearbook of International Law* 111-136.
- Smith LJ and Kerrest A, 'Article II (absolute liability)' in Hobe S et al. (eds), *Cologne commentary on space law. Volume II* (Carl Heymanns Verlag 2013) 116-130.
- Soltau F, 'Common concern of humankind' in Gray KR, Tarasofsky R and Carlarne C (eds), *Oxford handbook of international climate change law* (Oxford University Press 2016) 202-212.
- Stallard H, 'Turning up the heat on Tuvalu: An assessment of potential compensation for climate change damage in accordance with states responsibility under international law' (2009) 15 *Canterbury Law Review* 163-203.
- Stubbe P, *State accountability for space debris: A legal study of responsibility for polluting the space environment and liability for damage caused by space debris* (Brill 2018).
- Svoboda T and Irvine P, 'Ethical and technical challenges in compensating for harm due to solar radiation management geoengineering' (2014) 17 *Ethics, Policy & Environment* 157-174.
- UNEP, *Climate change and human rights* (UNON Publishing Services Section 2015).

- Voigt C, 'State responsibility for climate change damages' (2008) 77 *Nordic Journal of International Law* 1-22.
- , 'The Paris Agreement: What is the standard of conduct for parties?' (2016) 26 *Questions of International Law* 17-28.
- , 'International environmental responsibility and liability' in Rajamani L and Peel J (eds), *Oxford handbook of international environmental law* (2nd edn, Oxford University Press 2021) 1003-1021.
- and Ferreira F, "'Dynamic differentiation": The principles of CBDR-RC, progression and highest possible ambition in the Paris Agreement' (2016) 5 *Transnational Environmental Law* 285-303.
- Wegener L, 'Can the Paris Agreement help climate change litigation and vice versa?' (2020) 9 *Transnational Environmental Law* 17-36.
- Wewerinke-Singh M, Aguon J and Hunter J, 'Bringing climate change before the international court of justice: prospects for contentious cases and advisory opinions' in Alogna I, Bakker C and Gauci J-P (eds), *Climate change litigation: Global perspectives* (Brill 2021) 393-414.
- Wolfrum R, 'Means of ensuring compliance with and enforcement of international and environmental law' (1998) 272 *Recueil des Cours de l'Académie de Droit International* 9-154.
- , 'Environmental liability in international law' in Kahl W and Weller M-P (eds), *Climate change litigation: A handbook* (C.H. Beck, Hart, Nomos 2021) 149-165.
- Yue XL and Gao QX, 'Contributions of natural systems and human activity to greenhouse gas emissions' (2018) 9 *Advances in Climate Change Research* 243-252.

Cases

France

Administrative Court of Paris, *Notre Affaire à Tous and Others v France*, Case N°1904967, 1904968, 1904972, 1904976/4-1, 3 February 2021.

Germany

Higher Regional Court Hamm, *Saúl Luciano Lliuya v RWE AG*, Case No 2 O 285/15, 30 November 2017.

The Netherlands

Hague District Court, *Urgenda Foundation v The State of The Netherlands*, Case C/09/456689/HA ZA 13-1396, 24 June 2015, ECLI:NL:RBDHA:2015:7145 (in Dutch), ECLI:NL:RBDHA:2015:7196 (English translation).

Supreme Court of the Netherlands, *Urgenda Foundation v The State of the Netherlands*, Case 19/00135, 20 December 2019, ECLI:NL:HR:2019:2006 (in Dutch).

Hague District Court, *Milieudefensie et al. v Royal Dutch Shell plc*, Case C/09/571932 / HA ZA 19-37926, May 2021, ECLI:NL:RBDHA:2021:5337 (in Dutch).

European Court of Human Rights

Duarte Agostinho and Others v Portugal and Others App no 39371/20, the application form is available at <<https://youth4climatejustice.org/wp-content/uploads/2020/12/Application-form-annex.pdf>> accessed 7 January 2022.

Fadeyeva v Russia App no 55723/00 (ECtHR, 30 November 2005).

International Court of Justice

Application of the Convention on the Prevention and Punishment of the Crime of Genocide (Bosnia and Herzegovina v Serbia and Montenegro) (2007) ICJ Rep 43.

Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica v Nicaragua) (Compensation owed by the Republic of Nicaragua to the Republic of Costa Rica) (2018) ICJ Rep 15.

Corfu Channel Case (UK v Albania) (Merits) (1949) ICJ Rep 4.

Legality of the Use of Nuclear Weapons (Advisory Opinion) (1996) ICJ Rep 226.

Pulp Mills on the River Uruguay (Argentina v Uruguay) (2010) ICJ Rep 14.

Committee on the Rights of the Child

Chiara Sacchi et al. v Argentina, Brazil, France, Germany and Turkey, UN Doc CRC/C/88/D/104/2019, 8 October 2021.

Miscellaneous

Trail Smelter Case (US v Canada) (1938 and 1941) 3 RIAA 1905-1982.

'Canada: Claim Against the Union of Soviet Socialist Republics for Damage Caused by Soviet Cosmos 954' (1979) 18 International Legal Materials 907.

From blabla to concrete obligations: The Oslo Principles and the Principles on Climate Obligations of Enterprises*

Jaap Spier

Abstract

This article explores the Principles on Climate Obligations of Enterprises adopted by an international group of experts. The now second edition of this non-legally binding document provides a guideline for corporate behaviour and emphasises corporate social responsibility in climate change. The expert group, which the author was part of, assumes an obligation of enterprises to reduce their greenhouse gas emissions – the internationally agreed well below 2°C target thereby serves as the point of reference. The complex and all-encompassing task of climate change poses decision-makers with difficult decisions that do not always favour climate protection. Therefore, all actors need to work together to solve the problem as large-scale emission reductions could be achieved if enterprises assumed responsibility for their emissions along their value chain. Against this background, this article provides an introduction to the Principles on Climate Obligations for Enterprises and a first-hand account of how they were created.

1 Introduction

Over the centuries, major evils rarely came fully unexpected. Wars and revolutions are perfect examples. If history tells us anything, it is that humankind is unable or unwilling to ward off self-created catastrophes.

Most people – probably genuinely – want to respect basic moral values. It is not easy to understand how they could reconcile that view with evils such as slavery, the inquisition, torture and discrimination.

It is glaringly obvious that insufficiently abated climate change is going to cause global catastrophes of a magnitude so far only seen in horror movies. Happily, some politicians and captains of industry go at pains to stem the tide. For the time being, they are exceptions to the rule. It rains laudable and promising speeches, declarations and what have you. Too often, they are not translated into meaningful action.

This unfortunate state of affairs is fuelled by, among other issues:

* This article was written on the occasion of the 2018 Conference on ‘Climate Change, Responsibility and Liability’ held in Graz, Austria. The content was updated in March 2021.

- short-sightedness;
- hugely diverging interests;
- the fear of compromising the level-playing field;
- a lack of vision and/or ambition;
- a state of paralysis; and
- a lack of support from the public.

Taking the required measures comes at a cost. The benefits will not be visible for decades. Even if it would be possible to reduce GHG emissions to zero within, say, ten years, the climate will change for the worse for decades to come. The COVID-19 crisis probably taught us that ‘society’ is too impatient to accept sacrifices that do not visibly pay soon.

The law can be of little use to overcome part of these issues. It can contribute to a level playing field and bridge the gap between the diverging interests. It can provide an ambitious roadmap for action. Such a roadmap could – and should – stimulate investors and NGOs to strongly promote compliance with the resulting obligations. It can serve as a source of inspiration for courts and other adjudicators.

There are more reasons why a focus on ‘the law’ is promising. Seeing the inertia of international politics and the lack of ambition of a major part of the business community, investors and NGOs, it is important to make an attempt to discern the legal obligations of the major players – States, enterprises and investors – in the face of climate change. Why? Without a keen understanding of one’s legal obligations, it is impossible to comply and to assess whether an entity did comply. Investors, credit rating agents, and accountants are in the dark about how to assess the risks of non-compliance. Naturally, they can compare the action taken by a specific State or enterprise with States or enterprises in a more or less similar position. Such a comparison is useful but does not shed any light on whether the relevant action sufficed.

2 A focus on prevention

The Principles discussed in this contribution aim to keep the increase of global temperature below a fatal threshold. That, we¹ think, the most important and challenging task of our time.² The Principles do not express a view on compensation, nor on adaptation. These are important topics in their own right.

1 ‘We’ refers to the members of the relevant expert group.

2 Expert Group on Global Climate Change edited by Jaap Spier, *Principles on climate obligations of enterprises* (Legal Perspectives for Global Challenges no 5 (2nd edn, Eleven International Publishing 2020), available at <https://climateprinciplesforenterprises.org/> accessed 8 November 2021.

3 The Oslo Principles³

3.1 Introduction

In 2012 Thomas Pogge (Yale) and I convened an international group of experts from all continents⁴ with the aim of drafting legal obligations of States and Enterprises in the face of climate change. In the course of four meetings (The Hague, New York, London and Oslo), the group discussed several drafts. A group of Jim Silk's (Yale) students wrote a report about the human rights and international law aspects.⁵ A commentary, including just mentioned report, explains the legal basis and the meaning of the 30 Principles.

A preamble, drafted by the Hon. Michael Kirby, explains the need for and key elements of our Principles in colloquial language

The group could not reach an agreement on more than a few obligations of enterprises. As will be explained below, that probably was a blessing in disguise.

The Oslo Principles (hereinafter OP) contain reduction obligations, obligations concerning activities (Principle 8), 'lawful and appropriate trade consequences for States that fail to comply with the' (Principle 20), 'new subsidies, aid, grants, guaranties, or insurance for installation of major new facilities ... that will result in the emission of unnecessarily high, or, in the given circumstances, unsustainable quantities of GHG, either within or outside their territories' (Principle 21), and access to justice (Principle 25).

Principles 27-30 contain the obligations of enterprises.

The OP have quite a lot in common with the Principles on Climate Obligations of Enterprises (EP); see for elaboration below.

3.2 Key reduction obligation

According to OP Principle 6:

3 See for further elaboration Philip Sutherland, 'Obligations to reduce emissions: From the Oslo Principles to Enterprises' (2017) 11(2) JETL 177; Jaap Spier, 'The Oslo Principles and the Enterprises Principles: Legal strategies to come to grips with climate change' (2017) 8(2) JETL 218; Jaap Spier, 'Pogingen om het debat over klimaatverandering handen en voeten te geven: De Oslo Principles en de Principles on Climate Obligations of Enterprises' (2018) 6 Tijdschrift voor Milieurecht 632.

4 For the members of the group see: Expert Group on Global Climate Obligations, *Oslo Principles on Global Climate Obligations* (Legal Perspectives for Global Challenges no 3, Eleven International Publishing 2015) 10, <<https://climateprinciplesforenterprises.org>> accessed 8 November 2021.

5 See Oslo Principles on Global Climate Obligations (n 4) 22 ff.

States and enterprises must take measures ... to ensure that the global average temperature increase never exceeds pre-industrial temperature by more than 2 degrees Celsius.

The measures must be 'based on' the Precautionary Principle. The commentary briefly explains why we have opted for 2°C.⁶ This, we believed, was those days the common understanding of the upper limit.⁷

The final text of the OP was adopted in March 2015,⁸ i.e., before the Paris Agreement⁹ (hereinafter PA) was concluded. One may wonder whether the OP have become obsolete since. I do not think so. However laudable as the very maximum that could be agreed upon in Paris, the PA sticks to Nationally Determined Contributions, i.e., goals set by the respective countries. Admittedly, the PA contains valuable guidance on the required ambitions when formulating the NDCs.¹⁰ The fact remains that even the crucial Articles 2 and 4 fall short of a binding and enforceable obligation:

Article 2

1. This Agreement ... *aims to strengthen* the global response to the threat of climate change, in the context of sustainable development and efforts to eradicate poverty, including by:

(a) Holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change. [Emphasis added].

Article 4:

1. In order to achieve the *long-term temperature goal* set out in Article 2, Parties *aim* to reach global *peaking of greenhouse gas emissions as soon as possible*, recognizing that peaking will take longer for developing country Parties, and to undertake rapid reductions thereafter in accordance with best available science, so as to achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases *in the second half of this century*, on the basis of equity, and in the context of sustainable development and efforts to eradicate poverty. [Emphasis added].

In 2015, the drafters of the PA may have believed that peaking 'as soon as possible' and to achieve net-zero emissions 'in the second half of this century' would suffice to achieve the 'goal' mentioned in Article 2 para 1 (a). Perhaps they also lived under the impression that insufficient NDCs between 2020 and 2030 could be 'offset' by more ambitious NDCs after 2030.¹¹ Developments since, discussed below, leave no room for doubt: this slow trajectory will almost certainly lead to global catastrophe. It does

6 Ibid 11.

7 Spier, *The Oslo Principles and Enterprises Principles* (n 3) 221; the group believed that this was, based on the available information, reconcilable with the precautionary principle; see Principle 6 under a.

8 *Oslo Principles on Global Climate Obligations* (n 4) 18.

9 Paris Agreement (adopted 12 December 2015, entered into force 4 November 2016) UNTC No 54113, available at <<https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>> accessed 8 November 2021.

10 See Paris Agreement Article 3 and 4.

11 Paraphrasing Halldór Thorgeirsson, 'Objective (Article 2.1)' in Daniel Klein et al. (eds), *The Paris Agreement on Climate Change* (Oxford University Press 2017) 127.

not stand a realistic chance of achieving the goal formulated in Article 2 PA. Hence, the OP have not become redundant, if not for other reasons, because they also map additional obligations.

It is of limited avail to dwell upon the key reduction obligation because, in the meantime, we have adopted a more stringent approach, as will be demonstrated below.

3.3 Principle 20

To me, Principle 20, quoted above, is of utmost importance. Strikingly, at the many presentations my learned friends and I have delivered to explain and discuss the OP, this Principle was never challenged.

For now, few countries (the commentary is less blunt; it speaks of ‘not every country’¹²) reduce their GHG emissions to the extent necessary. On paper, the laggards could be sued before their own courts or before international courts or tribunals. If litigation before international courts or tribunals ended up in victory on the plaintiffs’ side, that would be a welcome moral triumph, but it would not be very effective, seeing the difficulties of enforcing international judgments.

Hence, if complying countries would be willing to put in place ‘trade consequences’ (we meant: sanctions), a lot would be gained. Readers may wonder whether we lived in a fantasy world when drafting this Principle. They should be reminded that it was borrowed from Article 4.4 of the Montreal Protocol on Substances that Deplete the Ozone Layer.¹³

3.4 Principle 21

Fossil fuels are the main obstacle to come to grips with climate change. Surprisingly, they were and still are majorly subsidised.¹⁴ Principle 21 goes a step beyond fossil fuels by challenging subsidies, grants, guarantees, credits or insurance for unnecessarily high or unsustainable emissions caused by new or expanded facilities. If one

12 Oslo Principles on Global Climate Obligations (n 4) 77.

13 Ibid.

14 See IEA, ‘Energy subsidies, Tracking the impact of fossil-fuel subsidies’ (IEA 8 November 2021) <www.iea.org/topics/energy-subsidies> accessed 8 November 2021; Assia Elgouacem, ‘Designing fossil fuel subsidy reforms in OECD and G20 countries’ (OECD Environment Working Papers No 168, 21 October 2021) <<https://doi.org/10.1787/d888f461-en>> accessed 8 November 2021.

seriously wants to keep climate change below fatal thresholds, this is low hanging fruit, also inspired by the Montreal Protocol (Article 4.6).¹⁵

Naturally, not all states can be lumped together, as the final sentence of this Principle emphasises.

3.5 Other principles

I only referred to a few key principles. Most principles left untouched reappeared in the Principles on legal obligations of enterprises. They will be discussed in that context. That also goes for the legal basis for the OP.

4 The next step: The first edition of the Principles on Climate Obligations of Enterprises

4.1 Why a focus on the obligations of enterprises matters?

In an ideal world, politicians would agree on legal instruments containing obligations that suffice to prevent a global catastrophe. That may well happen at some stage. So far, too many politicians confine themselves to rhetoric. We cannot wait for miracles. It is high noon. That implies: we need to explore *additional* strategies.

A focus on the corporate world is important. Enterprises can influence the entire chain from suppliers to their products and services. They can – and must – phase out their own emissions. If enterprises could be brought to assume responsibility for emissions throughout their value chain, a major part of the global reductions can be achieved without action by politicians.

With an increasing number of exceptions, enterprises are unlikely to take sufficiently bold action if they are not legally bound to do so. Hence, it is important to explore whether they have legal obligations to change course.

The Expert Group on Climate Obligations of Enterprises has no doubt that they do have such obligations. If that assessment is right, the law, if necessary the sword of the law, can majorly contribute to a carbon-neutral world.

4.2 The first step

As already mentioned, the Oslo group was unable to reach an agreement on more than a few obligations of enterprises. Part of the Oslo group and two new members

15 Oslo Principles on Global Climate Obligations (n 4) 77.

(Justice Brian Preston and Daniël Witte) took up the gauntlet to draft a more elaborate roadmap: the Principles on Climate Obligations of Enterprises (EP1).¹⁶ We felt the urgent need for doing so. This decision was influenced by the hugely insufficient pledges which would end up in an increase of global temperature between 2.3 and 3.5°C and the unlikelihood that international politics will solve the problem.¹⁷

After intensive discussions, we decided not to change the 2°C threshold adopted in the OP,

an ambition around which politicians, policymakers and scientists have converged. ...

We believe that the legal maximum at the time of writing lies at 2C. Although such clearly and narrowly defined threshold may not be the best option in light of the science, it is in light of politics. It provides a clear, binding target toward which humanity can, and must, work.¹⁸

Further on, we acknowledged that the PA was more ambitious, setting the bar at ‘well below 2 degrees’. However, we were unable to ‘to discern what “well below” 2°C or “pursuing efforts to limit the temperature increase to 1.5°C” meant.¹⁹

We observed that, seeing that global emissions were still rising, ‘1.5°C will soon be out of reach.’²⁰ Promoting the unachievable might be counter-productive as it would ‘undermine the credibility or acceptance of our principles.’²¹

At the 2018 conference in Graz, I explained the key features of the EP1. It would not be overly useful to provide such an overview right now. First, I can refer to other publications.²² Secondly, and more importantly, they have become, so to speak, history.

16 Expert Group on Climate Obligations of Enterprises, *Principles on Climate Obligations of Enterprises* (Legal Perspectives for Global Challenges, 1st edn, Eleven International Publishing 2018), available at <<https://bit.ly/3vxt1cH>> accessed 3 March 2022.

17 Principles on Climate Obligations of Enterprises 1st edn (n 16) 15 and 16.

18 Ibid 23 and 52.

19 Ibid 50.

20 Ibid 51.

21 Ibid 52ff.

22 See Jaap Spier, ‘The Principles on Climate Obligations of Enterprises: An attempt to give teeth to the universally adopted view that we must keep global warming below an increase of two degrees Celsius’ (2018) 23(2) Uniform Law Review 319; Jaap Spier, ‘Legal obligations of enterprises and investors in the face of climate change’ (2018) 2 Chinese Journal of Environmental Law 99; Jaap Spier, ‘De “Principles on Climate Obligations of Enterprises”’: een zoektocht naar concrete verplichtingen van bedrijven en beleggers’ (2018) 20 Milieu & Recht 105.

5 The updated Enterprises Principles²³

Quite soon, our expert group came to believe that it would be desirable to update the EP1. Hence, we worked on an update which was published in November 2020.²⁴ The commentary to the majorly enlarged and elaborated second edition (hereinafter EP2) explains at length why that decision was taken:

- the intrusive IPCC Special Reports of 2018 and 2019
- an increasing number of unprecedented natural catastrophes
- new climate cases, reports, academic publications and
- the growing awareness that the window of time is closing.²⁵

We challenge the emerging consensus that net-zero emissions have to be achieved by 2050, on which many NDCs and corporate pledges are built. More likely than not, the global carbon budget will be depleted well before 2050.²⁶

The main differences between the EP1 and EP2 are:

- more emphasis on products and services (Principles 9-11, 19, 20, and 22). Thus, we include part of the emissions caused by the use of products and services, often by private persons
- the EP2 contain obligations on buyers of fossil fuels, outsourcing, and governance (respectively Principles 21, 23, and 24-26)
- obligations of important players have been added: (re)insurers, accountants, credit rating agents and attorneys (Principles 45-48).

The 49 Principles are accompanied by an extensive commentary that elaborates on their meaning and legal basis.

5.1 Legal basis of the EP2

The commentary provides an extensive overview of the legal underpinning of the obligations emanating from the EP2. We have borrowed from a myriad of sources: human rights, environmental, liability and company law, declarations, pledges, authoritative reports, codes of conduct and governance, case law and academic writings.²⁷ Part of these sources are ‘soft law’; the commentary explains why soft law

23 Part of the text is borrowed from a virtual Yale conference in fall 2020, organised by Thomas Pogge.

24 Principles on Climate Obligations of Enterprises 2nd edn (n 2).

25 Ibid 22ff.

26 Ibid 68f.

27 Ibid 70ff, also for a wealth of further references.

can serve as a legal underpinning.²⁸ We openly acknowledge that some principles are aspirational.²⁹

We do not only focus on the law as it ‘stands’ (which requires an interpretation of all these sources) but also on how it will likely develop. The reason for including the likely development of the law is that it will be shaped in *future* judgments. In the absence of clear and pertinent black letter law and precedents, courts tend to ‘find’ the law as they believe it stands at the time of rendering the judgment. Say: a case about injunctive relief is initiated in 2016. The highest court renders its judgment in 2022. Without much ado, the law as ‘found’ in 2022 will mostly be applied to, in my example, the emissions as from 2016, i.e., *de facto* with retroactive effect. Hence, it is important to assess how the law will likely develop.³⁰

Critics may argue that the interpretation of – in their view – non-existing law is nothing else than a political or moral judgment that should be left to the legislator. This supposed criticism confuses unchartered territory and a lawless realm. The administration of justice does not come to a standstill at the boundaries of unchartered terrain. Since time immemorial, judges have tried to keep pace with the changing demands of society. The law is a ‘living instrument’, as the European Court of Human Rights puts it.³¹ That means indeed that moral views and a desirable outcome play a role in shaping the law. That is nothing new. Do not make a mistake: conservative judgments are no less influenced by these features.

In his autobiography, the former UK Prime Minister Gordon Brown, who wrote a very supportive preface to the EP2,³² quotes Albert Camus: ‘If we were to acknowledge such things as moral values, ‘that would be the beginning of hope’.’³³

5.2 Ambition and realism

Our Principles aim to pair ambition with realism. It would have been possible to map more stringent obligations. In our assessment, that would not have been a brilliant idea. At the end of the day, each initiative aims to have an impact. Time for idle talk has elapsed. We need action, not tomorrow, but right now. That means: we need to get the ears of those at the wheel. Overly activist principles will be ignored by the corporate world, investors, politicians and courts.

28 Ibid 99ff.

29 Ibid 71 and in relation to f.i. Principle 18.4 and 18.5; they are ‘a bit aspirational, arguably on the fringe of revolutionary’ as the commentary put it. See: Principles on Climate Obligations of Enterprises 2nd edn (n 2) 211.

30 Principles on Climate Obligations of Enterprises 2nd edn (n 2) 71.

31 For the first time in *Tyler v the United Kingdom* App no 5856/72 (ECtHR, 25 April 1978).

32 Gordon Brown, *My Life, Our Times* (Vintage 2018) xvii/xviii.

33 Brown (n 32) 431.

In his auto-biography Gordon Brown discusses the only way a progressive party can succeed:

by being both radical and credible. It can be radical without being credible, but it will never be a successful party of power. It can also be credible without being radical, but it will no longer be progressive. In neither condition will it achieve anything truly worthwhile.³⁴

That is not any different for our principles.

5.3 Difficult choices

We could not escape making difficult choices. A few examples:

5.3.1 1.5, 1.75 or 2°C?

As we have seen, Article 2 para 1 of the PA mentions two targets:

holding the increase in the global average temperature to well below 2°C above pre-industrial levels and *pursuing efforts* to limit the temperature increase to 1.5°C above pre-industrial levels.

The at the time of writing latest Special Reports issued by the IPCC (2018 and 2019) leave no room for doubt:

- passing the threshold of 1.5°C is fraught with serious risks and
- an increase by 1.5°C is already too high, seeing the increasing number of ever more devastating natural catastrophes.³⁵

In our assessment, it is unrealistic to set the bar below 1.75°C.³⁶; see. It would require emission reductions at a rate that do not stand any realistic chance of acceptance.³⁷

Our approach already requires steep reductions of enterprises in most developed countries.³⁸ Enterprises keen to set the bar higher would do the world and themselves a great favour: it will greatly add to their reputation, attractiveness to the brightest people and investors. But it is not an obligation, we think. On paper, the 1.5°C is not impossible if one is willing to *bet* on future technology to capture and store GHG emissions at a major scale. We did not want to bet on technology that may not be available at a scale required to stay below 1.75°C. This approach leaves untouched the desirability to return to 1.5°C, or even less, if possible and reasonably affordable.

34 Ibid 437.

35 Principles on Climate Obligations of Enterprises 2nd edn (n 2) 141ff.

36 See for 1.75°C the definition of the Global Carbon Budget (Principle 1).

37 Principles on Climate Obligations of Enterprises 2nd edn (n 2) 142.

38 Ibid 168.

Because our update focusses on what needs to be done in the, say, 10 years to come, we did not need to discuss the more distant future.³⁹

5.3.2 Precautionary principle

Naturally, the OP and EP embrace the precautionary principle – the better safe than sorry paradigm. It has become a cornerstone of environmental law.⁴⁰

Seeing the different scenarios painted by the IPCC, a stringent interpretation of the precautionary principle may require adopting a worst-case scenario which reduces the risk of passing fatal thresholds. It is certainly not self-explanatory to adopt a scenario that entails a chance of approximately 33% that global catastrophe will set in, as the EP do in accordance with the prevailing view. Adopting a worst-case scenario would require extremely steep emission reductions in developed countries. That would not necessarily be unfair, nor make life necessarily significantly less enjoyable. It might well appeal to the most vulnerable countries and people in these countries. However, the law is not a beauty contest.

The precautionary principle can play a valuable role in the context of impact assessments, e.g., concerning the exploitation of new oil or gas fields. For the remainder, a strict application would imply formulating obligations that will never be accepted by those in a position to bring about the bitterly needed change. In this respect, we were guided by realism. Others, in particular NGOs, may make a different choice. I can only hope that they will be successful.

5.3.3 The 2050 paradigm

It rains pledges to effectuate net zero emissions by 2050, although they rarely indicate *how* they will be achieved.⁴¹ Based on extensive research mentioned in the commentary, we are afraid that the carbon budget will be depleted well before 2050.⁴² That makes net zero-pledges by 2050 no less welcome, but those who issue them should realise that there is a fair chance that they will not suffice to keep the increase of global temperature below fatal thresholds.

We are not in a position to say *when* the carbon budget will be depleted. That depends on future developments: the global reductions to be achieved, non-anthropogenic emissions, new insights from climate science and possible tipping

39 Ibid 69.

40 See OP Principle 6, EP1 Principle 2.1, referring to the OP and EP2 Principle 1 (definition of global carbon budget); see also commentary to EP2 95 ff, and 143, to EP1 59f and to OP 47 ff.

41 Principles on Climate Obligations of Enterprises 2nd edn (n 2) 102ff.

42 Ibid 68 and 154ff.

points. These uncertainties are the reason for our stance that the global carbon budget has to be reassessed every five years (Principle 2.2.1 (g)).

5.3.4 Obligations towards future generations

In the debate on sustainability issues, obligations towards future generations pop up time and time again. We do not deny at all that such obligations exist. So far, however, the debate got stuck in abstract discussions. We could not discern any concrete guidance.⁴³

In our view, we do not need obligations towards future generations to accept far-reaching obligations of all kinds of States and enterprises. Obligations towards the current generation, part of which will still be alive by the end of this century, suffice.

We believe that our Principles are on the brink of ‘the acceptable’. Mapping more stringent obligations would be counter-productive.

5.3.5 Common but differentiated responsibilities and capabilities

Throughout the Principles, we have adopted the common but differentiated responsibilities and capabilities maxim.⁴⁴ The most vulnerable countries and people in these countries are hugely affected by climate change. They minimally contributed to the global mess. Hence, it is only fair that *local* enterprises in those countries have limited obligations. See, inter alia, Principles 2.1.1 in conjunction with Principle 2.2.1 (c) and (d) and 5, as well as the interpretation of excessive emissions in Principles 9.1 and 10.1.⁴⁵

5.3.6 Attribution of emissions

Richard Heede’s research contends that well over 50% of global GHG emissions can be attributed to less than 100 companies. In his approach, all historical emissions and emissions of products or services put on the market by an enterprise have to be attributed to that company. Take fossil fuel company F. In Heede’s calculations F is responsible for the emissions from oil/gas extraction, transport, refining, and the ultimate users’ combustion of oil and gas.

43 Ibid 105.

44 See also Oslo Principles on Global Climate Obligations (n 4) 14f.

45 See Principles on Climate Obligations of Enterprises 2nd edn (n 2) 187.

Let us assume that his calculations are right (I have no reason to believe they are not). Do they carry any *legal* weight? We don't think so. In Heede's approach, the lion's share of the responsibility would fall on the shoulders of fossil fuel companies and a handful of cement factories. Many fossil fuel companies are based in countries where litigation does not stand a favourable chance; examples obtrude themselves. Even in countries with a world-class judiciary (whatever that may mean), there is no guarantee whatsoever that they will adopt Heede's approach. Hence, it is an illusion to expect that the fossil fuel industry as a whole will reduce its emissions and those of its fossil fuels to the extent required.

It would also be unfair to put all the blame on the 'oil majors'. No doubt they are happy that most countries made themselves dependent on their products and that they did not and still do not switch to alternative energy at a greater pace. Only if there would be a sound legal basis for an obligation of this branch of industry to switch from fossil fuels to renewable energy *and* to refrain from selling fossil fuels to countries that did not participate in the bitterly needed transition to renewable energy when the carbon budget is close to depletion, they would be the main culprits. There may be arguments for such a far-reaching position; it is by no means self-explanatory, to say the least. Hence, the legal basis for Heede's approach – he is not a lawyer and does not have any legal pretension – is weak.

Adopting Heede's approach would also be counter-productive. It could stimulate other enterprises to take a sit-and-wait position, arguing: we are not the problem; the fossil fuel industry is.

We believe that the better approach is to attribute GHG emissions to those who actually cause them, say, a factory burning oil or gas; an electricity company combusting fossil fuels.⁴⁶

5.4 A bird's eye view of the 49 Principles of the EP2

It is impossible to properly explain our 49 Principles and the 300 pages of the commentary in a few pages. So, I will stick to a few highlights. For the remainder, I refer to our website, which can be downloaded at no cost.

5.4.1 Reduction obligations

Formulating the key reduction obligation of enterprises was quite a brain teaser. We had to make a choice between a formula based on balancing a series of factors and a

⁴⁶ See for the issues discussed in this paragraph Principles on Climate Obligations of Enterprises 1st edn (n 16) 32ff and Principles on Climate Obligations of Enterprises 2nd edn (n 2) 60ff.

rule of thumb with some flexibility to tailor it to the peculiarities of a case in point. Prima facie, an open(-ended) formula would be the fairest option. In reality, it is very much up to debate whether that would be the case. Such a formula would not shed much light on the reductions to be achieved by an enterprise, seeing that the outcome of the balancing of the relevant factors would be rather unpredictable. Put differently: adopting such a formula would mean a clash between (legal) certainty and a fair outcome, assuming that the outcome would ultimately be (considered) fair.⁴⁷

The urgent need to reduce global emissions at a great pace and to a significant extent is irreconcilable with unworkable formula. Hence, we had to explore other options. The best we could think of was to link the primary reduction obligation of enterprises to the reductions to be achieved by the States in which they operate. The idea behind this approach is that countries cannot achieve their reductions if the corporate world does not assume responsibility for their share (see Principle 2.1.1). Because we were mindful that this might be unfair in specific cases, e.g., if an enterprise had already reduced its GHG emissions significantly, States should be allowed to reallocate the reduction burden within their countries, say enterprise X has to do more and Y less. Also, to incentivise States to comply with their own reduction obligations, it makes sense to create more flexibility for States that comply with their own obligations (Principle 3) compared to non-complying States (Principle 4). In any case, the reallocating State has to consider a series of factors enumerated in Principle 3.1.⁴⁸

Because our EP are not ‘law’, it is unlikely that any State will make use of Principle 3 or 4 in the near future. EP2 has added some room for self-determination by an enterprise that wants to challenge the rule of thumb. Naturally, this flexibility should be restricted. Otherwise, we would undermine the rule of thumb and, by the same token, any chance to achieve the required global emissions. Self-determination requires a stringent application of Principle 3.1 if the enterprise is based in a complying country and application of the rule of thumb should be manifestly unreasonable if the enterprise is based in a non-complying country (respectively Principles 3.3.1⁴⁹ and 4.3.1).⁵⁰

I already alluded that the EP link the reduction obligations of enterprises to the country in which they are based. The EP2 not insignificantly reformulated the reduction obligation of States compared to the OP. The new formula consists of several steps:

47 Principles on Climate Obligations of Enterprises 2nd edn (n 2) 152.

48 Ibid 171ff.

49 Ibid 174ff.

50 Ibid 180.

- 1) to determine the global carbon budget (GCB)⁵¹ to ensure that the 1.75°C threshold will not be exceeded. The GCB includes both anthropogenic and non-anthropogenic GHGs (see definition in Principle 1 and Principle 2.2.1 (a));
- 2) to calculate the GCB per capita, i.e., per head of the world's population (Principle 2.2.1 (a));
- 3) to calculate the permissible quantum of GHG emissions per capita per period of five years. This should be based on 'a glidepath of steady reductions towards net zero emissions without exceeding the' GCB (Principle 2.2.1 (b));⁵²
- 4) if a country's GHG emissions per capita are below the permissible quantum⁵³ for the relevant five years period, it has to reduce its GHG emissions at the rate of its NDCs (Principle 2.2.1 (c));
- 5) if a country's GHG emissions are higher than the permissible quantum for the relevant five years period, it has to reduce its GHG emissions to the higher of
 - the extent to which they exceed the permissible quantum per capita⁵⁴ or
 - the rate of its NDCs (Principle 2.2.1 (d)). Applying this formula may look difficult, it is workable. The commentary explains that the relevant information is available.⁵⁵

We did a reality check to figure out whether our approach would be unfair in relation to one or more countries. With the exception of Iraq, we do not think that to be the case, although we acknowledge that this Principle is demanding for many countries.⁵⁶

We strongly believe that it would be unfair to lump together a domestic enterprise and a subsidiary of a multinational in, say, Bangladesh. Principle 5, which is about what we have labelled global enterprises, aims to offer a balanced solution. I refer to this Principle and the commentary thereto, emphasising that many in-depth discussions – in particular with our South African member Philip Sutherland – lie at the basis of this Principle in EP1. My associate reporter Bastiaan Kock and I spent several days on a reformulation in EP2,⁵⁷ which was discussed with Brian Preston and accepted by the other members.

In addition to their key reduction obligation, discussed above, enterprises have to take reduction measures that can be achieved without incurring relevant additional costs, f.i., switching from fossil fuel energy sources to renewable energy if the price

51 The commentary to the 2nd edition of the Principles on Climate Obligations of Enterprises explains that the IPCC findings are to be used to determine the carbon budget, albeit that they may be challenged, see Principles on Climate Obligations of Enterprises 2nd edn (n 2) 139.

52 See for a graphic illustration of the glidepath Principles on Climate Obligations of Enterprises 2nd edn (n 2) 166.

53 In most instances developing countries.

54 The formula is a bit more sophisticated; see Principle 2.2.1 (d).

55 Principles on Climate Obligations of Enterprises 2nd edn (n 2) 138ff.

56 Ibid 168.

57 Ibid 180ff and Principles on Climate Obligations of Enterprises 1st edn (n 16) 129ff.

is by and large the same, or switching off lamps and heating if an office is not in use (Principle 7).

Measures that incur costs have to be taken if the costs will beyond reasonable doubt be offset by future savings or gains within a reasonable time period (Principle 8).⁵⁸ The installation of f.i. solar panels may serve as an example if an enterprise would otherwise be dependent on energy from fossil fuels.⁵⁹

5.4.2 Products, services, advertising products, enticing consumers, supermarket chains and internet selling

It would be against the odds if all – arguably even most – States and enterprises are going to curb their GHG emissions to the extent required to keep climate change below 1.75°C or any other meaningful threshold. In addition, many uncertainties make it likely that the carbon budget will be depleted at a greater pace than many seem to believe. That means that we should not confine ourselves to the *direct* emissions of enterprises.

The update puts significant emphasis on suppliers, products and services in line with the strongly emerging view that enterprises bear at least some responsibility for scope 2 and scope 3 emissions.⁶⁰ By including these issues, the update encompasses a much broader range of emissions, in particular those of consumers. That is important because it would be quite a challenge to formulate convincing legal obligations of private persons. Even if that would be possible, enforcement would be fraught with serious difficulties. The emissions of consumers have to be regulated by States which emphasises the importance of the OP.

Excessive emissions of products and services must be avoided unless countervailing measures are taken. As a rule, emissions will be deemed excessive

- if they are much higher than those of the enterprise's competitors;
- if the cost of taking countervailing measures could reasonably be offset by increasing the price of the products or services; or
- if the profits generated by the products or services easily allow for taking these measures.⁶¹

Principle 10.2-10.4 distinguishes between indispensable, non-luxury and non-indispensable products and services and luxury products and services, in that the reduction bar is set increasingly higher. Local circumstances have to be taken into

58 Principles 7 and 8 are also incorporated in the Oslo Principles (Principles 7 and 9).

59 Principles on Climate Obligations of Enterprises 1st edn (n 16) 140.

60 Principles on Climate Obligations of Enterprises 2nd edn (n 2) 47 ff.

61 Principles 10 and 11, also for further elaboration.

account when interpreting ‘luxury’ and ‘indispensable’; that is not easy to explain to poor people in developing countries; it is a sad reality in our wicked world.⁶²

5.4.3 Advertising products and enticing consumers, supermarket chains and internet selling

A focus on advertising products, enticing consumers, supermarket chains and internet selling (Principles 19, 20, and 22) is another means to achieve a greater reach of our Principles.

This approach allows cautiously emphasising the urgent need to reduce the sale of products and services with a high carbon footprint, such as f.i. meat and chocolate. According to the commentary, offering chocolates ‘two for the price of one’ requires a justification. Restaurants should refrain from offering excessively sized beef steaks on the menu (they may offer them on demand).⁶³

As to supermarkets, we also mention soya or palm oil from logged tropical wood.⁶⁴ We did not dare to say that the sale of meat must be phased out, if not for other reasons, because our EP aim to have a global reach. There may not (yet) be viable alternatives to meat in quite a few countries.

Transport is an important source of GHG emissions. Principle 22.2 formulates an obligation to inform the prospective buyer about the GHG emissions of the home-delivery options and to promote the least emitting mode of transport. It is inspired by an article in the Financial Times: Amazon’s carbon footprint allegedly nears the footprint of Denmark.⁶⁵

5.4.4 Consideration of suppliers’ GHG emissions

When selecting its suppliers, an enterprise has, to the extent reasonable and feasible, to ascertain and take into account whether its suppliers comply with the Principles (Principle 18.1). Ascertain and taking into account is more than ticking the box. If, f.i., a supplier’s emissions are significantly higher than those of its competitor, the selection of the former requires extensive justification. The mere fact that the preferred supplier is cheaper should not serve as a justification. Obviously, this Principle and all other Principles should be applied with common sense. It does not apply to f.i. buying relatively cheap products in very small quantities.⁶⁶

62 Principles on Climate Obligations of Enterprises 2nd edn (n 2) 188.

63 Ibid 212ff, and for the example 214.

64 Principles on Climate Obligations of Enterprises 2nd edn (n 2) 217.

65 Ibid 218.

66 Ibid 209f.

We do not hide that ascertain and take into account whether one's prospective suppliers comply with our Principles is an overstatement because our Principles are not 'law', but our group's *interpretation* of the law. Naturally, enterprises may challenge our interpretation. In that scenario, they have to explain (would be well-advised to explain) what, in their view, the suppliers' legal obligations are. In that scenario, the suppliers have to comply with these 'alternative' obligations.⁶⁷

The selection of a supplier that provides energy from coal-fired power plants, or other excessively GHG emitting fossil fuels, requires a compelling justification (Principle 18.2). It will be very difficult to justify such a choice.

5.4.5 Fossil fuel companies

I reiterate that we challenge the emerging view that the oil majors are, so to speak, the *one and only* problem. In our view, the more promising approach is to focus on the obligations of *all enterprises*, including specifically, buyers of fossil fuels.⁶⁸ According to Principle 21.1, purchasing coal for production purposes requires a compelling justification. An enterprise is only allowed to increase its purchasing of coal or oil for the purpose of increasing production during respectively the shortest possible period to allow the materialisation of its transition to renewable energy (in case of coal), or to gas or renewable energy (in case of oil) (Principle 21.2 and 21.3). As time progresses, the same will go for gas.

5.4.6 Governance

Governance is an important feature. The update introduces a series of principles to the effect that the board of enterprises has to take appropriate steps to cope with the challenges of climate change, both for the enterprise and the world at large.

The board should ensure that it has access to sufficient knowledge, skills, and experience to effectively debate and decide on climate-related risks and opportunities (Principle 24). This includes knowledge of the enterprise's legal obligations in the face of climate change.⁶⁹ That does not mean that our Principles have to be applied. However, the board should genuinely aim to discern the enterprise's legal obligations. If the answer to their questions would be: enterprises do not have legal obligations, they should make further inquiries. If the answer to this further inquiry is: we

67 Ibid 109 and 286.

68 Ibid 215, pointing to comparable obligations in Principle 7 if alternatives are available at no relevant additional costs, 8, 9 and indirectly 18 and 19.1.

69 Principles on Climate Obligations of Enterprises 2nd edn (n 2) 228.

do not know, the board should go at pains to find experts who have a keen understanding of the law.⁷⁰

As a rule, and whatever the legal opinion tells them, the boards of most enterprises should understand that, at the very least, they should reduce their GHG emissions at a significantly higher rate.

In addition, the board should ensure, among other issues, that:

- the management assesses on an ongoing basis the short-, medium- and long-term materiality of climate change-related risks to the enterprise;
- the enterprise's climate change-related accounting assumptions and reporting procedures are robustly tested; and
- the enterprise does not engage in lobbying irreconcilable with keeping the increase in global average temperature below 1.75°C (Principle 25).

The board shall ensure that executive incentives, such as bonuses, are not linked to profits generated from or otherwise linked to activities or actions that are irreconcilable with keeping global warming below 1.75°C (Principle 26).

5.4.7 Disclosure

Principles 27-34 contain obligations in the realm of disclosure. With one exception, they align with, *inter alia*, the authoritative TCFD report. We have added the need to provide information about compliance with the EP, or, perhaps I should say, the enterprise's legal obligations (Principle 29).⁷¹ I will come back to this issue in the context of Principle 46.

5.4.8 Environmental impact assessment of new facilities

Environmental impact assessments of new facilities are increasingly becoming a weapon in the fight against climate change. It is one of the few realms of the law where courts in several countries have shown willingness to assume a role to stem the tide.⁷² Among the issues to be assessed are

- the proposed facilities' carbon footprint;
- the adverse upstream and downstream effects and the ways to reduce such effects; and
- the potential effect that future climate change may have on the proposed facility (Principle 35).

⁷⁰ Ibid 229.

⁷¹ Ibid 243.

⁷² Ibid 251 and Principles on Climate Obligations of Enterprises 1st edn (n 16) 192ff.

The mere fact that the carbon footprint of a new facility likely is quite significant does not necessarily mean that there is no room for the new facility. New runways or airports are the perfect examples. One may regret that some courts shy away from giving decisive weight to the adverse carbon footprint,⁷³ courts cannot avoid operating within the boundaries of what society finds acceptable.

5.4.9 Financiers

Financiers must ascertain and take into account the GHG emissions of any project that they consider financing and the likelihood of the borrower's ability to repay the loan granted in light of the risks posed to the project by climate change and the liability risk posed to the enterprise (Principle 36). The commentary emphasises that this Principle also applies to f.i. pension funds that finance projects.⁷⁴

'Risks posed by climate change' refers, f.i., to houses built in a flood-prone area. The liability risk refers to non-compliance by the borrower with its climate obligations.⁷⁵

5.4.10 Investors

Our Principles about the obligations of investors focus on all kinds of equity, irrespective of whether it is issued by a State or an enterprise.⁷⁶

Investors belong to the very few institutions that can effectively influence the behaviour of both States and enterprises to scale up their efforts to avoid catastrophic climate change. That is commonly accepted concerning enterprises. To the extent I am aware of, it is not in relation to States. It is not easy to understand why that is the case because many investors, by no means only pension funds and insurers, have bought significant amounts of bonds issued by States. To the extent reasonably pos-

73 See e.g., *R (on the application of Friends of the Earth Ltd and Others) v Heathrow Airport Limited* (2020) UKSC 52, available at <www.supremecourt.uk/cases/uksc-2020-0042.html> accessed 8 November 2021; Austrian Bundesverwaltungsgericht (the Highest Administrative Court) 2 February 2017 W109 2000179-1/291E <blogs2.law.columbia.edu/climate-change-litigation/wp-content/uploads/sites/16/non-us-case-documents/2017/20170202_W109-2000179-1291E_decision-2.pdf> accessed 9 November 2021.

74 Principles on Climate Obligations of Enterprises 2nd edn (n 2) 258.

75 Ibid 261.

76 Ibid 267 and explicitly Principles 37.1, and 38.1.

sible, they could – and should – use their power as a bondholder,⁷⁷ or refrain from buying bonds of poorly performing States.

Investors' unwillingness to buy equity – bonds or shares – may have an adverse impact on the issuer's reputation. That being said, investors face an inconvenient truth. Assuming that our OP and EP are, by and large, right in discerning the legal obligations of States and enterprises, for the time being, only a few States and enterprises comply with their obligations. Hence, if investors would only be allowed to buy equity issued by compliers, they would have to compete in buying the relevant shares or bonds. The prices would unavoidably be(come) extremely high. Many investors, in particular pension funds and (re)insurers, need a return on invested capital to pay the pensions of their insureds or to remain solvent. If the equity would be hugely overpriced, they cannot generate any meaningful return. We could not close our eyes to this state of affairs. This meant that we could not avoid a delicate balancing of the diverging interests.⁷⁸

In our assessment, any investor must ascertain and take into account whether or not the entity in which it aims to invest or has already invested complies with its obligations under the Principles (Principle 37.1). I refer to what I already observed about our Principles not being 'law'. Investment in a *non-complying entity* requires a justification (Principle 38.1). Because there are not many fully complying entities, in the short term, it will not be overly difficult to justify such an investment. If investors have the choice between non-complying entities, they should opt for the best in class, or, at least, refrain from buying the worst in class.⁷⁹

It belabours the obvious that investment in coal-fired power plants, enterprises engaged in energy generation from other excessively emitting fossil fuels, or in otherwise excessively GHG emitting enterprises requires a compelling justification (Principle 39). The meaning of 'excessive' will change over time. It will probably be different in developed and developing countries.

Keeping or buying equity issued by non-compliers requires action: forcefully promoting compliance with their obligations (Principle 40).

We have resisted the strongly emerging current: promoting to refrain from investing in fossil fuel companies. We appreciate the moral connotation of the debate but wonder whether non-investment will make much of a difference. We also acknowledge the possibility, which will hopefully become a reality soon, that such investments are doomed to become stranded (for practical purposes: the value will collapse due to the alleged swiftly decreasing demand). The stranded asset question

77 In many (probably most) countries bondholders do not have much, if any, 'formal' power to influence the actions of the issuers of the bonds. Informally, major bondholders do have because issuers cannot avoid to lend their ears to concerns aired by major investors.

78 See in much more detail Principles on Climate Obligations of Enterprises 1st edn (n 16) 205ff and Principles on Climate Obligations of Enterprises 2nd edn (n 2) 262ff.

79 Principles on Climate Obligations of Enterprises 2nd edn (n 2) 270.

is not a legal issue; it depends on how the sale of fossil fuels will proceed and at what price. That is very uncertain; we did not want to speculate on that issue. All we are saying is: the alleged prospect of stranded assets could be a sound reason for not buying this kind of equity.⁸⁰

On the occasion of several presentations of the EP, our principles on the obligations of investors were criticised for being conservative. We beg to differ. The legal debate is about questions such as:

- are investors allowed to take sustainability issues into account?
- should they only care about return on capital?⁸¹

We answer both questions in the affirmative and go way beyond these issues. Hence, I don't think that our approach is conservative. We did not want to overstate our case and preferred to be realistic.

Major investors should appoint, vote for, or, if they are appointed by others, promote the appointment of auditors familiar with, among other issues, the legal obligations of enterprises and their boards (Principle 41.1). Investors shall vote against, or, if they are appointed by others, promote non-appointment of directors to the board of a non-complying enterprise (Principle 41.2).⁸²

5.4.11 Other key players: common denominator

Seeing the apathy of the greater part of the corporate world, we must explore strategies to bring the boards of enterprises to their senses, if necessary in a case in point. Accountants, credit rating agents, insurers and attorneys *can and have* to play a role to stem the tide.⁸³

All these entities cannot do a proper job if they do not have a clue about the obligations of the enterprises they have to audit, rate, advice, or insure. Without a keen understanding of the enterprises' legal obligations, insurers, accountants and rating agencies cannot assess the inherent liability and reputational risks of non-compliance.

Auditors and credit rating agents do not only have fiduciary obligations towards their clients but, in our view, also to those who – as they know or should know – rely on their opinions and reports. Insurers have an obligation to their insureds: to pay the amounts insured if the insured risk materialises. That implies that they have to ensure to keep solvent.

80 Principles on Climate Obligations of Enterprises 1st edn (n 16) 236 and Principles on Climate Obligations of Enterprises 2nd edn (n 2) 272; see also Spier, *The Principles on Climate Obligations of Enterprises* (n 22) 331.

81 Principles on Climate Obligations of Enterprises 1st edn (n 16) 218ff.

82 See for elaboration, Principles on Climate Obligations of Enterprises 2nd edn (n 2) 273ff.

83 *Ibid* 278.

According to the update, *credit rating agents* and *accountants* must assess whether the rated or audited enterprises comply with their legal obligations. If they do not, the inherent liability (and reputational) risk has to be assessed. The outcome of the assessment must be reflected in the rating or accountant reports, along with a transparent explanation of the way the assessment was executed (Principles 46 and 47).

We believe that *liability insurance for climate-related losses* has to be significantly restricted (Principle 45). That would majorly contribute to lower GHG emissions because it would bring enterprises and their boards to their senses. We do not express a view on other coverages.⁸⁴

Attorneys have to investigate the material climate change consequences of any activity in which they are engaged and inform their clients about these consequences (Principle 48). If enterprises seek a legal opinion about their legal obligations, attorneys have to provide a state-of-the-art answer. That requires a keen understanding of the relevant realms of the law.⁸⁵

There is much reason to believe that most of these entities do not have the required knowledge and do not want to have it either. Hence, they expose themselves to liability. Apart from hopefully a deterrent effect, their liability is of no avail to the climate. The more important issue is that they comply with their fiduciary duties.

5.4.12 EP are not ‘law’

Our update aims to provide guidance about key obligations of enterprises and other entities. I reiterate that our Principles are not ‘law’. Accountants et alios may arrive at the conclusion that, in their assessment, ‘the law’ is different in one or more respects. It would, however, be irresponsible towards their clients, society and themselves to assume that, in the absence of pertinent black letter law, enterprises do not have (enforceable) obligations.⁸⁶

The ‘nicety’ of climate change as a global issue is that enterprises and the other players I have mentioned can often be sued before courts in multiple countries. Betting on a global judiciary that will abstain from rendering useful judgments is a very risky game.

84 Ibid 283.

85 Ibid 287.

86 Ibid 109f.

5.4.13 Obligations to reduce GHG emissions apply, even if minimal

Enterprises and States unwilling to accept that they have legal obligations may hope that courts will grant victory to them, seeing their (very) small contribution to global climate change.⁸⁷ From a doctrinal angle, this minimal contribution-issue is not unproblematic. It is, however, even more problematic to honour a defence based on the absence of legally relevant causation. If that argument would have to be honoured, only the emissions of a very few States would – perhaps – qualify as legally relevant. That would mean that climate change would basically be a lawless realm. Both the OP (Principle 11), the EP1 (Principle 14) and EP2 (Principle 15) take the view that minimal causation is not a defence. The idea that the law is toothless in relation to the greatest challenge to mankind, the environment and other living species is so appalling that it is unavoidable to explore solutions, if necessary, by means of magic words.⁸⁸

5.5 Other principles

The OP contains principles on flexibility on how to comply with the State's obligation (Principle 10), high cost or lack of financial means is not a defence (Principle 23), and the need to regulate GHG emissions to comply with the OP (Principle 24).

Both the OP and both versions of the EP contain provisions on how to deal with less demanding domestic or international legislation (OP Principle 12, EP2 Principle 16), undue hardship (OP Principle 17, EP2 Principle 17), and measures to be taken if the reductions cannot be achieved (OP Principle 18, and 22, and EP 2 Principles 13 and 14). EP2 also provides obligations concerning controlling enterprises (Principle 6), and outsourcing (Principle 23).

5.6 The reception of the EP

Authoritative reports, such as David Boyd's brilliant *Safe Climate*,⁸⁹ refer to the EP1. The EP1 and the EP2 are endorsed by over 80 distinguished experts from around the globe. Eminent experts kindly wrote prefaces to the EP2 (the former UK Prime Min-

87 Only the emissions of a handful of States have measurable impact on the climate.

88 See in considerable detail Oslo Principles on Global Climate Obligations (n 4) 69f, Principles on Climate Obligations of Enterprises 1st edn (n 16) 153ff and Principles on Climate Obligations of Enterprises 2nd edn (n 2) 202ff, also for further references.

89 Office of the High Commissioner, 'Safe climate report' (United Nations Human Rights 2019) <www.ohchr.org/EN/Issues/Environment/SREnvironment/Pages/SafeClimate.aspx> accessed 9 November 2021.

ister Gordon Brown, a former executive director of the Bank of England (Paul Fisher), the former President of the East African Court of Justice Emmanuel Ugirashebutja, a former Supreme Court Justice (Lord Robert Carnwath), Luc Lavrysen, at the time of his endorsement Justice in the Belgian Constitutional Court, currently President of the EU Forum of Judges for the Environment, David Pitt Watson, former Chair of UN Environment Finance Initiative and last but not least the driving force behind the Global Pact for the Environment Yann Aguila. Our website is visited daily by people from around the globe (from all European, almost all Asian, Latin American, and many African countries, the US, Canada, Australia and New Zealand). Some international law firms explicitly refer to our Principles on their websites and otherwise.

See for details about members, the endorsers of the EP1 and EP2, the prefaces, and news our website mentioned in footnote 4.

6 Finally

Evil progresses cunningly. (...) It is necessary to intervene before it is too late. A conscience must exist somewhere which will sound the alarm ... to warn of the peril and to show [those at the wheel] that they are progressing down a long road that leads far (...).⁹⁰

For now, it is still possible to ward off global catastrophe.⁹¹ We are, however, in the face of the Apocalypse. And we know it. Time for prattle, for insufficient action, for vague and undetermined promises about future action has elapsed. We must discuss what needs to be done globally to keep the increase of global temperature below a fatal threshold, be it 1.5, or 1.75°C and what must be done by whom and to act accordingly, of course. That message is unwelcome but no less important.

Although my learned friends and I hope that our Principles will serve as guidance for what needs to be done by whom, we appreciate that they are not perfect. At the very least, we need an in-depth discussion on allocating *sufficient* measures to get the job done. This should be done at a great pace. That is what we owe to nature, future generations, the most vulnerable countries, and people and the present youth.

90 Pierre-Henri Teitgen, those days the French Minister of Justice, quoted by: Rick Lawson, 'Het EVRM als motor voor verandering' (2021) *Nederlands Tijdschrift voor de Mensenrechten* 10; I have deliberately deleted the most ominous parts of the quote.

91 See e.g., Simon Dietz et al., 'The economics of 1.5°C climate change' (2018) 43 *Annual Review of Environment and Resources* 455, available at <<https://bit.ly/36RRyyW>> accessed 28 March 2022; Ruth DeFries et al., 'The missing economic risk in assessments of climate change impacts, policy insight September 2019' (Grantham Research Institute on Climate Change and the Environment, The Earth Institute Columbia University, Potsdam Institute for Climate Impact Research 2019) <<https://bit.ly/3KdoNLB>> accessed 8 November 2021.

Bibliography

- Brown G, *My life, our times* (Vintage 2018).
- Elgouacem A, 'Designing fossil fuel subsidy reforms in OECD and G20 countries' (OECD Environment Working Papers No 168, 21 October 2021) <<https://doi.org/10.1787/d888f461-en>> accessed 8 November 2021.
- Expert Group on Global Climate Obligations, *Oslo Principles on Global Climate Obligations* (Legal Perspectives for Global Challenges no 3, Eleven International Publishing 2015), available at <<https://climateprinciplesforenterprises.files.wordpress.com/2021/01/epwebpdf2.pdf>> accessed 8 November 2021.
- Expert Group on Climate Obligations of Enterprises, *Principles on Climate Obligations of Enterprises* (Legal Perspectives for Global Challenges, 1st edn, Eleven International Publishing 2018) <<https://climateprinciplesforenterprises.files.wordpress.com/2017/12/enterprisesprincipleswebpdf.pdf>> accessed 8 November 2021.
- Expert Group on Global Climate Change edited by Jaap Spier, *Principles on Climate Obligations of Enterprises* (Legal Perspectives for Global Challenges no 5, 2nd edn, Eleven International Publishing 2020), available at <https://climateprinciplesforenterprises.org/> accessed 8 November 2021.
- DeFries R et al., 'The missing economic risk in assessments of climate change impacts. Policy insight September 2019' (Grantham Research Institute on Climate Change and the Environment, The Earth Institute Columbia University, Potsdam Institute for Climate Impact Research 2019) <www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2019/09/The-missing-economic-risks-in-assessments-of-climate-change-impacts-1.pdf> accessed 8 November 2021.
- Dietz S et al., 'The economics of 1.5°C climate change' (2018) 43 Annual Review of Environment and Resources 455, available at <www.annualreviews.org/doi/citedby/10.1146/annurev-environ-102017-025817> accessed 9 November 2021.
- IEA, 'Energy subsidies, tracking the impact of fossil-fuel subsidies' (IEA 8 November 2021) <www.iea.org/topics/energy-subsidies> accessed 8 November 2021.
- Lawson R, 'Het EVRM als motor voor verandering' (2021) Nederlands Tijdschrift voor de Mensenrechten 10.
- Spier J, 'The Oslo Principles and the Enterprises Principles: Legal strategies to come to grips with climate change' (2017) 8(2) JETL 218.
- , 'De "Principles on Climate Obligations of Enterprises": een zoektocht naar concrete verplichtingen van bedrijven en beleggers' (2018) 20 Milieu & Recht 105.
- , 'Legal Obligations of Enterprises and Investors in the face of climate change' (2018) 2 Chinese Journal of Environmental Law 99.
- , 'Pogingen om het debat over klimaatverandering handen en voeten te geven: De Oslo Principles en de Principles on Climate Obligations of Enterprises' (2018) 6 Tijdschrift voor Milieurecht 632.
- , 'The Principles on Climate Obligations of Enterprises: An attempt to give teeth to the universally adopted view that we must keep global warming below an increase of two degrees Celsius' (2018) 23(2) Uniform Law Review 319.
- Sutherland P, 'Obligations to reduce emissions: From the Oslo Principles to Enterprises' (2017) 11(2) JETL 177.
- Thorgeirsson H, 'Objective (Article 2.1)' in Klein D et al. (eds), *The Paris Agreement on Climate Change* (Oxford University Press 2017).

Cases

European Court of Human Rights

Tyrer v the United Kingdom App no 5856/72 (ECtHR, 25 April 1978).

Austria

Austrian Bundesverwaltungsgericht 2 February 2017 W109 2000179-1/291E, available at <blogs2.law.columbia.edu/climate-change-litigation/wp-content/uploads/sites/16/non-us-case-documents/2017/20170202_W109-2000179-1291E_decision-2.pdf> accessed 9 November 2021.

United Kingdom

R (on the application of Friends of the Earth Ltd and Others) v Heathrow Airport Limited (2020) UKSC 52, available at <www.supremecourt.uk/cases/uksc-2020-0042.html> accessed 8 November 2021.

China's climate change law: History, current situation, and key issues

Zhou Ke

Abstract

The international obligations assumed by China and the special circumstances pertaining to the various stages of the country's development have determined the evolution of China's climate change law. Owing to the lack of basic or comprehensive legislation and the failure to establish a complete legislative system, China's climate change law and the institutions responsible for its construction are still in their early stages of development. Although many ministerial and departmental regulations have been implemented, there is still an urgent need for basic or comprehensive legislation to be introduced. At the institutional level, China still has much work to do in terms of the development of key systems, including the carbon emissions trading system. Going forward, it is critical for China to develop a special 'climate change response law' to improve the carbon emissions trading system, among other relevant systems.

1 Introduction

The Paris Agreement came into effect on November 4, 2016, setting in motion the implementation of the international community's 'bottom-up' responsibility-sharing framework, as introduced under the Durban-Paris process. In terms of the arrangements under the Paris Agreement, each party is required to determine its 'Intended Nationally Determined Contributions' (INDC) according to its own capabilities and national circumstances. China submitted its INDC to the Conference of the Parties on June 30, 2015, setting out its action targets for 2020 and 2030. China's INDC stated that: carbon dioxide emissions would peak in around 2030; carbon dioxide emissions (per unit of GDP) had dropped by 60-65%, compared with 2005 levels; non-fossil fuel energy accounted for approximately 20% of primary energy consumption; and forest stock volume had increased by 4.5 billion cubic metres compared with 2005 calculations.¹

To realise the objectives underpinning its INDC and to ensure the implementation of relevant policies and measures, China urgently needs to establish a complete set of legal and institutional systems to address climate change. On the one hand, this can trigger actions in line with the plans outlined in legislation and with the rule of law,

1 For China's INDC see <<https://bit.ly/3JLuLmY>> accessed 28 March 2022.

thus making various obligations explicit. On the other hand, it can also be helpful in mobilising domestic support and defining expectations, thus advocating stronger protection against climate change.

2 Review of the development of China's climate change law

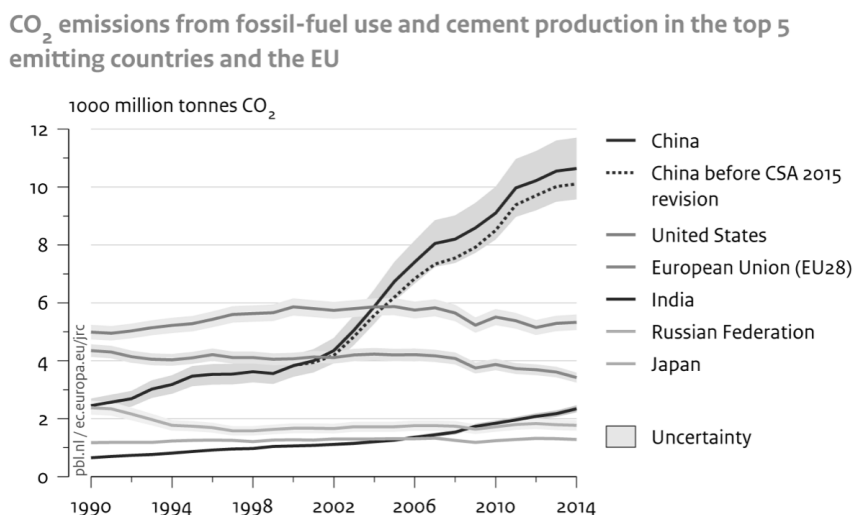
The development of China's climate change law is the result of the international obligations assumed by China and the special circumstances surrounding the various stages of China's development. Although the United Nations Framework Convention on Climate Change (UNFCCC) (hereinafter referred to as 'the Convention') has been in force for more than 20 years, the law and institutional structures supporting China's climate change policies are still in their early stages of development.

2.1 Prior to 2007

China signed the Convention as early as June 11, 1992 and ratified it on May 7, 1993.² However, China did not immediately start to construct laws and systems for the purpose of implementing the Convention. There were two main reasons for this. Firstly, from an external or international perspective, China had no substantive international obligations. In accordance with the Convention and the subsequent Kyoto Protocol, China, as a developing country party, did not assume quantifiable emissions reduction obligations. China only undertook to implement formal measures such as the formulation of national programmes and the strengthening of scientific research cooperation and capacity building, among others. Secondly, from an internal or domestic perspective, China's carbon emission flux was at a low and relatively stable level before 2002; hence, objectively, it was not necessary to start carbon emissions control (see Figure 1 below).

2 See <<https://unfccc.int/node/180417>> accessed 18 March 2022.

Figure 1: CO₂ emissions from fossil-fuel use and cement production in the top five emitting countries and the EU³



Therefore, China did not establish any systematic law or construct related systems prior to 2007. This was only done in accordance with the obligations of the Convention and the objectives to control domestic air pollution and other preliminary measures, as provided for under the Convention. Among these preliminary measures were the ‘Interim Measures for the Administration on External Cooperation of the Joint Implementation of Activities Projects in the Pilot Phase during China’s Implementing the United Nations Framework Convention on Climate Change’ (which has since expired), a regulation issued by the National Science and Technology Commission, the Ministry of Foreign Affairs, the State Planning Commission and China Meteorological Administration in 1997. These interim measures were typically designed to regulate cooperation pertaining to ‘the Joint Implementation of Activities Projects in the Pilot Phase’ between developed countries and China, which ensured the additional reduction in emissions, funding and other factors, with the approval of the two governments involved. Other preliminary measures included a series of policies and laws on renewable energy which have been introduced in China since 1990. For example, in 1995, the former National Science and Technology Commission, the State Planning Commission and the Economic and Trade Commission jointly formu-

3 PBL Netherlands Environmental Assessment Agency, ‘Trends in global CO₂ emissions’ <<https://www.pbl.nl/en/publications/trends-in-global-co2-emissions-2015-report>> accessed 3 March 2022.

lated China's 'New Energy and Renewable Energy Development Program (1996-2010)' and the 'New Energy and Renewable Energy Priority Development Projects'. After a lengthy period of preparation, the Standing Committee of the National People's Congress adopted the Renewable Energy Law on February 28, 2005.

2.2 2007 to 2011

As can be seen from Figure 1, after 2002 China's economy began to develop rapidly and carbon emissions increased dramatically. This resulted in China facing increasing pressure in international negotiations. Developed country parties urgently requested a change in the pattern of unilateral commitments by developed country parties, which ultimately led to the United States withdrawing from the Kyoto Protocol. In this regard, the Conference of the Parties adopted the Bali Action Plan in 2007, which – based on the Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol (AWGKP) – set up the Ad Hoc Working Group on Long-term Cooperative Action under the Convention (AWG-LCA), responsible for negotiating the specific obligations of all states to implement the Convention. In addition, the Bali Action Plan required developing country parties to adopt 'Nationally Appropriate Mitigation Actions (NAMAs)', which broke down the original responsibility-sharing model (developed countries would carry all responsibilities and developing countries would carry fewer responsibilities), laying the foundation for all parties to assume obligations.

In the above circumstances, China set out to start some preparatory work on the legal and institutional aspects. Organisationally, in June 2007 the State Council set up a national leading group responsible for responding to climate change, specifically energy saving and emissions reduction. Likewise, the State Forestry Administration, Ministry of Agriculture and State Oceanic Administration subsequently established leading groups on climate change. From a legal perspective, on August 27, 2009, the Standing Committee of the National People's Congress adopted the 'Resolution of the Standing Committee of the National People's Congress on Actively Responding to Climate Change', which proposed strengthening the legalities surrounding climate change protection, implementing relevant laws and enacting laws according to what was occurring at that time. In terms of administrative regulations, the State Council issued 'China's National Climate Change Program' in June 2007 (which has since expired), setting out specific targets, basic principles, key areas, policies and measures relating to China's response to climate change until 2010. In terms of ministerial or departmental rules, the relevant departments of the State Council had thus begun to act.

The Ministry of Agriculture carried out projects using international financial assistance; the Ministry of Science and Technology, the National Development and Re-

form Commission and the Ministry of Foreign Affairs issued 'China's Scientific and Technological Action on Climate Change'; the China Association for Science and Technology and China Meteorological Administration issued the 'Circular on Further Strengthening the Scientific Propaganda Work of Meteorological Disaster Prevention and Mitigation and Climate Change' in 2007; the State Oceanic Administration issued 'Opinions of the State Oceanic Administration on the Respond Work Related to Marine Climate Change'; and the National Development and Reform Commission formulated the 'Interim Measures for the Management of Foreign Co-operation in the Field of Climate Change' in 2010.

Overall, China's focus at that stage was on macro-organisation and plans and preparations for specific areas, such as finance, technology and adaptation, without addressing substantive issues pertaining to carbon emissions control.

2.3 From 2011 until now

The Durban Conference in 2011 ended the 'two-track' negotiation mechanism and established the Ad Hoc Working Group on the Durban Platform for Enhanced Action to develop an agreement applicable to all the parties. Moreover, the Durban Conference called on developed countries to establish 'Nationally Appropriate Mitigation Commitments or Actions by Developed Country Parties' and developing countries to establish 'Nationally Appropriate Mitigation Actions by Developing Country Parties'. Following several subsequent meetings, the Paris Agreement finally established a mechanism through which all parties were required to determine their own obligations in accordance with their INDC.

Under this mechanism, China, like other contracting parties, was to determine its obligations to tackle climate change and formulate legal and institutional systems to assist this process. Since 2011, therefore, China has accelerated its formulation of legal and institutional structures and systems. In terms of administrative regulations, the State Council, in 2011 and 2016 respectively, issued the 'Work Plan for Controlling Greenhouse Gas Emissions for the Twelfth Five-Year Plan period' and the 'Work Plan for Controlling Greenhouse Gas Emissions for the Thirteenth Five-Year Plan period'.

From a ministerial and departmental perspective, the relevant departments under the State Council have also begun to formulate relevant regulations. These include: a target responsibility assessment; carbon emissions control; carbon emissions trading; and measuring and providing data and statistics on greenhouse gas emissions. The regulations of greatest significance include: the 'Interim Measures for the Administration on Certification of Low-carbon Products' issued by the National Development and Reform Commission on February 18, 2013; the 'Notice of the National Development and Reform Commission on Organizing the Reporting of Greenhouse

Gas Emissions of Key Enterprises and Institutions' issued by the National Development and Reform Commission in 2014; and the 'Interim Measures for the Management of Carbon Emissions Trading' promulgated by the National Development and Reform Commission in 2014.

In addition to the abovementioned work, which is already under way, the National Development and Reform Commission has been actively promoting the drafting of basic legislation at the national level and has commissioned certain units to engage in preliminary research aimed at developing a Climate Change Act or Low-carbon Development Promotion Law. To this end, the National Development and Reform Commission announced a publication in 2012 titled 'China's Policies and Actions for Addressing Climate Change'.⁴

3 The current situation with China's climate change law

At present, China has a fairly clear and established management system framework. However, in the legal system, although many departmental rules have been introduced, basic or comprehensive legislation is still lacking. At the institutional level, although China has introduced many mechanisms and systems, there has still been insufficient progress made on key systems, such as the carbon emissions trading system.

3.1 Management system

In terms of its management system, China combines deliberation and coordination agencies, centralised management and division of labour with individual responsibility.

Firstly, China established deliberation and coordination agencies in the State Council and its departments to coordinate the actions of all parties. A deliberation and coordination agency is an interdepartmental coordinating body set up to perform a specific or temporary task. This agency is mainly responsible for macro-strategic decision-making and the coordination of various departments and additional functions.

As early as February 1990, the Chinese government set up the National Climate Change Coordination Group under the then State Council Environmental Protection Committee. In 1998, the State Council set up a National Climate Change Coordina-

4 The State Council the People's Republic of China, 'China's policies and actions for addressing climate change' (22 November 2011) <<https://bit.ly/3CEJhKM>> accessed 18 January 2022.

tion Committee. In June 2007, the State Council decided to establish the National Leading Group on Climate Change and Energy Conservation and Emission Reduction (hereinafter referred to as the 'leading group'). In 2010, the National Development and Reform Commission led the establishment of the Coordinating Liaison Office of the National Leading Group on Climate Change. In August 2011, China set up a Working Group on Climate Change Adaptation Mechanism under the Coordinating Liaison Office of the National Leading Group on Climate Change.

Secondly, China established the Development and Reform Commission of China which is specifically responsible for the centralised management of climate change and for addressing matters related to climate change. According to the regulations of the National Development and Reform Commission: *The Main Responsibilities, Internal Institutions and Staffing Requirements* (hereinafter referred to as 'the three programmes' of the National Development and Reform Commission),⁵ the Commission is responsible for 'organizing and developing major strategies [and] planning and [developing] policies on climate change'. These responsibilities are executed through the relevant departments which take the lead in organising international negotiations on climate change and implementing the United Nations Framework Convention on Climate Change. The Department of Climate Change and the National Development and Reform Commission specifically assume the responsibilities and undertake the tasks mentioned above. The Department of Climate Change has five divisions: the General Office, the Strategic Research and Planning Service, the Internal Policy and Compliance Branch, the International Policy and Negotiation Service, and the External Cooperation Service.

According to the 'Notice of the Office of the State Council on Printing and Distributing the division of work of the key departments of the greenhouse gas emission control scheme for the Twelfth Five-Year Plan period',⁶ besides the National Development and Reform Commission, which is responsible for coordinating the work on controlling greenhouse gas emissions, the key departments include: the Ministry of Foreign Affairs, the Ministry of Science and Technology, the Ministry of Environmental Protection, the Bureau of Meteorology, the Ministry of Finance, the Ministry of Commerce, the Ministry of Construction, the Ministry of Transport, the Ministry of Water Resources, the Ministry of Agriculture, the State Forestry Administration, the Bureau of Oceanic Administration, the Civil Aviation Administration, the Ministry of Education, the Department of Health, the Chinese Academy of Sciences (CAS), the National Bureau of Statistics (NBS), the Ministry of Land and Resources, and other relevant departments. All these departments shall undertake the work related to climate change in the relevant fields in line with the stipulated assignment of responsibilities.

5 Issued by the Office of the State Council, Number 102 of 2008.

6 Issued by the Office of the State Council, Number 41 of 2011.

3.2 Legal system on climate change

China's current legal system on climate change comprises three levels, namely laws, administrative regulations and departmental rules. Moreover, in accordance with the status and content of adjustment, China's current legal system on climate change mainly includes basic (or comprehensive) legislation, laws, regulations and rules concerning the mitigation of and adaptation to climate change.

3.2.1 Basic (or comprehensive) legislation

At present, since the Climate Change Response Law is yet to be introduced, the most important legislation in China is the 'Resolution on Actively Responding to Climate Change', which shall be seen as a 'quasi-law' specifically for climate change within the national legislature. The resolution addresses the following six aspects:

- Climate change is both a major opportunity and a challenge when it comes to China's economic and social development.
- Responding to climate change requires the full implementation of the 'Scientific Outlook on Development'.
- Practical measures must be taken to actively respond to climate change.
- The construction of the rule of law relating to climate change must be strengthened.
- Efforts must be made to improve the awareness and practical capability of the whole of society to address climate change.
- More active international cooperation is needed in the field of climate change.

The resolution puts forward China's basic proposition on climate change and identifies basic principles, measures and means to address climate change. The resolution not only shows the international community what China's basic attitude is towards climate change, but it also provides a simplified basis for China to establish and improve its own legal system on climate change.⁷ Specifically, it has five parts, namely: basic concepts, climate change planning, greenhouse gas emissions and quantitative control measures, capacity building, and nurturing and supporting measures.

7 Li Yanfang, 'On the construction of legal system of China addressing climate change' (2010) 20(6) *Journal of China University of Political Science and Law* 81.

3.2.2 Laws, regulations and rules to mitigate climate change

In a legal context, the most important documents are the Energy Conservation Law and the Renewable Energy Law. Neither is directly related to mitigation; rather, each one indirectly seeks to realise the global goal of mitigation. The Energy Conservation Law has established the following systems: the energy-saving target responsibility system; the energy-saving evaluation and assessment system; power demand-side management; contract energy management; energy-saving voluntary agreements; the standard of limited unit energy consumption; the energy efficiency labelling management system; and others. According to the sequential calculation, over a 15-year period (between 1991 and 2005), through economic restructuring and improved energy efficiency, China saved approximately 800 million tons of standard coal. This is equivalent to about 1.8 billion tons of carbon dioxide emissions, if calculated utilising 1994 data – 2,277 tons of carbon dioxide emissions per ton of standard coal.⁸

The Renewable Energy Law promotes the development of renewable energy through the following systems: the medium- and long-term target system of renewable energy development and utilisation; the renewable energy planning system; the Feed-In Tariff (FIT) system; the system of guaranteed compulsory acquisition; and the Renewable Energy Development Fund, to name a few. The implementation of the law reduces national energy dependence on fossil fuel energy production, which leads to high carbon emissions. In addition to the two abovementioned legislative documents, the Circular Economy Promotion Law, the Cleaner Production Promotion Law and the Population and Family Planning Law objectively seek to mobilise climate change mitigation measures.

In terms of administrative regulations, the most important regulation is the ‘Work Plan for Controlling Greenhouse Gas Emissions for the Thirteenth Five-Year Plan period’ which sets out key areas and plans for 2015-2020, including: the launch of a low-carbon leading energy revolution, the establishment of a low-carbon industrial system, the promotion of low-carbon urbanisation development, an acceleration in regional low-carbon development, the construction and operation of the national carbon emissions trading market, the enhancement of low-carbon scientific and technological innovation, the strengthening of basic capacity building, and the strengthening and implementation of established plans.

In terms of departmental rules, the most important rule is the ‘Interim Measures for the Management of Carbon Emissions Trading’, issued in 2014. This rule systematically regulates competent authorities, parties’ transactions, the initial allocation of emissions quotas, emissions trading quotas, verification and quota settlements, and transaction management, to name a few.

8 National Program on Climate Change.

3.2.3 Laws, regulations and rules to adapt to climate change

Within existing Chinese legislation, no laws have been specifically established for the purpose of adapting to climate change in relation to agriculture, natural ecosystems, water resources or coastal zones. However, there are some laws that can assist in the adaptation to climate change outcomes. Specifically, the relevant legislative documents in agriculture include the Agricultural Law, Grassland Law, Fisheries Law and Land Administration Law. The relevant legislative documents in the field of forests include the Forest Law, Soil and Water Conservation Law, and Law on Desert Prevention and Transformation. Relevant legislation in water resources include the Water Law, the Law on the Prevention and Control of Water Pollution and the Flood Control Act. The relevant legislation relating to coastal zones and coastal areas include the Marine Environmental Protection Law as well as the Law on the Administration of the Use of Sea Areas.

On the whole, however, China still lacks legislation on the field of adaptation, similar to the Law on Disaster Prevention and Mitigation.

3.3 Institutional system of climate change

China has started to carry out preparatory work on basic laws, regulations, rules and policy documents to assist in establishing, regulating and monitoring institutional systems to address climate change.

3.3.1 Carbon emissions trading system

In 2011, the National Development and Reform Commission formulated the ‘Notice of the General Office of the National Development and Reform Commission on the Implementation of the Carbon Emissions Trading Pilot Program’,⁹ establishing Beijing, Shanghai, Tianjin, Chongqing, Hubei and Shenzhen as pilot provinces and municipalities for local carbon emissions trading. The state gave these provinces and municipalities greater autonomy in establishing a carbon trading market to encourage active exploration of local emissions trading schemes. In 2014, the National Development and Reform Commission, on the basis of the experience of these pilot provinces and municipalities, introduced the ‘Interim Measures for the Management of Carbon Emissions Trading’, the key features of which were:

- Competent authority: The National Development and Reform Commission is the carbon trading department for the various provinces, autonomous re-

9 NDRC Climate – Number 2601 of 2011.

gions and municipalities. Operating under the State Council, it is responsible for carbon emissions trading and the construction of carbon emissions trading markets as well as the management, supervision and guidance of the carbon emissions trading market and its related activities in their respective administrative regions.¹⁰

- Coverage: The coverage of carbon emissions trading shall be determined by the provincial carbon trading authorities. Specifically, the provincial carbon trading authorities shall determine the standard according to the key units of emissions released by the carbon trading department under the State Council. On this basis, the provincial carbon trading authorities shall create a list of key units of emissions in the administrative region in accordance with the standard and then report to the carbon trading department under the State Council. After confirming these units, the carbon trading department under the State Council shall release the list to the public.¹¹
- Determination of total amount: According to the requirements of the national goal of controlling greenhouse gas emissions, the carbon trading department under the State Council shall determine the total emissions quotas of the country and the provinces, autonomous regions and municipalities directly under the central government. This shall be determined by giving comprehensive consideration to factors such as greenhouse gas emissions, economic growth, the industrial structure and the energy structure, and the inclusion of key units of emissions.¹²
- Allocation method: The allocation of emissions quotas shall be predominantly free in the initial distribution, followed by the timely introduction of paid distributions and a gradual increase in the proportion of paid distributions.¹³
- Requirements of transaction: The initial trading products of the carbon emissions trading market are the emissions quotas and the voluntary emissions reductions certified by the state, with additional trading products added at the right time.¹⁴ The key units of emissions, the institutions and individuals that meet the trading rules can participate in carbon emissions trading.¹⁵ The transaction shall in principle be traded at the transaction institutions determined by the carbon trading department under the State Council.

10 'Interim Measures for the Administration of Carbon Emission Permit Trading', Article 5.

11 Ibid Article 7.

12 Ibid Article 8.

13 Ibid Article 9.

14 Ibid Article 18.

15 Ibid Article 19.

cil.¹⁶ In the interests of public welfare, the transaction parties can voluntarily cancel their emissions quotas and emissions reductions certified by the state.¹⁷ The carbon trading authority, under the State Council, shall be responsible for establishing the regulations in the carbon emissions trading market and maintaining the stability of the market.¹⁸

3.3.2 The statistics, reporting and accounting system of greenhouse gas emissions

In 2001, China issued the ‘Circular of the State Council on Issuing the Work Plan for Controlling Greenhouse Gas Emissions for the Thirteenth Five-Year Plan period’ which referred to the establishment of a statistical accounting system for greenhouse gas emissions. This brought the basic statistical indicators of greenhouse gases into the government statistical index system and required key units of emissions to improve the ledger records of greenhouse gas emissions and energy consumption. Building a statistics and accounting system of greenhouse gas emissions at the national, local and enterprise levels strengthened the process of capacity building and established a team for full-time work and basic statistics, which is responsible for the accounting of greenhouse gas emissions. Implementing the statistics and accounting system allowed key enterprises to directly submit energy and greenhouse gas emissions data.

On May 20, 2013, the National Development and Reform Commission and the National Bureau of Statistics issued the ‘Circular of the National Development and Reform Commission and the National Bureau of Statistics on Issuing the Opinions of Strengthening the Work of Climate Change Statistics’, which regulated the guiding ideology and the basic principles of China’s climate change action while also improving China’s statistical index system of climate change. The statistical index system of climate change comprises five categories, 19 sub-categories and 36 indicators. The five categories are: climate change and impacts; adaptation to climate change; control of greenhouse gas emissions; capital investment in addressing climate change; and management related to climate change. In addition, the relevant functions are divided up as follows: the National Bureau of Statistics is responsible for data collection and evaluation of the climate change statistical index; the National Bureau of Statistics and the National Development and Reform Commission is responsible for the basic statistics of greenhouse gas emissions; and the National Development and Reform Commission and the National Bureau of Statistics are responsible for greenhouse gas emissions accounting.

16 Ibid Article 21.

17 Ibid Article 22.

18 Ibid Article 23.

When it comes to enterprises' specific measurement, reporting and verification (MRV) of greenhouse gas emissions, the 'Notice of the National Development and Reform Commission on Organizing the Reporting of Greenhouse Gas Emissions of Key Enterprises and Institutions', issued by the National Development and Reform Commission in 2014, stipulated the principles, the competent authorities, and the contents and procedural safeguards of corporate greenhouse gas reporting. The reporting subjects are legal enterprises and institutions or units with independent accounting systems (deemed to be legal persons), whose greenhouse gas emissions reached the equivalent of 13,000 tons of carbon dioxide in 2010 or whose comprehensive energy consumption reached 5,000 tons of standard coal in 2010. Those in charge of verification are the competent provincial departments of climate change, which ultimately submit the summary to the National Development and Reform Commission.

3.3.3 The certification system for low-carbon products

On February 18, 2013, the National Development and Reform Commission promulgated the 'Interim Measures for the Administration on Certification of Low-carbon Products', which officially launched the certification system for low-carbon products. It stipulates the establishment of a unified certification system for low-carbon products, comprising three aspects: implementing a unified directory of low-carbon product certification;¹⁹ the rules for low-carbon product certification, which shall be formulated and promulgated by the Department of Certification and Accreditation Administration under the State Council; and the implementation of unified certificates and certification marks for low-carbon product certification.

To effectively carry out the work of low-carbon product certification, unified identifications of low-carbon products must be used. The format and content of the certificates of low-carbon product certification and the style and type of the certification marks shall be uniformly formulated and issued by the Department of Certification and Accreditation Administration under the State Council.

19 Products listed in the directory are certificated voluntarily whereas those not included in the directory are temporarily excluded from the unified low-carbon product certification process. Unified standards, technical specification certification and certification rules are also implemented.

4 Key issues related to China's climate change action

A study of the history and current situation relating to China's climate change action (discussed above) indicates that although the management of China's climate change action has been relatively sound, the laws and systems underpinning China's climate change action are still in their early stages of development, and many issues still need to be resolved. These issues include the formulation of basic or comprehensive legislation; the improvement of the carbon emissions trading system; and the improvement of other related systems.

4.1 The formulation of basic or comprehensive legislation

From an international perspective, a large number of countries have developed special climate-related legislation. For example, Japan enacted the Law on Promoting Global Warming Countermeasures in 1998, the United Kingdom adopted the Climate Change Act in 2008, the Republic of Korea adopted the Green Growth Basic Law in 2009 and modified it into the Framework Act on Low Carbon Green Growth in 2013, and the United States adopted the American Clean Energy and Security Act in 2009. Therefore, China must develop basic or comprehensive legislation for the purpose of taking comprehensive action at the national level in the future.

In this regard, the National Development and Reform Commission assigned, to the Institute of Law of the Chinese Academy of Social Sciences, the task of drafting a compendium on China's Policies and Actions for Addressing Climate Change which was published in 2012.²⁰ The draft provides comprehensive coverage of the two main areas of mitigation and adaptation, and defines the basic principles and systems of climate change as well as specific areas for addressing. In accordance with the provisions of the draft, the purpose of the legislation is to 'control and reduce greenhouse gas emissions, to scientifically respond to global and regional climate change and to promote the sustainable development of China's economy and society'.

The basic principles of the legislation include:

- the principle of sustainable and coordinated development;
- the principle of scientific response;
- the principle of equal emphasis on mitigation and adaptation;
- the principle of combining voluntary emissions reduction and compulsory emissions reduction;
- the principle of policy coordination; and
- the principle of social participation.

20 The State Council the People's Republic of China (n 2).

The main aspects covered by the legislation include:

- the duties, rights and obligations of climate change action;
- measures mitigating climate change;
- measures facilitating adaptation to climate change;
- safeguards dealing with climate change;
- the supervision and management of climate change;
- publicity, education and social participation relating to climate change; and
- international cooperation in and legal responsibility for climate change.

Although the provisions of the legislation are more comprehensive, the draft legislation has not yet been submitted for consideration. As a result, China still does not have basic or comprehensive climate change legislation.

Regarding the 'completeness' of the legal system, China now has relevant legislation on mitigation and adaptation, but urgently needs specific basic or comprehensive climate change legislation to determine the management system and basic principles as well as the country's main system of responding to climate change. Doing this will not only provide the legal basis to the departments – which will take related actions or formulate relevant regulations or policies in future – and legal protection for China to take comprehensive actions, but it can also deliver a clear signal to the international community regarding China's commitment to fulfilling its international obligations.

4.2 The improvement of the carbon trading system

Carbon emissions trading and carbon tax are the two most important means used by the international community to mitigate climate change. However, owing to their overlapping functions, countries usually choose one as their core system for mitigating climate change. China finally chose carbon emissions trading as its core system. However, China has not given up the idea of introducing a carbon tax system. In line with the vision of the National Development and Reform Commission, China will employ both carbon emissions trading and carbon tax simultaneously. Carbon emissions trading will be applied to enterprises in a specific range, while other enterprises beyond that specific range will be required to adhere to a carbon tax system.

In October 2016, the National Development and Reform Commission was due to start allocating carbon emissions quotas in the national carbon market, with the quota allocations being complete by the first or second quarter of 2017. Before 2020, the threshold for the carbon market would be reduced to bring the carbon market into line with the enterprise expansion process and a carbon tax would be levied on enter-

prises outside the carbon market system following the initial stage of operation of the national carbon market.²¹

The implementation of a carbon tax system is much simpler than that of a carbon emissions trading system. Carbon emissions trading can only be effective in a more sophisticated market, with more stable prices and stringent supervision.

Although China has begun to implement a carbon emissions trading system and has conducted numerous pilots, there are still many problems to be addressed, especially the establishment of carbon emissions trading in the national market and the monitoring and accounting of carbon-emission enterprises.

4.3 The improvement of other relevant systems

Carbon emissions trading alone cannot cover all areas of climate change, nor solve all its problems. Therefore, in addition to improving the carbon emissions trading system in the future, it is necessary to improve other related systems, of which the most important ones are the governmental environment, resources and energy responsibility system and the economic incentive system.

Over the past decade, China has benefited from effective competition among local governments and has achieved a high rate of economic development. However, too much government attention has been given to the performance of the economy, which has resulted in China facing serious governmental failures in the environmental, resources and energy fields. Local governments tend to invest in energy-intensive, high-emission industries, leading to the blending of greenhouse gas emissions and air pollution with Chinese characteristics, leading to the serious environmental, resource and energy-related issues currently experienced in China.

Therefore, to effectively address climate change in the future, China not only needs to build systems at the enterprise level, with clear corporate responsibilities in relation to climate change, but it also needs to give greater emphasis to the responsibilities of government to cope with climate change. By introducing greenhouse gas emissions control and by upgrading and transforming industrial structures, local government performance can be assessed, thus improving the government's environment, resources and energy responsibility system.

In addition, from developed countries' perspectives (in contrast to stricter control measures), economic instruments such as credit, investments, tax incentives, financial subsidies and government procurement can be used to more effectively promote enterprise transformation, reduce the burden on enterprises and contribute to the

21 'The uniform carbon market is coming and the carbon tax may levied after 2020', Renmin Net <<http://gd.people.com.cn/n2/2016/0810/c123932-28809932.html>> accessed 16 December 2016.

transformation of economic development. In this regard, China has begun to take relevant policy actions. For instance, in terms of financial subsidies, in 2013 China allocated 2.56 billion RMB of central budget funds to support 438 energy-saving technological transformation and industrialisation projects, achieving an energy saving of 5.6 million tons of standard coal. In addition, China allocated 372 million RMB of central budget funds to support 445 capacity-building projects in energy-conservation supervision institutions and allocated 1.844 billion RMB of central financial energy-saving incentive funds to support 272 financial incentives projects involving energy-saving technological transformation, achieving an energy saving of 6.42 million tons of standard coal. Approximately 280 million RMB of central financial incentive funds were allocated to support 443 contract energy-management projects, achieving an energy saving of about 1.16 million tons of standard coal.²²

Although relevant policy actions have already been taken, China has not yet introduced clear provisions on the relevant economic incentive system into legislation. In the future, it will be necessary to stipulate in basic or comprehensive legislation and authorise the relevant departments to introduce corresponding regulations or policies and measures, to ensure adequate public and private investment.

Bibliography

- PBL Netherlands Environmental Assessment Agency, 'Trends in Global CO₂ Emissions' <www.google.com.hk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=5&ved=0ahUKewifj4nml-7QAhUGv7wKHbJAB6gQFgg4MAQ&url=http%3a%2f%2fwww.pbl.nl%2fsites%2fdefault%2ffiles%2fcms%2fafbeeltingen%2ff005x_muc14_en.pdf&usq=AFQjCNFNracGTn3IZ00qGWt6MK0I3bdf2A&cad=rjt> accessed 12 December 2016.
- Renmin Net 'The Uniform Carbon Market is Coming and the Carbon Tax May levied after 2020' <<http://gd.people.com.cn/n2/2016/0810/c123932-28809932.html>> accessed 16 December 2016.
- The Central People's Government of the People's Republic of China, 'China's policies and actions to address climate change (2011) white paper' <http://www.govcn/jrzg/2011-11/22/content_2000047.htm> accessed 23 December 2016.
- The State Council of The People's Republic of China, 'China's policies and actions for addressing climate change' (22 November 2011) <<https://bit.ly/3qGGHPB>> accessed 28 March 2022.
- Yanfang, L, 'On the construction of legal system of China addressing climate change' (2010) 20(6) *Journal of China University of Political Science and Law* 81.

22 The Central People's Government of the People's Republic of China, 'China's policies and actions to address climate change (2011) White Paper' <http://www.govcn/jrzg/2011-11/22/content_2000047.htm> accessed 23 December 2016.

A rights-basis for climate compensatory claims in Kenya*

Lydia A Omuko-Jung

Abstract

This chapter analyses the Kenyan legal system and argues that a rights-based approach offers possibilities for obtaining compensation against private entities for climate-related losses in Kenya. It identifies four main features that make Kenya's legal system conducive for rights-based climate compensatory claims. Firstly, there exists a specific legislative provision on enforcing climate-related rights coupled with a justiciable environmental rights provision in the Constitution. Secondly, horizontal application of constitutional rights provides the possibility to enforce violation of environmental and climate-related rights against private entities. Thirdly, the liberalised *locus standi* and causation requirements for enforcement of environmental and climate-related rights allow litigants to circumvent the restrictive requirements experienced in private law cases. Finally, the legal system provides for a remedy of compensation for environmental and climate-related rights violation. The Chapter concludes that while the legal system may be conducive for climate compensatory claims, litigants may still face the challenge of proving when and how much compensation is due, considering the conflicting jurisprudence on compensation in environmental rights cases.

1 Introduction

The question of who should be responsible for the costs and damages of climate change is now becoming more important with the rising impacts of climate change. The risks of climate change come with huge costs as properties are damaged and livelihoods lost, and the necessary mitigation and adaptation strategies also attract huge costs.¹ As 'the realization sinks that climate change will cause billions of dol-

* An earlier version of this chapter was presented at the Climate Change Responsibility and Liability conference hosted by the University of Graz between 8th and 10th November 2018. I am grateful to the participants for their helpful discussion and comments.

1 For instance, the global cost of climate change in 2010, including private and public property damage, was approximately USD 700 billion and the estimates have dramatically increased since then. The UNEP estimates that the global cost of adapting to climate change impacts is expected to grow to USD 140-300 billion per year by 2030 and USD 280-500 billion per year by 2050. The IPCC on the other hand estimates that the costs of damages from warming of 1.5°C and 2°C in 2100 are USD 54 trillion and USD 69 trillion respectively, relative to 1961-1990. See Michael Byers, Kelsey Franks and Andrew Gage, 'Internalization of climate dam-

lars of harm even if we do everything feasible to cut back on emissions,² momentum is building up on litigation as an avenue for holding responsible agents liable for the costs associated with climate change.

But then again, litigation has so far failed to provide the much-needed reprieve to victims as climate cases seeking compensation around the world have largely been unsuccessful.³ Parties to a climate damages suit are usually faced with an insurmountable task of convincing the courts that emissions from the defendants have indeed caused damage capable of being redressed. The diffuse nature and transboundary effect of GHG emissions create particular challenges on establishing climate liability in a way that would fulfil the traditional litigation requirements for compensation. The problem is exacerbated by the lack of domestic legislations that recognise the intricacies of climate change. One commentator has pointed out that the ‘climate damages litigation landscape would be significantly altered if countries enact legislation changing or clarifying the rules around climate damages liability.’⁴

One country that deserves mention in this breadth is Kenya. It is one of the few countries around the world with a specific legislation providing for enforcement of rights relating to climate change and for compensation of climate victims.⁵ The Climate Change Act of 2016⁶ and the Constitution⁷ provide for the right to sue entities that contribute to climate change without the need to demonstrate loss or injury and

ages litigation’ (2017) 7 *Washington Journal of Environmental Law & Policy* 264, 266; Daniel Puig et al., ‘The adaptation finance gap report’ (United Nations Environment Programme (UNEP) 2016) 40; Ove Hoegh-Guldberg et al., ‘Impacts of 1.5°C of global warming on natural and human systems’ in Valérie Masson-Delmotte et al. (eds), *global warming of 1.5°C: an ipcc special Report on the Impacts of Global Warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty* (IPCC 2018) 264-265.

2 Daniel A Farber, ‘Adapting to climate change: Who should pay’ (2007) 23 *Journal of Land Use & Environmental Law* 1, 4.

3 For the purposes of this chapter, successful means a positive outcome of the claim in court rather than the effects of litigation in the broader policy and regulatory landscape. As at the time of writing this Chapter, about 25 climate compensatory cases had been filed against private entities in various jurisdictions around the world, out of which 22 had been filed in the US. In the US, none of the cases have been determined on merits. See Sabin Centre for Climate Change Law, ‘Climate change litigation databases’ <<http://climatecasechart.com/>> accessed 15 June 2020.

4 Byers, Franks and Gage (n 1) 269; Andrew Gage et al., ‘Taking climate justice into our own hands: A model Climate Compensation Act’ (West Coast Environmental Law 2005) <https://static1.squarespace.com/static/565777bfe4b0509ba9e4f31e/t/5666fee5dc5cb481d318cb85/1449590501349/web_version_final.pdf> accessed 20 October 2018.

5 Uganda is another country that recently enacted a climate change legislation with a specific provision on climate change litigation which provides for the relief of compensation. See the (Uganda) National Climate Change Act 2021, Section 26.

6 (Kenyan) Climate Change Act No 11 of 2016.

7 Constitution of Kenya 2010.

allows court to order for compensation of ‘climate victims’.⁸ The provisions, though not yet tested, address some of the challenges that have stood in the way of climate litigation and open doors for climate compensatory claims in Kenya.

While recognising that there are various avenues for enforcing the Climate Change Act and obtaining compensation,⁹ this chapter concentrates on the rights-based approach to climate compensatory claims against private entities in Kenya. It discusses how the Climate Change Act and the Constitution provide a rights basis to seek damages and how this approach addresses the challenges that have clouded climate compensatory claims around the world.

2 The challenge of climate compensatory claims: A global perspective

For the purposes of this article, *climate compensatory claims* refer to a sub-set of climate litigation where plaintiffs sue private entities seeking compensation for damages caused or likely to be caused by climate change and for the costs of preparing for the impacts of climate change. Although there are cases where compensation can be sought against government for its actions or inaction against climate change, the discussion in the chapter is limited to liability of private entities for climate violations. These claims can be filed by either private persons, civil society or even governmental organisations.

While there has been considerable attempts by both government and private parties to file climate compensatory claims, to the author’s knowledge, none has been successful in actually obtaining the same.¹⁰ In the US for instance, where most of the compensatory suits have been filed, none of them have to date reached trial on merits.¹¹ Issues such as the political question doctrine, legal standing and displacement by statutes have been major barriers.¹² In Germany, the *Lliuya v RWE AG*¹³ case

8 Climate Change Act Section 23; Constitution of Kenya Article 70.

9 For a discussion of the avenues, see Lydia A Omuko-Jung, ‘The evolving locus standi and causation requirements in Kenya: A precautionary turn for climate change litigation?’ (2021) 15 Carbon & Climate Law Review 171; Lydia A Omuko-Jung, ‘Climate change litigation in Kenya: Possibilities and potentiality’ in Francesco Sindico and Makane Moise Mbegue (eds), *Comparative climate change litigation: Beyond the usual suspects*, vol 47 (1st edn, Springer International Publishing 2021).

10 See (n 3) above.

11 Ibid.

12 *City of Oakland v BP PLC* (2018) 325 F Supp 3d 1017 (ND Cal); *City of New York v BP p.l.c* (2018) SDNY 1:18-cv-00182, 325 F Supp 3d 466; *Comer v Murphy Oil USA, Inc* (2007) SD Miss No 07-60756, 2007 WL 6942285; *State of Connecticut et al. v American Electric Power Company, Inc et al.* (2005) SDNY 1:04-cv-05669-LAP, 406 F Supp 2d 265. See also Byers, Franks and Gage (n 1) 272.

13 *Essen Regional Court Case No 2 O 285/15* (unofficial English translation available at the Sabin Centre Climate Change Litigation Database <<http://climatecasechart.com/climate-change-litigation/non-us-case/liiuya-v-rwe-ag/>> accessed 28 September 2021).

seems to be hopeful since it has moved to the evidentiary stage.¹⁴ The case did, however, have its fair share of challenges, as the court of first instance dismissed the claim for failure to meet the causation requirements and lack of effective redress from court.¹⁵

Although some of the challenges in these cases are jurisdiction specific,¹⁶ the claimants seem to have similar challenges across board – selecting the proper cause of action, proving legal standing and linking their injuries or losses to the defendants' emissions.¹⁷

2.1 Causes of action

The question claimants are usually faced with is, what cause of action is suitable? Is it only private law causes of action or can public law causes of action also provide an avenue for claiming compensation? Most, if not all, of climate compensatory claims around the world have been based on private law causes of action in tort (available for common law countries) or in the civil procedure (in Germany). The private law cases have however faced many obstacles, which has led some authors to question their suitability for climate liability.¹⁸

-
- 14 Ibid. A Peruvian national sued a German Company for its contribution to GHG emissions and sought to have the defendant held liable for the portion of costs of adequate preventative measures to protect the claimant's property against the impacts of climate change. The district court dismissed the claim, and an appeal was lodged. The appellate court has declared the case admissible, and it has now moved to the evidentiary stage to determine the existence of risk to the claimant's property and how the defendant's GHG has contributed to the risk.
 - 15 Ibid. The district court held that it was impossible to identify a linear causal chain from particular source of emissions to a particular damage and that the court could not provide the claimant with an effective redress because his situation would not change even if RWE stopped emitting.
 - 16 For instance, displacement of common law causes of action by statute is quite specific to cases in the US. See *Native Village of Kivalina v ExxonMobil Corp* 696 F3d 849 (9th Cir 2012); *City of Oakland* (n 12); *City of New York* (n 12).
 - 17 Another barrier not addressed here of particular relevance to the US cases is the political question doctrine. The doctrine bars US courts from considering cases that raise political issues that are best addressed by the elective branches. Lower courts in the US have dismissed tort-based climate cases on the ground that they raise non-justiciable climate cases, though the Supreme Court has held that the doctrine does not bar climate related claims. See *American Electric Power Co v Connecticut* 564 US 410 (2011); Byers, Franks and Gage (n 1) 273.
 - 18 Matthew Edwin Miller, 'The right issue, the wrong branch: Arguments against adjudicating climate change nuisance claims' (2010) 109 Michigan Law Review 257; David A Dana, 'The mismatch between public nuisance law and global warming' (2010) 18 Supreme Court Economic Review 9. Kysar also argues that tort law seems fundamentally ill-equipped to address the causes and impacts of climate change. See Douglas A Kysar, 'What climate change can do about tort law' (2011) 4 Environmental Law 1, 3-4.

In the US, for instance, common law causes of action have been dismissed because of the displacement doctrine. According to this doctrine, federal common law cannot be applied by US courts when the issue in question is directly regulated by statute.¹⁹ In the climate change context, the courts have held that global warming cases are displaced by the Clean Air Act (CAA) and consequently, federal courts have no subject matter jurisdiction.²⁰ The problem, however, is that the CAA does not provide for damages as a remedy for harms arising from the very pollution it purports to regulate.²¹ This leaves plaintiffs with limited, if any, avenue to seek and recover remedy for damages arising from climate change impacts, since their claims are precluded from federal common law claims by CAA and at the same time cannot recover damages under the statute. This has made it almost impossible for plaintiffs in the US to recover damages for any injury or losses from climate change.²²

Generally, climate lawsuits based on private law causes of action are considered more difficult to navigate and a public law approach seems like an easier avenue.²³ For instance, if a climate case is based on negligence, the claimant must prove that the defendant owes them a duty of care recognised by law and that the defendant has

-
- 19 Nicole Johnson, 'Native Village of Kivalina v ExxonMobil Corp: Say goodbye to federal public nuisance claims for greenhouse gas emissions' (2013) 40 Ecology Law Quarterly 557, 560; Mark Belleville and Kennedy Katherine, 'Cool lawsuits: Is climate change litigation dead after Kivalina v ExxonMobil?' (2012) 7 Appalachian Natural Resources Law Journal 51, 58.
- 20 *Native Village of Kivalina v ExxonMobil Corp.* (n 16) 858.
- 21 Belleville and Kennedy Katherine (n 19) 97-98; Johnson (n 19) 561.
- 22 Subsequent decisions have followed this reasoning in dismissing climate compensatory claims. In the *City of Oakland v BP P.L.C.* a federal district court dismissed public nuisance lawsuits brought by Oakland and San Francisco seeking to hold five fossil fuel companies liable for climate change harms on the basis of the displacement doctrine. Although the claimants attempted to differentiate their federal nuisance claims from claims based on GHGs previously found to be displaced by the Clean Air Act, the court held that AEP and Kivalina's displacement rule would apply to the cities' claims even though the claims were based not on the defendants' own greenhouse gas emissions but on their sales of fossil fuels to other parties that will eventually burn the fuels. Again, in July 2018, another federal district court in *City of New York v BP P.L.C* dismissed a suit filed by New York City against fossil fuel companies seeking damages for climate change-related injuries. One of the conclusions made by the court while dismissing the suit was that the CAA displaced all common law claims. See *City of Oakland* (n 12) 10; *City of New York* (n 12) 21-22.
- 23 Maria L Banda and Scott Fulton, 'Litigating climate change in national courts: Recent trends and developments in global climate law' (2017) 47 Environmental Law Reporter 10121, 10134; K Bouwer, 'Substantial justice?: Transnational torts as climate litigation' (2021) 15 Carbon & Climate Law Review 188, 189-190; Kysar (n 18) Section II. *Bouwer*, for instance, notes that private law duties do not easily accommodate environmental harms and similar problems apply to climate torts. *Kysar* discusses the difficulties in using tort for climate litigation, pointing out that '[a]t each stage of the traditional tort analysis – duty, breach, causation, and harm – the climate change plaintiff finds herself bumping up against doctrines that are premised on a classical liberal world view in which threats such as global climate change simply do not register.'

breached this duty out of which the claimant has suffered loss.²⁴ Duty of care involves a particular or defined legal obligation ‘arising out of a relationship between ascertained defendant(s) and ascertained plaintiff(s).’²⁵ In climate change, it is difficult to identify the relationship between ascertained defendants and ascertained plaintiffs.²⁶ Secondly, there is need to demonstrate foreseeability of risk. The question is whether it is reasonably foreseeable that a particular defendant’s actions of emitting GHGs in the course of its business would lead to a specific climate related event that would in turn harm the plaintiff.²⁷ And when does such foreseeability arise?²⁸ Thirdly, the plaintiff needs to show that the defendant breached the duty of care.²⁹ To what extent would the defendant’s emission be considered to have caused climate change that induced the event that caused the plaintiff’s injury? Would the defendant’s emissions be sufficient or necessary element for the event that injured the plaintiff?³⁰ While developments in climate science have made it possible identify the role of anthropogenic global warming to certain events and to quantify the contribution of large emitters,³¹ it still remains difficult to prove to the required standards that the plaintiff was injured because of the defendant’s influence on the climate.³² Indeed, looking at climate lawsuits generally, the tort-based ones have not had positive out-

-
- 24 For an analysis of elements of negligence, see David G Owen, ‘The five elements of negligence’ (2007) 35 Hofstra Law Review 1671.
- 25 Brian J Preston, ‘Climate change litigation (Part 1)’ (2011) 5 Carbon & Climate Law Review 3, 6; See also James Salzman and David Hunter, ‘Negligence in the air: The duty of care in climate change litigation’ (2007) 156 University of Pennsylvania Law Review 101, 107; and *Palsgraf v Long Island Railroad* 162 NE 99 (NY 1928) (opinion of Justice Cardozo). *Salzman and Hunter* note that the duty of care is owed to another person or class of persons, and not to the world at large.
- 26 Climate change is essentially considered a global tort, in that everyone is at risk by global warming in which multiple defendants contribute to. See Salzman and Hunter (n 25) 108; Preston (n 25) 7.
- 27 Preston (n 25) 7.
- 28 Ibid.
- 29 Owen (n 24) 1676.
- 30 See Preston (n 25) 8 for an analysis of necessary and substantial elements in determining the defendant’s liability for the plaintiff’s injuries.
- 31 The recent field of attribution science tries to find out how human-induced climate change contributed to the occurrence of specific extreme weather events while the *Carbon Majors Report* identifies major emitters and quantifies their contribution. See RF Stuart-Smith et al., ‘Increased outburst flood hazard from Lake Palcacocha due to human-induced glacier retreat’ (2021) 14 Nature Geoscience 85; Richard Heede, ‘Tracing anthropogenic carbon dioxide and methane emissions to fossil fuel and cement producers, 1854-2010’ (2014) 122 Climatic Change 229.
- 32 Omuko-Jung, ‘The evolving *locus standi* and causation requirements in Kenya’ (n 9) 172; Sabrina McCormick et al., ‘Science in litigation, the third branch of U.S. climate policy’ (2017) 357 Science 979; Tobias Pfrommer et al., ‘Establishing causation in climate litigation: Admissibility and reliability’ (2019) 152 Climatic Change 67, 68.

comes from court³³ and the successful ones have mainly been based on public law doctrines.³⁴

And while public law cases are considered easier to navigate and a more straightforward vehicle for climate litigation,³⁵ they also have their fair share of challenges when used to seek compensation. For instance, some jurisdictions do not allow for horizontal application of constitutional rights³⁶ which closes the door for rights-based claims against private entities. In other jurisdictions, persons claiming a public right or interest have to show they suffered an injury greater than other members of the public,³⁷ which makes it challenging to obtain damages for injuries which are diffuse in nature like those arising from climate change. Thus, both private and public law have their fair share of challenges when used to seek compensation for injuries arising from climate change impacts.

33 It is however important to note that the appellate court in *Lliuya v RWE* has declared the case admissible and moved to the evidentiary stage. It remains to be seen if the plaintiff will prove his case at trial. See (n 14) and Omuko-Jung, 'The evolving *locus standi* and causation requirements in Kenya' (n 9) 171.

34 Examples of the successful cases include *Leghari v Pakistan* which was a rights-based litigation against government's inaction and delay in implementing the National Climate Change Policy and Framework; *Gbemre v Shell* where the court found that a Nigerian legislation permitting gas flaring violated the claimant's rights to life and dignity; and *Netherlands v Urgenda* in which the Supreme Court upheld the Court of Appeals decision that the State's policy on GHG emission reduction was not in compliance with Articles 2 and 8 ECHR which requires it to take suitable measures to protect the residents of the Netherlands from dangerous climate change. See *Leghari v Federation of Pakistan* WP No 25501/2015 (Lahore High Ct Green Bench 2015); *Gbemre v Shell Petroleum Dev Co Nigeria Ltd & Others* No FHC/B/CS/53/05 (Fed High Ct 14 Nov 2005) (Nigeria); *State of the Netherlands v Urgenda Foundation* (2019) ECLI:NL:HR:2019:2007 (Supreme Court of the Netherlands).

35 Banda and Fulton (n 23) 10134.

36 In the US for instance, human rights provisions under the Constitution have no direct application between private actors. Private actors are not bound by constitutional rights except when they are endowed with powers or functions that are governmental in nature, that is, when they are acting as a state or when they conduct a state action. The Canadian Supreme Court has also held that the Charter rights do not bind private persons. Germany on the other hand has a different approach – a private person may not bring direct constitutional action against another but parties to a private litigation may raise basic rights to support their positions through the general clauses and concepts of private law. See *Evans v Newton* 382 US 296, 299 (1966); *Retail, Wholesale and Department Store Union v Dolphin Delivery Ltd* (1986) J 2 S.c'R, 573,9 B.c'LR (2d) 273 595; Danwood Mzikenge Chirwa, 'The horizontal application of constitutional rights in a comparative perspective' (2006) 10 Law, Democracy & Development 21, 22-31.

37 See for instance *T-330/18 - Armando Carvalho and Others v The European Parliament and the Council* (2019) ECLI:EU:T:2019:324 at (54), the court held that the plaintiffs need to show that they are affected by the contested matter in a peculiar manner or by reason of circumstances in which they are differentiated from all other persons.

2.2 Legal standing

The classical standing in claims for damages grants only persons who have suffered or are likely to suffer as a result of the challenged conduct the right to seek actionable remedy.³⁸ In the US for example, the plaintiff has to demonstrate that (i) they have suffered an injury in fact; (ii) that is fairly traceable to the defendant's conduct; and (iii) is capable of being redressed by the court.³⁹ It is quite a challenge to navigate this classical standing requirement in climate cases. Whereas courts generally acknowledge injuries suffered by the plaintiffs, they have generally rejected the plaintiffs' assertions on causation.⁴⁰ This is compounded by the fact that for some courts, it is insufficient for the plaintiff to demonstrate that the defendants' emissions *contributed* to the injuries suffered.⁴¹

The other issue with standing is that some courts have determined that only government entities, and not private citizens, have a standing to assert global warming claims. In *Massachusetts* and *Connecticut*, the Supreme Court found that the plaintiffs have standing by granting them 'special solitude' due to their sovereign states.⁴² While the cases were not compensatory claims, they have influenced claims for damages, such as the *Comer v Murphy* where the court held that the plaintiffs lacked standing because, *inter alia*, all of them were private citizens who had no sovereign status.⁴³

38 *Gouriet v Union of Postal Office Workers* (1977) AC 43 500; Brian Sang, 'Tending towards greater eco-protection in Kenya: Public interest environmental litigation and its prospects within the new constitutional order' (2013) 57 *Journal of African Law* 29, 31.

39 United States Constitution Section III; *Lujan v Defenders of Wildlife* 504 US 555 (1992) 560-561.

40 In *Comer v Murphy*, while the court acknowledged that those who suffered property damage and physical injuries from Hurricane Katrina did have such a particularised injury for standing purposes, the court found that the Plaintiffs had failed to establish a causal connection between the defendants' emissions to the specific damage they suffered during Hurricane Katrina. Similarly, in *Kivalina v Exxonmobil* the court held that the village lacked constitutional standing because its injuries were not fairly traceable to the defendants' emissions. See *Comer v Murphy Oil USA* (2009) 585 F3d 855 (5th Cir) 23; *Native Village of Kivalina v Exxonmobil Corp* 663 F Supp 2d 863 (ND Cal2009) 877-880.

41 *Comer II* (n 40) 21-22; *Native Village of Kivalina v Exxonmobil Corp* (n 40) 880-882. An exception is *Lliuya v RWE AG* (n 13) where the appellate court has accepted that partial contribution can still be a basis for liability.

42 *Massachusetts v Environmental Protection Agency* 549 US 497 (2007) 518-520; *AEP v Connecticut* (n 15) 420.

43 *Comer II* (n 40) 22.

2.3 Causation and liability

To be able to recover damages, plaintiffs must establish a causal relationship between their injury and the defendants' actions. Causation in this case is different from the 'fairly traceable' requirement for standing, but rather (at least in the US) they have to establish factual and proximate causation.⁴⁴ While the courts in the US are yet to deal with this issue in climate compensatory cases since none has so far reached merits, it is considered one of the most significant barriers to overcome in climate compensatory claims.⁴⁵ For factual causation, one needs to show that the defendant's action more likely than not caused the injury,⁴⁶ which is often established through the 'but for' test, in which case the defendant's action needs to be a necessary element.⁴⁷ Under civil law jurisdiction, particularly Germany and Austria, the plaintiff has to prove that there is a high probability that the defendant's conduct caused the harm.⁴⁸ In the climate change context, extreme events are subject to natural fluctuations in frequency and severity making it difficult to attribute the event that caused an injury to human intervention,⁴⁹ let alone emissions from particular defendants. Even if the plaintiff were able to establish the link, the emissions from a single or a group of defendants cannot be singled out to have caused climate change.⁵⁰ In a mix of emissions in the atmosphere from a multitude of emitters, a single defendant's emissions is sometimes considered just a 'drop in the ocean.'⁵¹

In *Lliuya v RWE*, the district court dismissed the claim for lack of causal link, noting that the defendant's emissions were so insignificant in light of the millions and

44 Kysar (n 18); *Restatement of the Law (Third) of Torts: Liability for physical and emotional harm* (The American Law Institute 2012).

45 Kysar (n 18) 29; Byers, Franks and Gage (n 1) 278-279; Preston (n 25) 8.

46 *Wheat v Sofamor, SNC* 46 F Supp 2d 1351 (ND Ga 1999) 1357; Byers, Franks and Gage (n 1) 279.

47 Byers, Franks and Gage (n 1) 280; Richard W Wright, 'Causation, responsibility, risk, probability, naked statistics, and proof: Pruning the bramble bush by clarifying the concepts' (1988) 73 *Iowa Law Review* 1001, 1019.

48 Martin Spitzer and Bernhard Burtcher, 'Liability for climate change: Cases, challenges and concepts' (2017) 2017 *Journal of European Tort Law* 166.

49 *Ibid* 167; Kysar (n 18) 31.

50 *Native Village of Kivalina v Exxonmobil Corp* (n 40). The court held that considering that GHGs rapidly mix in the atmosphere and inevitably merge, GHGs cannot be traced to any particular source, let alone the defendant. See also Byers, Franks and Gage (n 1) 280-281.

51 In *Lliuya v RWE AG* (n 13), the district court noted that the emissions 'by the defendant are merely a fraction of innumerable other pollutants, which a multitude of major and minor emitters are emitting and have emitted... Even the emissions of the defendant, as a major greenhouse gas emitter, are not so significant in the light of the millions and billions of emitters worldwide.' See also Jacqueline Peel, 'Issues in climate change litigation' (2011) 5 *Climate Law Review* 15, 16; Lydia Akinyi Omuko, 'Applying the precautionary principle to address the "proof problem" in climate change litigation' (2016) 21 *Tilburg Law Review* 52, 57.

billions of emitters worldwide.⁵² Consequently, even if the defendant's emissions were undone, the plaintiff's harm would have still occurred. Furthermore, it stressed that the chain of causation in climate change complex, multipolar and even scientifically disputed.⁵³

3 Climate compensatory claims in Kenya: A rights-based approach

The above discussion has briefly pointed out the challenges claimants around the world face in trying to obtain compensation for climate damages, ranging from the classical causation and *locus standi* to the issue of the right cause of action. Particularly, private law-based claims seem to be more challenging to navigate when the traditional legal requirements are applied to climate cases. Consequently, this chapter considers the rights-based approach as a more promising avenue for claiming compensation within the Kenyan legal system, considering how public law has evolved in the country especially as relates to enforcing environmental rights.⁵⁴

The main legal provision for enforcement of rights relating to climate change is Section 23 Climate Change Act. It provides that

a person may, pursuant to Article 70 of the Constitution, apply to the Environment and Land Court (ELC) alleging that a person has acted in a manner that has or is likely to adversely affect efforts towards mitigation and adaptation to the effects of climate change. [Emphasis added]⁵⁵

Article 70 of the Constitution on the other hand allows any person who alleges that a right to clean and healthy environment protected under Article 42 of the Constitution⁵⁶ has been, is being or is likely to be infringed or threatened to apply a court for redress. The direct reference to the Constitution places climate related violations at the same level as constitutional rights violations so that the enforcement proceedings under the constitution are also available for climate litigation.⁵⁷ Thus, the inclusion of the right to clean and healthy environment in the Bill of Rights coupled with the enforcement provision in the Climate Change Act provide a basis for a rights-based approach to climate-compensatory claims in Kenya.

52 *Lliuya v RWE AG* (n 13). See the unofficial English translation of the district court's decision at the Sabin Centre Climate Change Litigation Database <http://climatecasechart.com/climate-change-litigation/wp-content/uploads/sites/16/non-us-case-documents/2016/20161215_Case-No.-2-O-28515-Essen-Regional-Court_decision-1.pdf> accessed 28 September 2021.

53 Ibid.

54 For a discussion of the evolution, see Omuko-Jung, 'The evolving *locus standi* and causation requirements in Kenya' (n 9).

55 Climate Change Act Section 23(1).

56 Article 42 of the Constitution provides that every person has a right to clean and healthy environment, including the right to have the environment protected for the benefit of present and future generations.

57 Omuko-Jung, 'The evolving *locus standi* and causation requirements in Kenya' (n 9) 181.

3.1 Horizontal application of constitutional rights

One significant aspect is the possibility to enforce the Bill of Rights against private entities. The obligation to uphold the Constitution and the rights therein is placed not only on the state but also on private entities.⁵⁸ The Constitution provides that the Bill of Rights (which includes the right to clean and healthy environment) binds all state organs and *all persons*.⁵⁹ Article 260 defines *person* under the Constitution to include ‘a company, association or other body of persons whether incorporated or unincorporated.’⁶⁰ Consequently, the Bill of Rights binds companies, associations and other private entities and the courts have indeed confirmed that the Constitution allows for the enforcement of Bill of Rights against private entities.⁶¹ In fact, the courts consider the issue of whether the constitutional rights can be applied horizontally to be beyond peradventure and completely settled, but rather the real issue is to what extent the Bill of Rights should apply to private relationships.⁶²

On the extent of applicability of Bill of Rights to private relationships, the courts are reluctant to apply the Constitution directly to horizontal relationships where specific legislation exists to regulate the private relations in question.⁶³ Thus, if a matter can be decided on the basis of existing legislation or an alternative remedy without invoking the constitutional provisions as the foundation of the suit, then such alternative course of action should be adopted instead.⁶⁴ While it may be argued that the Climate Change Act (or even the environmental legislation)⁶⁵ provide a remedy, the

58 Constitution of Kenya Article 3(1). The provision mandates every person to respect, uphold and defend the Constitution. See also Omuko-Jung, ‘Climate change litigation in Kenya: Possibilities and potentiality’ (n 9).

59 Constitution of Kenya Article 20(1).

60 Ibid Article 260.

61 *Rose Wangui Mambo and 2 Others v Limuru Country Club and 17 Others* Pet 160 of 2013 (High Court at Nairobi) (2014) eKLR (69). The Court noted that to hold that private entities are insulated from the constitutional duty to respect and uphold fundamental rights would strip individual Kenyans of the very constitutional protection that the Constitution of Kenya 2010 meant jealously to guard and leave them exposed and vulnerable in private dealings. See also *B A & another v Standard Group Limited & 2 Others* Civil Appeal No 224 of 2012 (Court of Appeal at Nairobi) (2016) eKLR (34); *Baobab Beach Resort and Spa Limited v Duncan Muriuki Kaguuru & Another* Civil Appeal No 296 of 2014 (Court of Appeal at Nairobi) (2017) eKLR 6.

62 *Satrose Ayuma & 11 others v Registered Trustees of the Kenya Railways Staff Retirement Benefits Scheme & 3 others* Pet 65 of 2010 (High Court at Nairobi) (2013) eKLR (59); *Isaac Ngugi v Nairobi Hospital & 3 others* Pet 407 of 2012 (High Court at Nairobi) (2013) eKLR (22); *Baobab v Duncan* (n 61) 7-8.

63 *Ngugi v Nairobi Hospital* (n 62) para 23; *Baobab v Duncan* (n 61) 8.

64 *Baobab v Duncan* (n 61) 8.

65 Environmental Management and Coordination Act, 8 of 1999 (EMCA).

legislation itself makes a direct reference to the Constitution,⁶⁶ providing a reason to invoke constitutional rights as a basis for a climate suit against private entities.

Additionally, where a claim raises more than one causes of action, and one is based on violation of constitutional rights, then a claimant can still file a petition for enforcement of fundamental rights.⁶⁷ This means that a climate related claim, even if it raises other causes of action, could still be filed as a constitutional claim against private entities for violation of the right to clean and healthy environment. The fact that Section 23 of Climate Change Act particularly recognises that the application is pursuant to Article 70 of the Constitution strengthens this argument. Enforcement of environmental rights against private entities is further reinforced by Article 69(2) of the Constitution which particularly mandates *every person* to cooperate with the State to protect and conserve the environment.⁶⁸

3.2 Locus Standi

The *locus standi* requirement in public environmental cases (and particularly climate cases) is so relaxed in Kenya to the extent that a person does not need to demonstrate any personal interest or injury.⁶⁹ The inclusion of the right to clean and healthy environment in the Bill of Rights grants every person the right to institute court proceedings for the enforcement of the right.⁷⁰ One does not need to be specifically or directly affected by the violation – a person or an association can institute proceedings on behalf of another person or even acting in the public interest.⁷¹ This is augmented by Article 70 of the Constitution which grants any person the right to apply to court for redress for a violation or threat violation of the right to clean and healthy environ-

66 Climate Change Act Section 23(1) provides that an application under the provision is made pursuant to Article 70 of the Constitution.

67 *Baobab v Duncan* (n 61) 9. The case raised two causes of action, one for violation of fundamental rights and the other for defamation. Appellants raised an objection that the Respondent should have filed a civil claim for defamation as opposed to a constitutional petition. Both the High Court and Court of Appeal dismissed this argument holding that the conflation of both causes of action into one petition does not preclude the constitutional court from hearing it.

68 Constitution of Kenya Article 69(2).

69 For a discussion of standing requirements in Kenya, see Omuko-Jung, 'The evolving *locus standi* and causation requirements in Kenya' (n 9).

70 *Ibid* Article 22(1) and 258(1). See also Omuko-Jung, 'Climate change litigation in Kenya: Possibilities and potentiality' (n 9).

71 Constitution of Kenya Article 22(2) and 258(2). In *Mumo Matemu v Trusted Society of Human Rights Alliance & 5 others* Civil Appeal No 290 of 2012 (Court of Appeal at Nairobi) (2013) eKLR (28), the court held that the stringent *locus standi* requirements requiring some special interest by a private citizen to enforce public rights have been buried in the annals of history. The Supreme Court agreed with the court of appeal finding *on locus standi*. See *Mumo Matemu v Trusted Society of Human Rights Alliance & 5 others* Supreme Court Civil Appn No 29 of 2014 (2014) eKLR (78).

ment.⁷² For enforcing environmental rights, the claimant does not have to demonstrate that they or any other person has incurred loss or suffered injury.⁷³ This relaxed *locus standi* requirement is further cemented by the Climate Change Act which allows any person to apply to the ELC for enforcement of climate related rights and does away with the requirement to demonstrate any injury or loss.⁷⁴ This is a closely guarded principle by Kenyan courts that any attempt to challenge a petitioner's standing in environmental rights cases is never successful. A case in point is⁷⁵ *Joseph Leboo & 2 others v Director Kenya Forest Services & another*⁷⁶ which involved management of forests. The court pointed out that in environmental matters, *locus standi* as known and applied under the common law is not applicable.⁷⁷ Consequently, any person, without the need of demonstrating personal injury, has the freedom and capacity to institute an action aimed at protecting the environment.⁷⁸ Thus, claimants seeking compensation through human-rights approach are unlikely to face any challenge in showing they have *locus standi* to institute such a suit.

3.3 Proof of violations

To succeed under a constitutional claim, the claimant need to not only state the violations but also demonstrate the manner in which they have been violated.⁷⁹ For purposes of environmental rights, the claimant is required to show how the defendants' activities are causing emissions which are affecting the quality of the environment, which from a review of case law does not seem to be problematic.⁸⁰ A clean and healthy environment would be one that is devoid of dirt or anything harmful which

72 Constitution of Kenya Article 70(1).

73 Ibid Article 70(3). A provision similar to this exists in *Section 3 of EMCA* which provides for enforcement of environmental rights by a person on his behalf or on behalf of a group or class of persons, members of an association or in the public interest and that such a person shall have the capacity to bring an action notwithstanding that such they cannot show that the defendant's act or omission has caused or is likely to cause him any personal loss or injury.

74 Climate Change Act Section 23.

75 See, for instance, *Moffat Kamau & 9 others v Aelous Kenya Limited & 9 others* Pet 13 of 2015 (ELC at Nakuru) (2016) eKLR; *Joseph Leboo & 2 others v Director Kenya Forest Services & Another* ELC Case No 273 of 2013 (ELA at Eldoret) (2013) eKLR. For a comprehensive analysis of case law on *locus standi* in Kenya, see Omuko-Jung, 'The evolving *locus standi* and causation requirements in Kenya' (n 9).

76 ELC Case No 273 of 2013 (ELA at Eldoret) (2013) eKLR.

77 Ibid para 25.

78 Ibid para 28.

79 *Peter Michobo Muiru v Barclays Bank of Kenya Ltd & Another* Pet 254 of 2015 (High Court at Nairobi) (2016) eKLR (8), quoting *Anarita Karimi Njeru v Republic*, Nairobi HC Misc. Criminal Application 4 of 1979.

80 See Omuko-Jung, 'The evolving *locus standi* and causation requirements in Kenya' (n 9) 179; Omuko-Jung, 'Climate change litigation in Kenya: Possibilities and potentiality' (n 9).

may interfere with the physical or mental well-being of persons.⁸¹ Some of the factors that are deleterious to the environment as can be discerned from Part VIII of Environmental Management and Coordination Act (EMCA) include effluents, emissions, waste, and noxious smells among others.⁸² The courts have for instance found that the right to clean and healthy environment was threatened by a poorly damaged dumpsite due to air pollution and contamination of aquifer⁸³ or by a base communication transmitter which could impact the environment through electromagnetic waves.⁸⁴ Looking at jurisprudence and the EMCA definition, there is no reason why GHG emissions would not be considered as impacting on the quality of the environment and thus a threat to environmental rights. Furthermore, the impact of GHGs on the environment and ultimately to the wellbeing of humans is scientifically documented, which further supports the contention.⁸⁵

One of the things the Climate Change Act and the Constitution have done away with is the need to show injury to succeed in enforcing rights relating to climate change,⁸⁶ which also does away with the requirement of linking injuries to emissions from specific entities. The courts are quite lenient on proof of causation and even on evidence in matters relating to violation of the right to clean and healthy environment. For instance, in the case of a poorly managed dumpsite, the judge noted that,

The bigger danger is however in what the eyes cannot not see; the possible contamination of the aquifer underneath and of Lake Naivasha; the health risk to humans posed by pollution of the air and the soil; and also, the risk to the health of animals which ingest waste dumped at the site. Even without tangible evidence, this is a case that speaks for itself, *a res ipsa loquitur* situation. The dumpsite is clearly an environmental hazard.⁸⁷

On the basis of this, the judge found that the operation of the waste dumpsite was a violation of the right to clean and healthy environment not only of the petitioners but of the residents of the region and all persons in Kenya.⁸⁸ It was not necessary for the

81 *Adrian Kamotho Njenga v Council of Governors & 3 Others* ELC Pet 37 of 2017 (ELC at Nairobi) (2020) eKLR (22).

82 EMCA pt VIII.

83 *African Centre for Rights and Governance (ACRAG) & 3 Others v Municipal Council of Naivasha* Pet 50 of 2017 (ELC at Nakuru) (2017) eKLR.

84 *Ken Kasing'a v Daniel Kiplagat Kirui & 5 Others* Pet 50 of 2013 (ELC at Nakuru) (2015) eKLR.

85 See for example IPCC, *Global Warming of 1.5°C: An IPCC special report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty* (IPCC 2018); John H Knox, 'Linking human rights and climate change at the United Nations' (2009) 33 *Harvard Law Review* 477; John H Knox and Ramin Pejman (eds), *The human right to a healthy environment* (1st edn, Cambridge University Press 2018); Stephen Humphreys (ed), *Human rights and climate change* (Cambridge University Press 2009).

86 Climate Change Act Section 23(3); Constitution of Kenya Article 70(3). In both provisions, an applicant does not have to demonstrate that a person has incurred loss or suffered injury.

87 *ACRAG* (n 83) para 32.

88 *Ibid* para 33.

petitioners to provide evidence showing specific impacts of the dumpsite or that people have been injured as a result of the dumpsite.

In another case, the ELC found that the petitioner's right to clean and healthy environment had been violated by the erection of a telecommunication base transmitter station in the adjacent land.⁸⁹ While there was no scientific evidence presented on the likely impacts of the masts on the environment, the court was of the view that telecommunication base transmitter stations have potential to cause harm to the environment and to people as they 'may have a negative visual impact on the environment and propensity to harm, through emissions of electromagnetic waves.' Considering the precautionary approach courts take, it seems that even in climate cases, it may not be necessary to show that the emissions from respondents' activities have actually caused or likely to cause specific impacts that cause harm, but what would rather be important is to show that indeed the respondents' activities emit GHG emissions and the effects of GHG emissions on the quality of environment.⁹⁰ Consequently, there is no need for linking emissions to specific climate impacts which cause harm as required in many jurisdictions.

A violation of the right to clean and healthy environment could also arise where the defendant fails to comply with statutory or regulatory duties required of them.⁹¹ The courts have taken the view that where a procedure or a requirement for the protection of the environment is not complied with, then an assumption is drawn that the project is one that threatens or violates the right to clean environment.⁹² There is no need to show that the non-compliance has actually caused certain harm, but the mere non-compliance is sufficient. Further, Section 23 of the Climate Change Act provides for 'compensation to a victim of a violation relating to climate change duties.'⁹³ This provision envisages some statutory or regulatory climate change duties being imposed on both private and public bodies. Currently, the Environmental Management and Coordination (Air Quality) Regulations⁹⁴ prohibits owners or occupiers of facilities from causing emission of air pollutants in excess of the prescribed limits.⁹⁵ They are also required to install air pollution control technologies to mitigate GHGs and to monitor the emissions.⁹⁶

89 *Ken Kasinga* (n 84) para 74.

90 For a discussion of the precautionary approach taken by courts in Kenya and the likely impacts on climate change litigation, see Omuko-Jung, 'The evolving *locus standi* and causation requirements in Kenya' (n 9).

91 *Ibid* 184.

92 *Ken Kasinga* (n 84) para 73; *Moffat Kamau* (n 75) paras 90-91 and 95.

93 Climate Change Act Section 23(2)(c).

94 Legal Notice No 34 of 2014 (Air Quality Regulations).

95 *Ibid* reg 14(1)(b) and 15. The Second Schedule includes GHGs as priority air pollutants subject to the regulations.

96 *Ibid* reg 16.

Additionally, under Section 16 of Climate Change Act, climate change obligations may be imposed on private entities by the Climate Change Council,⁹⁷ including the obligation to report on their emissions and performances.⁹⁸ Entities may soon be required to report on their emissions and develop emission reduction plans and show improvement in the next reporting period. The Council may even set emission reduction limits for entities⁹⁹ as currently done under the Air Quality Regulations.¹⁰⁰ Non-compliance with emission limits would thus form a basis for a violation of environmental rights as well as a suit under Section 23 of Climate Change Act. This would also be the case where for instance the companies fail to develop emission reduction plans as per the regulations or do not show improvement from previous reporting periods.

3.4 Award of compensation

Where the defendants' actions are found to violate the petitioners' (or any other persons') right to clean and healthy environment, a remedy of compensation can be awarded by the court. The Climate Change Act and the Constitution both provide for the remedy of compensation to a victim of violations, with the former providing specifically for violation of climate change duties and the latter for violation of the right to clean and healthy environment.¹⁰¹ In both cases, the petitioner does not need to demonstrate that anyone has incurred a loss or suffered injury.¹⁰² An interpretation of these two provisions mean that where a court recognises that a person's right has been violated, they can order for compensation even where no tangible loss or injury can be shown. Kenyan courts have not been shy in granting this remedy for violation of the right to clean and healthy environment despite the petitioners not proving injuries.¹⁰³

97 The Climate Change Council is a body established under Section 5 of the Climate Change Act and mandated with climate policy coordination and oversight in the country. See Climate Change Act Sections 5 and 6.

98 Ibid Section 16. As at the time of writing this Chapter, the Climate Change Council had not been set up and consequently, such regulations required by the Climate Change Act had not been enacted.

99 One of the functions of the Council is to set targets for regulation of GHG emissions. The National Environmental Management Authority (NEMA) is designated to monitor compliance by entities of climate change obligations and to regulate and enforce compliance with GHG emissions levels set by Council. The information and reports on entities performance may be accessed by any person upon request to the Council or Climate Change Directorate. See *ibid* 6(h), 17 and 24.

100 Air Quality Regulations reg 16 and Third Schedule.

101 Constitution of Kenya Article 70(2)(c); Climate Change Act Section 23(2)(c).

102 Constitution of Kenya Article 70(3); Climate Change Act Section 23(3).

103 See, for instance, *Ken Kasinga* (n 84).

This grants a leeway to claim for general damages which may usually be awarded to a plaintiff who has suffered no ascertainable damage.¹⁰⁴ This was the case in *Ken Kasing'a* where the court granted the petitioner general damages in recognition that his rights were duly infringed despite the petitioner not showing any specific injury as a result of the violation.¹⁰⁵ Similarly, in *Michael Kibui*,¹⁰⁶ the court granted the petitioners compensation for breach of their right to clean and healthy environment. The court reached a conclusion that the petitioners had suffered damage that required compensation by the Respondent's breach of their right to a clean and healthy environment by causing water, air and noise pollution and excessive vibrations, without any evidence of any injury as a result of the breach.¹⁰⁷ It therefore seems that for compensatory claim based on the constitutional rights, there is no need to show any injury or loss suffered from respondent's emissions or from global warming generally – once the violation is recognised, the court can grant damages. The petitioner may however be required to make submissions on the nature and quantum of such damages.¹⁰⁸

The problem, however, is that there are no clear rules or guidelines on compensation for violation of environmental rights and this is usually a matter of judicial discretion. There is a lack of a clear jurisprudence on when and how much compensation is due for environmental rights violations. Conflicting jurisprudence can, for instance, be seen in the two cases – *Ken Kasinga* and *Moffat Kamau*. In the former, the Petitioner was awarded damages despite no proof of loss or injury from the violation, simply in recognition that his right to clean and healthy environment had been infringed.¹⁰⁹ In the latter, the court did not grant damages because the Petitioners had not shown any loss suffered as a result of the violation.¹¹⁰ Some courts also require the petitioners to make specific submissions on the nature and quantum of such compensation, failure to which compensation is denied,¹¹¹ while others use their discretion to determine the quantum of damages.¹¹² Finally, there is also no clear jurispru-

104 *National Land Commission v Estate of Sisiwa Arap Malakwen & Another* ELC Case No 112 of 2016 (ELC at Eldoret) (2017) eKLR 12.

105 *Ken Kasinga* (n 84) para 85.

106 *Michael Kibui & 2 others (suing on their own behalf as well as on behalf of the inhabitants of Mwamba Village of Uasin Gishu County) v Impresa Construzioni Giuseppe Maltauro SPA & 2 others* Pet 1 of 2012 (ELC at Eldoret) (2019) eKLR.

107 *Ibid* para 63.

108 *Martin Osano Rabera & another v Municipal Council of Nakuru & 2 others* Pet 53 of 2012 (ELA at Nakuru) (2018) eKLR (79). The court declined to grant compensation because no submissions were made on the nature and quantum of such compensation. This finding is however different from other cases such as *Ken Kasinga* (n 84) where compensation was granted despite no submissions being made on the quantum.

109 *Ken Kasinga* (n 84) para 85.

110 *Moffat Kamau* (n 75) para 102.

111 *Martin Osano* (n 108) para 79.

112 *Ken Kasinga* (n 84) para 76; *Michael Kibui* (n 106) para 63.

dence on what the courts take into account when assessing the quantum of damages. The courts have been awarding varying amounts without explaining how the quantum is reached or what factors are considered in determining the quantum.¹¹³ Considering this jurisprudence, a claimant in climate compensatory suit may still need to provide evidence of injury or loss from climate related violations and enumerate the extent of injury arising from such violations.

4 Conclusion

Climate lawsuits based on public law are generally considered easier to navigate compared to private lawsuits. This route is, however, not explored by litigants in climate compensatory claims, as such suits in various jurisdictions have largely been based on private law. The private law avenue on the other hand seems to have so far failed litigants in obtaining compensation for climate violations. This chapter has shown that climate suits based on the right to a clean and healthy environment supported by Section 23 of the Climate Change Act offers possibilities of obtaining damages in Kenya.

One of the strengths of the Kenyan legal system is the liberalisation of the legal standing requirement as relates to enforcement of environmental rights, which allows any person to institute a suit against private entities for enforcement of rights relating to climate change without the need to show injury. Regarding causation, the fact that the petitioners do not have to demonstrate that a person has been injured and the precautionary approach taken by courts does away with the need to show how the defendant's emissions contributed to occurrence of an event that injured or is likely to injure the plaintiff. What is necessary for recognition of the violation is that the defendants' activities are impacting on the quality of the environment or alternatively, that the defendant has breached statutory requirements as relates to the environment or climate change duties. Once this is recognised, there is a possibility of the victim being awarded damages in recognition of the violation. Again here, there is no need to show any losses or injuries. However, considering the ambiguity on when and how much compensation is due, it may be useful to provide evidence of injuries or losses arising from climate change and, as far as possible, enumerate the extent of those injuries and the likely contribution of the defendant's activities.

113 For instance, in *Ken Kasinga* (n 84) para 76, the court awarded Kshs. 10,000 (equivalent to about 100USD) while in *Michael Kibui* (n 106) paras 63 & 66, the court ordered the respondent to pay each petitioner Kshs. 30,000 (about 300USD). In the latter case, which was filed by 3 petitioners on their behalf and on behalf of inhabitants of a village, it is unclear whether the compensation for 'each petitioner' meant also the inhabitants on whose behalf the suit was filed or only the 3 petitioners. For further analysis, see Omuko-Jung, 'The evolving *locus standi* and causation requirements in Kenya' (n 9) 186.

Bibliography

- Banda ML and Fulton S, 'Litigating climate change in national courts: Recent trends and developments in global climate law' (2017) 47 *Environmental Law Reporter* 10121.
- Belleville M and Kennedy K, 'Cool lawsuits: Is climate change litigation dead after *Kivalina v ExxonMobil?*' (2012) 7 *Appalachian Natural Resources Law Journal* 51.
- Bouwer K, 'Substantial Justice?: Transnational Torts as Climate Litigation' (2021) 15 *Carbon & Climate Law Review* 188.
- Byers M, Franks K and Gage A, 'Internalization of climate damages litigation' (2017) 7 *Washington Journal of Environmental Law & Policy* 264.
- Chirwa DM, 'The horizontal application of constitutional rights in a comparative perspective' (2006) 10 *Law, Democracy & Development* 21.
- Dana DA, 'The mismatch between public nuisance law and global warming' (2010) 18 *Supreme Court Economic Review* 9.
- Farber DA, 'Adapting to climate change: Who should pay' (2007) 23 *Journal of Land Use & Environmental Law* 1.
- Gage A et al., 'Taking climate justice into our own hands: A model Climate Compensation Act' (West Coast Environmental Law 2005) <<https://bit.ly/3wJoWTy>> accessed 20 October 2018.
- Heede R, 'Tracing anthropogenic carbon dioxide and methane emissions to fossil fuel and cement producers, 1854-2010' (2014) 122 *Climatic Change* 229.
- Hoegh-Guldberg O et al., 'Impacts of 1.5°C of global warming on natural and human systems' in Masson-Delmotte V et al. (eds), *Global warming of 1.5°C: An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty* (IPCC 2018).
- Humphreys S (ed), *Human rights and climate change* (Cambridge University Press 2009).
- IPCC, *Global warming of 1.5°C: An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty* (Cambridge University Press 2018).
- Johnson N, '*Native Village of Kivalina v ExxonMobil Corp*: Say goodbye to federal public nuisance claims for greenhouse gas emissions' (2013) 40 *Ecology Law Quarterly* 557.
- Knox JH, 'Linking human rights and climate change at the United Nations' (2009) 33 *Harvard Law Review* 477.
- and Pejan R (eds), *The human right to a healthy environment* (1st edn, Cambridge University Press 2018).
- Kysar DA, 'What climate change can do about tort law' (2011) 4 *Environmental Law* 1.
- McCormick S et al., 'Science in litigation, the third branch of U.S. climate policy' (2017) 357 *Science* 979.
- Miller ME, 'The right issue, the wrong branch: Arguments against adjudicating climate change nuisance claims' (2010) 109 *Michigan Law Review* 257.
- Omuko-Jung LA 'Applying the precautionary principle to address the "proof problem" in climate change litigation' (2016) 21 *Tilburg Law Review* 52.
- , 'Climate change litigation in Kenya: Possibilities and potentiality' in Sindico F and Mbegue MM (eds), *Comparative climate change litigation: Beyond the usual suspects*. Vol 47 (1st edn, Springer International Publishing 2021).

- , ‘The evolving *locus standi* and causation requirements in Kenya: A precautionary turn for climate change litigation?’ (2021) 15 *Carbon & Climate Law Review* 171.
- Owen DG, ‘The five elements of negligence’ (2007) 35 *Hofstra Law Review* 1671.
- Peel J, ‘Issues in climate change litigation’ (2011) 5 *Climate Law Review* 15.
- Pfommer T et al., ‘Establishing causation in climate litigation: Admissibility and reliability’ (2019) 152 *Climatic Change* 67.
- Preston BJ, ‘Climate change litigation (Part 1)’ (2011) 5 *Carbon & Climate Law Review* 3.
- Puig D et al., ‘The adaptation finance gap report’ (United Nations Environment Programme (UNEP) 2016).
- Sabin Centre for Climate Change Law, ‘Climate change litigation databases’ <<http://climatecasechart.com/>> accessed 15 June 2020.
- Salzman J and Hunter D, ‘Negligence in the air: The duty of care in climate change litigation’ (2007) 156 *University of Pennsylvania Law Review* 101.
- Sang B, ‘Tending towards greater eco-protection in Kenya: Public interest environmental litigation and its prospects within the new constitutional order’ (2013) 57 *Journal of African Law* 29.
- Spitzer M and Burtscher B, ‘Liability for climate change: Cases, challenges and concepts’ (2017) 2017 *Journal of European Tort Law* 166.
- Stuart-Smith RF et al., ‘Increased outburst flood hazard from Lake Palcacocha due to human-induced glacier retreat’ (2021) 14 *Nature Geoscience* 85.
- Wright RW, ‘Causation, responsibility, risk, probability, naked statistics, and proof: Pruning the bramble bush by clarifying the concepts’ (1988) 73 *Iowa Law Review* 1001.

Cases

African (Kenyan and Nigerian) cases:

- Adrian Kamotho Njenga v Council of Governors & 3 Others* ELC Pet 37 of 2017 (ELC at Nairobi) (2020) eKLR.
- African Centre for Rights and Governance (ACRAG) & 3 Others v Municipal Council of Naivasha* Pet 50 of 2017 (ELC at Nakuru) (2017) eKLR.
- B A & another v Standard Group Limited & 2 Others* Civil Appeal No 224 of 2012 (Court of Appeal at Nairobi) (2016) eKLR (34).
- Baobab Beach Resort and Spa Limited v Duncan Muriuki Kaguuru & Another* Civil Appeal No 296 of 2014 (Court of Appeal at Nairobi) (2017) eKLR 6.
- Gbemre v Shell Petroleum Dev Co Nigeria Ltd & Others* No FHC/B/CS/53/05 (Fed High Ct 14 Nov 2005) (Nigeria).
- Isaac Ngugi v Nairobi Hospital & 3 others* Pet 407 of 2012 (High Court at Nairobi) (2013) eKLR (22).
- Joseph Leboo & 2 others v Director Kenya Forest Services & Another* ELC Case No 273 of 2013 (ELA at Eldoret) (2013) eKLR.
- Ken Kasing’a v Daniel Kiplagat Kirui & 5 Others* Pet 50 of 2013 (ELC at Nakuru) (2015) eKLR.
- Martin Osano Rabera & another v Municipal Council of Nakuru & 2 others* Pet 53 of 2012 (ELA at Nakuru) (2018) eKLR.

A rights-basis for climate compensatory claims in Kenya

Michael Kibui & 2 others (suing on their own behalf as well as on behalf of the inhabitants of Mwamba Village of Uasin Gishu County) v Impresa Construzioni Giuseppe Maltauro SPA & 2 others Pet 1 of 2012 (ELC at Eldoret) (2019) eKLR.

Moffat Kamau & 9 Others v Aelous Kenya Limited & 9 others Pet 13 of 2015 (ELC at Nakuru) (2016) eKLR.

Mumo Matemu v Trusted Society of Human Rights Alliance & 5 Others Civil Appeal No 290 of 2012 (Court of Appeal at Nairobi) (2013) eKLR (28).

Mumo Matemu v Trusted Society of Human Rights Alliance & 5 Others Supreme Court Civil Appn No 29 of 2014 (2014) eKLR (78).

National Land Commission v Estate of Sisiwa Arap Malakwen & Another ELC Case No 112 of 2016 (ELC at Eldoret) (2017) eKLR.

Peter Michobo Muiru v Barclays Bank of Kenya Ltd & Another Pet 254 of 2015 (High Court at Nairobi) (2016) eKLR.

Rose Wangui Mambo and 2 Others v Limuru Country Club and 17 Others Pet 160 of 2013 (High Court at Nairobi) (2014) eKLR (69).

Satrose Ayuma & 11 Others v Registered Trustees of the Kenya Railways Staff Retirement Benefits Scheme & 3 Others Pet 65 of 2010 (High Court at Nairobi) (2013) eKLR (59).

European cases

Essen Regional Court Case No 2 O 285/15 (unofficial English translation available at the Sabin Centre Climate Change Litigation Database <<http://climatecasechart.com/climate-change-litigation/non-us-case/liiuya-v-rwe-ag/>> accessed 28 September 2021).

State of the Netherlands v Urgenda Foundation (2019) ECLI:NL:HR:2019:2007 (Supreme Court of the Netherlands).

T-330/18 - Armando Carvalho and Others v The European Parliament and the Council (2019) ECLI:EU:T:2019:324.

Pakistani case

Leghari v Federation of Pakistan WP No 25501/2015 (Lahore High Ct Green Bench 2015).

UK case

Gouriet v Union of Postal Office Workers (1977) AC 43 500.

US and Canadian cases

American Electric Power Co v Connecticut 564 US 410 (2011).

City of New York v BP p.l.c (2018) SDNY 1:18-cv-00182, 325 F Supp 3d 466.

City of Oakland v BP PLC (2018) 325 F Supp 3d 1017 (ND Cal).

Comer v Murphy Oil USA, Inc (2007) SD Miss No 07-60756, 2007 WL 6942285.

Comer v Murphy Oil USA (2009) 585 F3d 855 (5th Cir) 23.

Evans v Newton 382 US 296, 299 (1966).

Lujan v Defenders of Wildlife 504 US 555 (1992).

Massachusetts v Environmental Protection Agency 549 US 497 (2007).

Native Village of Kivalina v Exxonmobil Corp 663 F Supp 2d 863 (ND Cal2009).

Native Village of Kivalina v ExxonMobil Corp 696 F3d 849 (9th Cir 2012).

Lydia A Omuko-Jung

Palsgraf v Long Island Railroad 162 NE 99 (NY 1928) (opinion of Justice Cardozo).

Retail, Wholesale and Department Store Union v Dolphin Delivery Ltd (1986) S.C.R. 573.

State of Connecticut et al. v American Electric Power Company, Inc et al. (2005) SDNY 1:04-cv-05669-LAP, 406 F Supp 2d 265.

Wheat v Sofamor, SNC 46 F Supp 2d 1351(ND Ga 1999).

South Africa: Climate change, responsibility and liability – the legal system, public and private law considerations

Oliver C Ruppel

‘Climate change is the apartheid of our times.’

The Late Desmond Tutu, 2019¹

Abstract

The 2018 water crisis (labelled as ‘day zero’) in Cape Town was only one example of how severely South Africa is facing the realities of climate change. In fact, the whole African continent is most vulnerable to the impacts of climate change due to a multitude of factors, which shall briefly be highlighted before introducing the fascinating legal pluralistic system of South Africa.

South Africa has been under democracy premised on the supremacy of its Constitution, which became operational after the end of apartheid. Today, South Africa’s 1996 Constitution is globally recognised as an instrument inducing major social change grounded in law, achieving substantive justice in a new democratic setting, creating a society, which is totally different from the past in terms of the relationship between the law, public institutions and the people.

The Constitution gives effect to South Africa’s international law obligations and the commitment on climate change, which is not only reflected by South Africa’s accession to most climate related international law instruments, including the 2015 Paris Agreement, but also its extensive formulation of national climate change policies over the past decade.

For South Africa, the Paris Agreement puts national laws into an African and global context, enabling litigants to construe governments’ commitments and actions as adequate or inadequate. South Africa’s climate change response, as is explicitly indicated in the Nationally Determined Contribution (NDC), is informed by the findings of the Intergovernmental Panel on Climate Change (IPCC).

South Africa has a considerate climate responsibility, which is not only displayed in the international climate negotiations but also in the national regulatory framework on climate change, which will be analysed in context. Moreover, recent South Afri-

1 Statement in the Financial Times of 3 October 2019 by Nobel Peace Prize award-winner Desmond Tutu (1931-2021), who was a renowned South African Anglican cleric known for his staunch opposition to the policies of apartheid, cf. <www.ft.com/content/9e4befae-e083-11e9-b8e0-026e07cbe5b4> accessed 2 May 2020.

can case law developments shall be discussed while highlighting the contemporary climate policy regime alongside public and private law liability remedies.

1 Introduction

The Republic of South Africa is home to more than 55 million people.² It is located at the southern tip of the African continent, bordered by Botswana, Mozambique, Namibia, Lesotho, Swaziland and Zimbabwe. There are a number of factors that contribute to the geostrategic relevance of South Africa. One of these factors is that South Africa is arguably the most developed country in Africa, with very important ports and an exceptionally well-functioning infrastructure. Further, South Africa is also a weighty political actor on the continent, being one of the few African countries ranked as an upper-middle income country and the only African country with a G20 seat.³ Moreover, South Africa is one of the few emerging economies in Africa and a member of BRICS.⁴ BRICS proclaims to be committed to playing its part in the global fight against climate change and to contribute to the global effort in dealing with climate change issues through sustainable and inclusive growth, and not by capping development.⁵

The per head CO₂ emissions in South Africa are thirty times higher than in countries such as Kenya and forty percent in excess of the EU average.⁶ South Africa has a buoyant coal-to-gas conversion industry, which meets approximately 30% of its domestic transportation fuel-oil demand needs. The economy has always been highly

2 The World Bank, 'Population, total – South Africa' <<https://bit.ly/3Djjb03>> accessed 28 March 2022.

3 South Africa is the only African country in the G20, and it must often walk the fine line of speaking for the continent's interests without imposing its voice on its neighbours, cf. SAIIA, 'The G20's Africa Problem' (SAIIA, 3 December 2018) <<https://saiia.org.za/research/the-g20s-africa-problem/>> accessed 2 May 2020.

4 The BRICS Partnership is a grouping of leading emerging economies, namely Brazil, the Russian Federation, India, China and South Africa, playing a growing role in the world economy.

5 Oliver C Ruppel and Tina Borgmeyer, 'The BRICS partnership from a South African perspective: Sustainable development space in a new global governance' in Muna Ndulo and Steve Kayizzi-Mugerwa (eds) *Financing innovation and sustainable development in Africa* (Cambridge Scholars Publishing 2018) 282-306.

6 Belynda Petrie et al., 'Multi-level climate governance in South Africa. Catalysing finance for local climate action' (OneWorld Sustainable Investments, Sustainable Energy Africa and adelphi 2018) <www.adelphi.de/en/system/files/mediathek/bilder/Multi-level%20climate%20governance%20in%20South%20Africa%20-%20adelphi.pdf> accessed 11 June 2020.

reliant on coal,⁷ which is the country's largest economically recoverable energy resource and among its three top mineral export earners.⁸

Although South Africa's economy is the second largest in Africa, 35.3% of the population is unemployed, and approximately half (49.2%) of the adult population live below the upper-bound poverty line. It is the most unequal country in the world in terms of income distribution.⁹ In many ways, the legacy of apartheid endures. Previously disadvantaged South Africans hold fewer assets, have fewer skills, earn lower wages and are more likely to be unemployed.¹⁰

Africa is most vulnerable to climate change,¹¹ and in South Africa, climate change already poses multiple challenges¹² to economic growth and sustainable development and the various facets of human security.¹³ Climate change amplifies existing risks and creates new risks for natural and human systems. While such risks are unevenly distributed and generally greater for disadvantaged people and communities, South Africa – ever since the end of apartheid – has been struggling to find and implement a roadmap to address distributive injustices of the past. In this light, anthropogenic climate change poses a threat to the most vulnerable populations, requiring an effec-

-
- 7 Jan Glazewski, 'Legal and regulatory aspects of carbon capture and storage: A developed and developing country perspective' in Oliver C Ruppel, Christian Roschmann and Katharina Ruppel-Schlichting (eds), *Climate change: International law and global governance Volume I: Legal responses and global responsibility* (Nomos Law Publishers 2013) 933-956, 933.
 - 8 Republic of South Africa, 'National Development Plan 2030. Our future-make it work' (Republic of South Africa 2012) at <<https://bit.ly/3iK2ZLY>> accessed 28 March 2023, 164.
 - 9 Cf. <<https://bit.ly/3LpTuhg>> for unemployment rate fourth quarter 2021; <<http://www.statssa.gov.za/?p=12075>> for poverty-related figures and for figures on income distribution see <<https://bit.ly/35mq9oq>> and <<https://data.oecd.org/inequality/income-inequality.htm>>. All sites accessed 30 March 2022.
 - 10 The World Bank, 'Overcoming poverty and inequality in South Africa: An assessment of drivers, constraints and opportunities (March 2018)' at <<https://bit.ly/3wK8McC>> accessed 28 March 2022.
 - 11 Isabelle Niang et al., 'Africa' in IPCC, *Climate change 2014: Impacts, adaptation, and vulnerability. Part B: Regional aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press 2014) 1199-1265.
 - 12 Impacts of climate change are the effects on natural and human systems of extreme weather and climate events and of climate change. Impacts generally refer to effects on lives, livelihoods, health, ecosystems, economies, societies, cultures, services, and infrastructure due to the interaction of climate changes or hazardous climate events occurring within a specific time period and the vulnerability of an exposed society or system. Impacts are also referred to as consequences and outcomes. The impacts of climate change on geophysical systems, including floods, droughts, and sea level rise, are a subset of impacts called physical impacts; See IPCC, *Climate change 2014: Synthesis report – contribution of working groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* <<https://bit.ly/3qllGDT>> accessed 28 March 2022, 5.
 - 13 Oliver C Ruppel, 'Climate change, natural disasters and human security: International law and diplomacy responses from an African perspective' (2012) *Zanzibar Yearbook of Law (ZYBL)* 3-25.

tive, progressive and well-coordinated response with a view to the country's development goals.¹⁴

The Sustainable Development Goals (SDGs) were adopted in 2015, the same year as the Paris Agreement, and include urgent action to combat climate change and its impacts. The context of development is critical to implementing and achieving climate goals in South Africa and elsewhere. As highlighted in its National Development Plan (NDP) 2030, South Africa faces a triple development challenge of poverty, inequality and unemployment.¹⁵ SDG 13 commits South Africa to take action against climate change and the effects that greenhouse gas emissions cause.¹⁶ South Africa has embarked on the implementation of all SDGs within the context of existing regional and national strategic plans – such as the African Union's Agenda 2063¹⁷ and NDP 2030.

By adopting the 2030 Agenda, South Africa is committed 'to leave no one behind' in the implementation of the SDGs. This means that the specific vulnerability needs must be addressed for sustained, inclusive and sustainable economic growth and social progress.¹⁸ Yet, South Africa still faces significant challenges in terms of its SDG 13 progress. Overall, South Africa ranks 107th in the implementation of the SDGs, so it is clearly at the back of the pack in terms of progress and lags behind the regional progress average.¹⁹

While the socio-economic consequences of COVID-19 are still highly uncertain, it is without doubt that South Africa will be more highly indebted than prior to the crisis.²⁰ Still, the NDP sets out the road map addressing South Africa's priorities for the years to come. Its overarching aim is to eliminate poverty and reduce inequality by 2030 by ensuring, amongst other priorities, a transition to an environmentally sustainable, climate change resilient, low carbon economy and just society. The NDP

14 BusinessTech, 'South Africa has a new Climate Change Bill – here's what you need to know' (11 June 2018) <<https://businesstech.co.za/news/energy/250747/south-africa-has-a-new-climate-change-bill-heres-what-you-need-to-know>> accessed 28 March 2022.

15 Republic of South Africa, 'South Africa: First Nationally Determined Contribution under the Paris Agreement. Updated September 2021' <<https://bit.ly/3wNAs02>> accessed 28 March 2022.

16 Katherine Lofts et al., 'Brief on Sustainable Development Goal 13 on taking action on climate change and its impacts: Contributions of international law, policy and governance' (2017) 13 *MJSDL-RDDDM* 183, 185.

17 Agenda 2063 articulates a Pan-African vision of integration, solidarity and unity on a continental level, but it also calls for coordination and cooperation in mutually beneficial partnerships between regions and continents to enable the realisation of this African vision.

18 Cf. United Nations Department of Economic and Social Affairs, 'Leaving no one behind' (17 August 2018) <<https://bit.ly/3LpgQDY>> accessed 29 April 2022.

19 Jeffrey Sachs et al., *Sustainable Development Report 2021* (Cambridge University Press 2021) 37.

20 South Africa: First Nationally Determined Contribution under the Paris Agreement. Updated September 2021 (n 15).

identifies climate change as a major factor that will influence the context in which South Africa operates.²¹

South Africa is both vulnerable to climate change impacts and a major greenhouse gas emitter due to its dependency on coal for energy and the high-emissions mining and industrial sectors. Struggling to overcome the historically rooted challenges of inequality and poverty, the country is highly exposed to the effects of climate change [...].²²

This demands attention and needs to be addressed through mechanisms that can assist in its regulation. The consecutive sections in this chapter aim to first introduce (certain aspects of) South Africa's climate vulnerability and its legal system before dissecting its legal position in relation to climate change on the national level while also highlighting international law obligations.

2 'Day zero'

South Africa's climate vulnerability was exemplarily underlined by the 2018 occurrence of 'day zero'. Then South Africa's 'Mother City',²³ the city of Cape Town

declared a disaster area after the worst drought in almost a century, following its driest three consecutive wet seasons in 2015-2017. Cape Town's drought was extreme, with 'day zero' water storage months away, causing severe water rationing to Cape Town's ~3.8 million population.²⁴

The term 'day zero' was coined as a result of three successive years of feeble rainfall and the continually increasing demand for water as a result of rapid population growth, expanded agriculture and tourism activities. In January 2018, city authorities announced that a 'day zero' would be expected to occur 'in mid-April when dam levels were expected to drop to 10% and taps in residential areas would be turned off'.²⁵ Experts had warned on the possibility of this drought²⁶ and after the an-

21 Republic of South Africa, National Development Plan 2030. Our Future – make it work (n 8) 197.

22 Alina Averchenkova, Kate Elizabeth Gannon and Patrick Curran, 'Governance of climate change policy: A case study of South Africa' (Grantham Research Institute on Climate Change and the Environment and Centre for Climate Change Economics and Policy, London School of Economics and Political Science 2019), available at <<https://bit.ly/3iFuLZR>> accessed 28 March 2022.

23 The city of Cape Town is the second most populated city in South Africa. It is known for being one of the most beautiful cities in the world with a rich and colourful history. Cape Town is often referred to as 'the Mother City' as it is South Africa's oldest city established in 1652.

24 Michael B Richman and Lance M Leslie, 'The 2015-2017 Cape Town drought: Attribution and prediction using machine learning' (2018) 114 *Procedia Computer Science* 248-257, 248.

25 Pedro M Sousa et al., 'The 'day zero' Cape Town drought and the poleward migration of moisture corridors' (2018) 13(12) *Environmental Research Letters* 1-11, 1.

nouncement of the possibility of a ‘day zero’ water restrictions were put in place that meant that residents would be allowed 50 litres of water per day reducing daily consumption by 25% to around 500 million litres per day.²⁷

[The] total collapse of the city’s water system resulted in a situation whereby water was no longer perceived as an inert substance that simply flowed through underground pipes. Instead [...] water became a material substance that needed much ‘coaxing’ and ‘pressure’ for it to flow smoothly.²⁸

What had previously been a distant concept had suddenly become a certainty. The reality of water scarcity had become prevalent,²⁹ and much more attention was afforded to the vulnerability aspect and linking environmental issues to human security and socio-economic predicaments, which are exacerbated by climate change.³⁰ The newly established narrative around ‘day zero’ changed the vulnerability perceptions amongst communities within the city of Cape Town, the Western Cape Province, and South Africa at large.

3 Selected specificities of the South African legal system

The following passages are meant to serve as an introduction for the reader who may not be familiar with South Africa’s recent history and especially the legal setup of the country. The list of ‘selected specificities’ is most obviously neither complete nor does it claim to be comprehensive in any sense.

26 Steven Robins, “‘Day zero’, hydraulic citizenship and the defence of the commons in Cape Town: A case study of the politics of water and its infrastructures (2017-2018)’ (2019) 45(1) *Journal of Southern African Studies* 5, 6.

27 Sousa et al. (n 25) 1.

28 Robins (n 26) 8.

29 Julian S Yates and Leila M Harris, ‘Hybrid regulatory landscapes: The human right to water, variegated neoliberal water governance, and policy transfer in Cape Town, South Africa, and Accra, Ghana’ (2018) 110 *World Development* 75, 82.

30 Oliver C Ruppel and Mark B Funteh ‘Climate change, human security and the humanitarian crisis in the Lake Chad Basin region: Selected legal and developmental aspects with a special focus on water governance’ in Patricia Kameri-Mbote et al. (eds), *Law | Environment | Africa*. Publication of the 5th Symposium, 4th Scientific Conference, 2018 of the Association of Environmental Law Lecturers from African Universities in cooperation with the Climate Policy and Energy Security Programme for Sub-Saharan Africa of the Konrad-Adenauer-Stiftung and UN Environment (Vol 38, *Nomos, Law and Constitution in Africa*, 2019) 99-128, 128.

3.1 A 'long walk to freedom'

The progression towards South Africa's current constitutional dispensation was a 'long walk to freedom'.³¹ Colonisation, settlement and apartheid were major influences on the multi-faceted nature of South Africa's legal system, and the introduction of the Constitution meant an extensive change to South Africa's previous legal system.

Prior to colonisation in any form, South Africa's people were self-governed by Chiefs and traditional leaders chosen by the people.³² The year 1652 brought Jan van Riebeeck to the shores of South Africa, where a 'refreshment station for the merchant ships of the Dutch East India Company at the Cape of Good Hope' was established.³³ The Dutch brought with them their own established law that was rooted in Roman law principles.³⁴ South Africa's 'Roman-Dutch system of law' was then applied in the newly established colony at the Cape, and subsequently developed and applied throughout South Africa (and beyond).³⁵ Roman-Dutch law was, however, not the sole contributor to the South African legal system.³⁶ With South Africa's next colonisation by the British in 1806, the Roman-Dutch legal influence did not dissipate but rather mix with that of British law.³⁷ The South African legal system was henceforth founded on different but complementary legal traditions.³⁸

Today, South African law consists of the Constitution, legislation, judicial precedent, the common law (rules developed from Roman-Dutch and British authorities), (African) customary law and international law.³⁹ Some have even referred to an 'Af-

31 Long Walk to Freedom was also the title of an autobiography written by South African President Nelson Mandela, which he first published in 1994, which is also the year, which brought the formation of a democratic government demarcating the end of apartheid. Apartheid was the Afrikaans name given by the white-ruled South Africa's Nationalist Party in 1948 to the country's institutionalised system of racial segregation.

32 Ignatius M Rautenbach, *Rautenbach-Malherbe constitutional law* (6th edn, LexisNexis Butterworths 2012) 13; Nigel Worden, *The making of modern South Africa conquest, apartheid, democracy* (5th edn, John Wiley & Sons 2012) 9; Gerrit Pienaar, 'The methodology used to interpret customary land tenure' (2012) 15 PELJ 152, 153.

33 Rena van den Bergh, 'The remarkable survival of Roman-Dutch law in nineteenth-century South Africa' (2012) 18(1) *Fundamina: A Journal of Legal History* 71.

34 *Ibid* 72.

35 Oliver C Ruppel and Katharina Ruppel-Schlichting, 'The hybridity of law in Namibia and the role of community law in the Southern African Development Community (SADC)' in James AR Nafziger (ed), *Comparative law and anthropology* (Edward Elgar Publishing 2017) 31-71, 31.

36 Harry Rajak, 'A virile living system of law: An exploration of the South African legal system' (2011) 61 *Focus*, 44; Pienaar (n 32) 153.

37 Max Loubser, 'Linguistic factors into the mix: The South African experience of language and the law' (2003) 78(2) *Tulane Law Review* 105, 113.

38 Rajak (n 36) 45.

39 Rautenbach (n 32) 19.

ricanisation of Roman-Dutch law in twenty-first century South Africa'.⁴⁰ Customary law or indigenous law is the generic term used to denote the laws of the indigenous African communities of South Africa.⁴¹ Sections 30 and 31 of the Constitution grant the right to participate in language⁴² and culture of choice, which supports the adoption of various African cultures and traditions within formal legal institutes.⁴³

Customary law, which was seen as inferior to common law under colonised structures, was not given equal treatment. The so-called 'repugnancy clause' was implanted in South African law with the Natal Ordinance 5 of 1849, where customary law was only recognised under the condition that it was 'not repugnant to the general principles of humanity recognised throughout the whole civilised world'.⁴⁴ It was in many African countries that only after independence, that

[a]fter generations of missionaries, anthropologists and lawyers, whose first interest was to force African customary law into the procrustean bed of either the bible, civilisation or a western paradigm of rule of law, African customary law begins to breathe again: to breathe the air of Africa.⁴⁵

Today, under the 1996 constitutional dispensation, customary law is on the same hierarchical footing with the common law.⁴⁶ In *Alexkor Ltd v Richtersveld Community*,⁴⁷ the Constitutional Court stated:

40 Reinhard Zimmermann and Daniel Visser (eds), *Southern cross: Civil law and common law in South Africa* (Juta & Co, 1996) 15.

41 Rautenbach (n 32) 5.

42 South Africa has 11 official languages, while in the past only English and Afrikaans were official languages used in governmental affairs, which excluded large parts of population who had little or no languages proficiency in those languages. The 1996 Constitution gave official status to all the major languages of South Africa: In terms of Section 6(1) (t)he official languages of the Republic are Sepedi, Sesotho, Setswana, siSwati, Tshivenda, Xitsonga, Afrikaans, English, isiNdebele, isiXhosa and isiZulu. Section 6(2) provides that (r)ecognising the historically diminished use and status of the indigenous languages of our people, the state must take practical and positive measures to elevate the status and advance the use of these languages. Interestingly in Section 6(5) a Pan South African Language Board has been established by national legislation to promote, and create conditions for, the development and use of *inter alia* all official languages and for all languages commonly used by communities in South Africa, including among others German, Greek, Portuguese, Arabic and Hebrew.

43 Thomas W Bennett, 'Conflict of laws' in Jan C Bekker, Johan MT Labushagne and Louis P Vorster (eds), *Introduction to legal pluralism in South Africa* (Butterworth's Publishers 2002) 24.

44 Olaf Zenker, 'Mind the gaps: Renegotiating South African legal pluralism with the post-apartheid state' in Katrin Seidel and Hatem Elliesie (eds), *Normative spaces and legal dynamics in Africa* (Routledge 2020).

45 Werner Menski, 'Flying kites in Africa: Legal pluralism in a plural world' in Oliver C Ruppel and Gerd Winter (eds), *Legal pluralism in Africa and beyond. Liber amicorum Manfred O Hinz in celebration of his 75th birthday; Recht von innen: Rechtspluralismus in Afrika und anderswo. Festschrift Manfred O Hinz anlässlich seines 75. Geburtstages* (Dr. Kovac Law Publishers 2011) 141-157, 143.

46 John A Faris, 'African customary law and common law in South Africa: Reconciling contending legal systems' (2015) 10(2) *International Journal of African Renaissance Studies - Multi-, Inter- and Transdisciplinary* 171, 175; Christa Rautenbach, 'Deep legal pluralism in South Af-

While in the past indigenous law was seen through the common law lens, it must now be seen as an integral part of our law. Like all law it depends for its ultimate force and validity on the Constitution. Its validity must now be determined by reference not to common-law, but to the Constitution.

South Africa and other countries in southern Africa⁴⁸ are made up of a melting pot of cultures, religions and community practices that make up the complex and all-encompassing nature of the legal system.⁴⁹ This system is mirrored by the constitutional inclusion of customary law, Roman-Dutch law and British common law in pluralistic practice.⁵⁰ This plurality of laws makes the South African legal system an object of fascination to comparative lawyers as well as to legal ethnologists and sociologists. This plurality, including

customary law and indigenous knowledge into climate change policies is likely to contribute to the development of more effective adaptation strategies that are cost-effective, participatory and sustainable. After all, indigenous people have always been tasked to develop flexible mechanisms to cope with climatic conditions and their vulnerability.⁵¹

Section 39(2) of the Constitution regulates that when interpreting any legislation, and when developing the common law or customary law, every court, tribunal or forum must promote the spirit, purport and objects of the Bill of Rights. According to Section 39(3) the Bill of Rights does not deny the existence of any other rights or freedoms that are recognised or conferred by common law, customary law or legislation, to the extent that they are consistent with the Bill.⁵² Chapter 12 of the Constitution

rica: Judicial accommodation of non-state law' (2010) 60 *Journal of Legal Pluralism and Unofficial Law* 143, 144.

47 *Alexkor Ltd and Another v Richtersveld Community and Others* (CCT19/03) (2003) ZACC 18; 2004 (5) SA 460 (CC); 2003 (12) BCLR 1301 (CC) (14 October 2003) para 51.

48 Oliver C Ruppel and Katharina Ruppel-Schlichting, 'Legal and judicial pluralism in Namibia and beyond: A modern approach to African legal architecture?' (2011) 64 *Journal of Legal Pluralism and Unofficial Law* 33-63.

49 Hanri du Plessis, 'Legal pluralism, uBuntu and the use of open norms in the South African common law of contract' (2019) 22 *PELJ* 1, 15.

50 *Ibid.*

51 Oliver C Ruppel and Ifejika Speranza, 'The international, African and regional institutional, legal and policy framework of climate change' in AMCEN, *Addressing climate change challenges in Africa – a practical guide towards sustainable development* (United Nations Environment Programme 2011) 170-202, 200.

52 'Culture – no doubt – can strengthen and validate human rights perspectives; however, certain customary norms and practices may also be found in violation of the Bill of Rights. Yet, one should not be too hasty, making sweeping judgements of African customary practices from the outside; rather, one should try to see the customs from the viewpoints of the people who practise them'; taken from Oliver C Ruppel 'Introduction' in Oliver C Ruppel (ed), *Women and custom Namibia: Cultural practice versus gender equality?* (Macmillan Education Namibia 2008) 21-25, 23. For concrete examples regarding harmful practice and norms and for further references see Lotta N Ambunda and Willard T Mugadza, 'The protection of children's rights in Namibia: Law and policy' in Oliver C Ruppel (ed), *Children's rights in Namibia*. (Macmillan Education Namibia, 2009) 5-51, 18; Oliver C Ruppel and Lotta N Ambunda, *The Justice sector and the rule of law in Namibia: Framework, selected legal aspects and cases* (Namibia Institute for Democracy and Human Rights and Documentation Centre 2011) 76-99.

deals with the role and recognition of traditional leaders. And as per Section 211(3) of the Constitution, the courts must apply customary law when that law is applicable, subject to the Constitution and any legislation that specifically deals with customary law. This makes good sense, as customary law can play an important role in the sustainable development of natural resources and the protection of biological diversity as it incorporates a broad knowledge of ecosystems relationships.⁵³ It can also provide a basis for indigenous communities to address issues of poverty and food security in an increasingly global society.⁵⁴

3.2 Constitutionalism and democratisation

South Africa's journey in terms of constitutionalism and democratisation was propelled in 1990 with the unbanning of prohibited political parties and the release or return of anti-apartheid leaders.⁵⁵ Today, South Africa's democracy is premised on the supremacy of its Constitution, which became operational after the first democratic elections at the end of apartheid in 1994 and with the implementation of the Interim Constitution of 1993.⁵⁶ The Interim Constitution also mandated the Constitutional Court to act as guardian of the post-apartheid constitutional dispensation.⁵⁷ Between 1994 and 1996, the Constitutional Assembly concentrated on the drafting of the final Constitution, which was approved in 1996 and took effect as of 1997.⁵⁸ South Africa's final 1996 Constitution is recognised globally as an instrument inducing major social change through non-violent processes grounded in law, achieving substantive justice in a new democratic setting, creating a society that is totally different from the past in terms of the relationship between the law, public institutions and the people.⁵⁹

The preamble to the 1996 Constitution records that the people of South Africa recognise the injustices of South Africa's past and adopted the Constitution to heal

53 Manfred O Hinz and Oliver C Ruppel, 'Biodiversity conservation under Namibian environmental law' in Ute Schmiedel and Norbert Jürgens (eds), *Biodiversity in Southern Africa Volume 2: Patterns and processes at regional scale* (Klaus Hess Publishers 2010) 190-194.

54 Ruppel and Speranza (n 51) 200.

55 Rautenbach (n 32) 16.

56 Act 200 of 1993.

57 Kierin O'Malley 'The 1993 Constitution of the Republic of South Africa – The Constitutional Court' (1996) 8(2) *Journal of Theoretical Politics* 177-191.

58 Previously 'Constitution of the Republic of South Africa, Act 108 of 1996', substituted by Section 1(1) of the Citation of Constitutional Laws, 2005 (Act 5 of 2005); <www.justice.gov.za/legislation/constitution/SACConstitution-web-eng.pdf> accessed 20 May 2020.

59 Oliver C Ruppel, 'Constitutionalism and constitutional reform: Selected aspects from a regional perspective' in Oliver C Ruppel, Kathrin M Scherr and Alexander D Berndt (eds), *Assessing progress in the implementation of Zimbabwe's new Constitution. National, regional and global perspectives* (Law and Constitution in Africa Vol. 32, Nomos 2017) 51-83, 51.

divisions of the past; to establish a ‘society based on democratic values, social justice and fundamental human rights’; and to ‘improve the quality of life of all citizens and free the potential of each person’. Sections 1 and 2 of the Constitution provide that the Constitution is the supreme law of the land and that ‘law or conduct inconsistent with it is invalid, and the obligations imposed by it must be fulfilled’.

The Bill of Rights contained in Chapter 2 of the Constitution enshrines the rights of all people in South Africa and affirms ‘the democratic values of human dignity, equality and freedom’. Section 7(2) provides that ‘the State must respect, promote, protect and fulfil the rights in the Bill of Rights’. Section 8(1) states that ‘[the] Bill of Rights applies to all law, and binds the legislature, the executive, the judiciary and all organs of state’. According to Section 8(2), ‘a provision of the Bill of Rights binds a natural or a juristic person if, and to the extent that, it is applicable, taking into account the nature of the right and the nature of any duty imposed by the right.’ These provisions of the Constitution read together indicate that the Constitution is applicable in all contexts and to all levels of government.

Section 36 of the Constitution provides that the fundamental rights may be limited only in terms of a law of general application, and then only to the extent that the limitation is reasonable and justifiable in an open and democratic society based upon human dignity, equality and freedom. In considering whether a limitation is reasonable and justifiable, the Constitution requires all relevant factors to be considered, including the nature of the right, the importance of the purpose of the limitation, the nature and extent of the limitation, the relation between the limitation and its purpose, and less restrictive means available to achieve the purpose.⁶⁰

Section 167(3)(a) informs that the Constitutional Court is South Africa’s highest court on constitutional matters. Its jurisdiction – the scope of its authority to hear cases – is restricted to constitutional matters and issues connected with decisions on constitutional matters. Chapter 8 of the Constitution, entitled ‘Courts and Administration of Justice’, sets out the structure of South Africa’s court system and defines the role of each court.⁶¹

60 Halton Cheadle, ‘Limitation of rights’ in Halton Cheadle, Dennis Davies and Nicholas Hayson (eds), *South African constitutional law: The Bill of Rights* (LexisNexis 2005) 30-8(1) to 30-18.

61 According to Section 165 the judicial authority of South Africa is vested in the courts, which are independent and subject only to the Constitution and the law. And Section 166 identifies these courts as the Constitutional Court; the Supreme Court of Appeal; the High Courts; the Magistrates’ Courts; and any other court established or recognised by an Act of parliament.

3.3 The rule of precedent

The South African legal system follows the rule of precedent, whereby a court is bound by its own previous decisions or the decision of a higher court. Judicial precedent is established by decisions of court and provides that previous court decisions are seen as authoritative rather than merely persuasive. The structure of courts is therefore important in determining precedent. The Latin maxim *stare decisis et non quieta movere* (henceforth ‘stare decisis’) means to ‘stand by previous decisions’ or ‘to stand by decisions and not to disturb settled law’. Judicial precedent emerges when new rules or legal principles are established in particular judgements, which does not happen in every case. Often judicial precedent is applied as is from previous judgements where the courts deem appropriate. If, in a given case, there is no precedent sufficiently addressing the issue in question, the court may then take to establish precedent to be used by future courts in similar instances.⁶²

In the case of *Camps Bay Ratepayers’ and Residents’ Association v Harrison*,⁶³ the Constitutional Court found:

The doctrine of precedent not only binds lower courts but also binds courts of final jurisdiction to their own decisions. These courts can depart from a previous decision of their own only when satisfied that that decision is clearly wrong. Stare decisis is therefore not simply a matter of respect for courts of higher authority. It is a manifestation of the rule of law itself, which in turn is a founding value of our Constitution. To deviate from this rule is to invite legal chaos.

Moreover, courts are bound by precedent unless the facts of a matter are not materially the same as those in a previous matter or where the decision of the previous court is manifestly incorrect.⁶⁴ Therefore, and for greater fairness and legal certainty, courts are bound by their own decisions unless and until they are overruled by a superior court. It is, however, conceivable that circumstances arise that would render it possible for a court to override its own legal opinion.⁶⁵

3.4 Progressive realisation of socio-economic rights

According to Article 2 of the International Covenant on Economic, Social and Cultural Rights (ICESCR)⁶⁶ and also in terms of the Constitution, there is a recognition that socio-economic rights have to be realised over time, and the progress towards

62 Tracy Humby et al. (eds), *Introduction to law and legal skills in South Africa: Jurisprudence* (Oxford University Press 2012) 152.

63 *Camps Bay Ratepayers and Residents Association and Another v Harrison and Another* (CCT 18/10) (2010) ZACC 19; 2011 (2) BCLR 121 (CC); 2011 (4) SA 42 (CC) (4 November 2010) para 28.

64 Humby et al. (n 62) 218.

65 Peter Havenga et al. (eds), *General principles of commercial law* (4th edn, Juta Law 2002) 8ff.

66 Available at < <https://bit.ly/3HQe6Q> > accessed 28 March 2022.

full realisation is dependent on the availability of resources.⁶⁷ Sections 26, 27 and 29 of the Constitution make specific reference to progressive realisation: According to Section 26(1) '[e]veryone has the right to have access to adequate housing', while Section 26(2) stipulates that '[t]he state must take reasonable legislative and other measures, within its available resources, to achieve the progressive realisation of this right'. Similarly, Section 27(1) provides that '[e]veryone has the right to have access to health care services, including reproductive health care; sufficient food and water; and social security, including, if they are unable to support themselves and their dependents, appropriate social assistance'. Section 27(2) again proclaims that '[t]he state must take reasonable legislative and other measures, within its available resources, to achieve the progressive realisation of each of these rights'. And Section 29(1) provides '[e]veryone with the right to a basic education, including adult basic education; and to further education, which the state, through reasonable measures, must make progressively available and accessible'.

In light of these provisions,

the progressive realisation qualification requires a state to strive towards fulfilment and improvement in the enjoyment of socio-economic rights to the maximum extent possible, even in the face of resource constraints. A state's performance in terms of the progressive realisation would depend on, among other things, both the actual socio-economic rights people enjoy at a given moment as well as the society's capacity of fulfilment.⁶⁸

In order to progressively realise certain rights, finances are not the only determining resource. Policy efforts, socio-economic indicators, livelihood and context of individuals rights and monitoring methods are among others relevant.⁶⁹ Though progressive realisation is largely dependent on an increase in resources, it is coupled with the utilisation and development of available resources that allows for progressive realisation.⁷⁰

Where available resources are demonstrably inadequate, the obligation remains for a state to strive to ensure the widest possible enjoyment of the relevant rights under the prevailing circumstances; and vulnerable members of society must be protected by the adoption of relatively low-cost programmes. The progressive realisation obligation is therefore not completely eliminated due to resource constraints, because resource constraints alone cannot justify inaction.⁷¹

Within South Africa's current legal structure, citizens who feel aggrieved by the state's failure (or inaction) to realise their socio-economic rights can approach the

67 Lillian Chenwi, 'Unpacking "progressive realisation", its relation to resources, minimum core and reasonableness, and some methodological considerations for assessing compliance' (2013) 46 *De Jure* 742, 743.

68 *Ibid.*

69 Thandiwe Matthews and Daniel McLaren, 'Budget analysis for advancing socio-economic rights' (Studies in Poverty and Inequality Institute 2016) <<https://bit.ly/3qIZmdk>> accessed 28 March 2022.

70 Limburg Principles on the Implementation of the ICESCR UN doc E/CN4/ 1987/17, Annex, paras 23-24.

71 Chenwi (n 67) 750.

courts for redress.⁷² In the case of *Government of the Republic of South Africa v Grootboom and Others*⁷³ the Constitutional Court reiterated the role of the ICESCR and the obligation to move as expeditiously and effectively as possible toward the goal of the full realisation of such rights.

In the case of *Mazibuko and Others v the City of Johannesburg and Others*,⁷⁴ the Constitutional Court highlighted that progressive realisation of rights is based on a scale of reasonableness, namely that the state is required to do everything that is reasonably necessary for citizens to realise their rights.⁷⁵ This would mean that in terms of resource availability, the state would be required to utilise whatever resources (both internal resources and external resources) at its disposition in order for citizens to realise their rights.⁷⁶ Progressive realisation of rights is therefore not a short term exercise but rather a continuous task in the full realisation of constitutional democracy.

In *Minister of Health and Others v Treatment Action Campaign and Others*,⁷⁷ the Constitutional Court acknowledged how the South African government faces enormous strains in achieving rights pertaining to access to education, land, housing, health care, food, water and social security, specifically in relation to the country's past. However, this does not minimise the obligations imposed by the Constitution, ensuring the state takes reasonable legislative and other measures within its available resources to achieve the progressive realisation of each of these rights.

South Africa, also in terms of its international human rights treaty obligations, is obligated to mobilise and allocate the maximum available resources for the progressive realisation of economic, social and cultural rights, as well as the advancement of civil and political rights and the right to development. Addressing climate change in the aforementioned context should complement ongoing efforts to pursue the full realisation of such rights while minimising the negative impacts of climate change for the benefit of the poor and most vulnerable.⁷⁸

72 Abraham Klaasen 'The quest for socio-economic rights: The rule of law and violent protest in South Africa' (2020) 28 Sustainable Development <<https://doi.org/10.1002/sd.2038>> accessed 21 March 2020.

73 *Government of the Republic of South Africa and Others v Grootboom and Others* (CCT11/00) (2000) ZACC 19; 2001 (1) SA 46; 2000 (11) BCLR 1169 (4 October 2000).

74 *Mazibuko and Others v City of Johannesburg and Others* (CCT 39/09) (2009) ZACC 28; 2010 (3) BCLR 239 (CC); 2010 (4) SA 1 (CC) (8 October 2009).

75 Sue-Mari Viljoen and Saul P Makama, 'Structural relief – a context sensitive approach' (2018) 34(2) SAJHR 209, 216.

76 Chenwi (n 67) 749.

77 *Minister of Health and Others v Treatment Action Campaign and Others* (CCT8/02) (2002) ZACC 15; 2002 (5) SA 721; 2002 (10) BCLR 1033 (5 July 2002) (4).

78 Cf. submission of the Office of the High Commissioner for Human Rights to the 21 Conference of the Parties to the United Nations Framework Convention on Climate Change, available at <www.ohchr.org/Documents/Issues/ClimateChange/COP21.pdf> accessed 23 June 2020.

3.5 Ubuntu

Ubuntu is an ethical concept relating to the overarching conception of African humanism. The concept essentially encompasses the basic ideals of group solidarity, respect, human dignity, compassion, mutual unity and conformity to basic norms.⁷⁹ While it has been recognised as a legal value with distinctive jurisprudential significance, it is not legally enforceable as an independent rule.⁸⁰

Ubuntu relates to various African laws and regulations, such as Article 28 of the African Charter on Human and Peoples' Rights, which imposes an affirmative obligation of mutual respect and tolerance between individuals for the purpose of good relations with other citizens. In this endeavour, the role of culture plays an enormous role, also when shifting the human rights narrative to a morally justified and socially diverse model.⁸¹

In South Africa, the concept of *Ubuntu* has a fairly long history in the countries' public discourse. Since the 1920s, *Ubuntu* has been used by *Inkatha*⁸² as part of its campaign to revive traditional values, and, even before 1993, it had been co-opted into the more general discourses of theology and corporate governance. The word first entered South African law in a 'postamble' to the 1993 Interim Constitution,⁸³ and the South African Constitutional Court has considered the meaning and content of the concept:

Ubuntu inspires much of South Africa's constitutional compact, which emphasises the communal nature and the idea of humaneness, social justice and fairness. *Ubuntu* envelopes the key values of group solidarity, compassion, respect, human dignity, conformity to basic norms and collective unity.⁸⁴

In this sense, responsiveness and accountability in the traditional African sense must be thought of in terms of a community's best interests, not necessarily individual

79 B Obinna Okere 'The protection of human rights in Africa and the African Charter on Human and Peoples' Rights: A comparative analysis with the European and American systems' (1984) 6(2) Human Rights Quarterly 141-159, 148.

80 Elsabé Boshoff and Samrawit Getaneh Damtew 'Children's rights to sustainable development under the African human rights framework' in *African human rights law yearbook* (Vol 3, Pretoria University Law Press 2020) 119-141.

81 Sabelo Ndwandwe, 'Rights-recognition theory: An African perspective' in Olga Bialostocka (ed), *Agenda 2063: Culture at the heart of sustainable development* (HSRC Press 2018) 79-92.

82 *Inkatha* (meaning 'crown' in the isiZulu language) is a cultural organisation established in the 1920s by the Zulu people, which constitute the largest ethnic group in South Africa.

83 Thomas W Bennett, 'Africanising the common law: IMBIZO/leKGOTLA/PITSO and the principle of public participation' in Oliver C Ruppel and Gerd Winter (eds), *Legal pluralism in Africa and beyond. Liber amicorum Manfred O Hinz in celebration of his 75th Birthday; Recht von innen: Rechtspluralismus in Afrika und anderswo. Festschrift Manfred O Hinz anlässlich seines 75. Geburtstages* (Dr. Kovac Law Publishers 2011) 178-192, 178.

84 *Everfresh Market Virginia (Pty) Ltd v Shoprite Checkers (Pty) Ltd* (CCT 105/10) (2011) ZACC 30; 2012 (1) SA 256 (CC); 2012 (3) BCLR 219 (CC) (17 November 2011) para 71.

preferences.⁸⁵ In the case of *State v Makwanyane and Another*, Justice Mokgoro described Ubuntu as expressing itself as describing ‘the significance of group solidarity on survival issues so central to the survival of communities’.⁸⁶

Generally, Ubuntu translates as humaneness. In its most fundamental sense, it translates as personhood and morality. Metaphorically, it expresses itself in *umuntu ngumuntu ngabantu*,⁸⁷ describing the significance of group solidarity on survival issues so central to the survival of communities. While it envelops the key values of group solidarity, compassion, respect, human dignity, conformity to basic norms and collective unity, in its fundamental sense, it denotes humanity and morality. Its spirit emphasises respect for human dignity, marking a shift from confrontation to conciliation. In South Africa, *Ubuntu* has become a notion with particular resonance in the building of democracy. It is part of our ‘rainbow’ heritage, though it might have operated and still operates differently in diverse community settings. In the Western cultural heritage, respect and the value for life manifested in the all-embracing concepts of humanity and *menswaardigheid*⁸⁸ are also highly prized [...].

It has been argued that *Ubuntu* should be considered as a constitutional value⁸⁹, and as a culture it should inform sustainable development in terms of social transformation in the spirit of harmonisation.⁹⁰ While climate change poses a global survival issue with overriding priorities to eliminate poverty and eradicate inequality, *Ubuntu*

respects all nations, peoples, and cultures. It recognises that it is in our national interest to promote and support the positive development of others. Similarly, national security would therefore depend on the centrality of human security as a universal goal, based on the principle of *Batho Pele* (putting people first). In the modern world of globalisation, a constant element is and has to be our common humanity. We therefore champion collaboration, cooperation and building partnerships over conflict. This (reflects the) recognition of our interconnectedness and interdependency, and the infusion of *Ubuntu* into the South African identity.⁹¹

4 Climate change governance and legislation

As early as 1748, in chapter 16⁹² of his work ‘*De l’Esprit des Lois*’ (the spirit of law), Montesquieu analysed the connection between ‘climate and law’.⁹³ His thesis

85 Bennett (n 83) 192.

86 *S v Makwanyane and Another* (CCT3/94) (1995) ZACC 3; 1995 (6) BCLR 665; 1995 (3) SA 391; (1996) 2 CHRLD 164; 1995 (2) SACR 1 (6 June 1995) para 307.

87 isiZulu ‘a person is a person because of people’ or ‘I am because other people are’.

88 Afrikaans ‘human dignity’.

89 *Dikoko v Mokhatla* (CCT62/05) (2006) ZACC 10; 2006 (6) SA 235 (CC); 2007 (1) BCLR 1 (CC) (3 August 2006).

90 Jacqueline Church, ‘Sustainable development and the culture of Ubuntu’ (2012) *De Jure* 511-531, 530.

91 Republic of South Africa, ‘Building a better world: The diplomacy of Ubuntu: White Paper on South Africa’s Foreign Policy’ (13 May 2011) <<https://bit.ly/3uC5XaG>> accessed 28 March 2022.

92 Chapter 16 ‘Lois dans le rapport qu’elles ont avec la nature du climat’ (on the laws in their relation to the nature of the climate) in Charles de Montesquieu, *De l’Esprit des Lois* (1st edn, Barrillot et Fils 1748).

can be summarised as follows: Climate is a determinant factor of human life,⁹⁴ it has an impact on the human spirit and consequently – among other conditions – on the legal system of a society. Thus, the ideal legislator – according to Montesquieu – must anticipate the conditions of nature in order to develop the society in the best possible way.⁹⁵

Although there has been attention given to the matter of climate change in the South African legal structure, it is ‘work in progress’. An effective response to the issue of climate change requires a nationally led and directed holistic effort, which goes beyond what has conventionally been observed as the area of ‘environmental’ governance to almost every sector of national government, including energy and industry, transport, trade, human settlements and migration, health, agriculture and fisheries, mining and water.⁹⁶

South African governance of climate change can be found in legislation and policy documents that deal, directly or indirectly, with the issue. Compared to the active and developing policy and strategic climate change responses developed by the government to date, the law remains stagnant in addressing climate change,⁹⁷ as there is still a lack of fully concerted legislation in South Africa.

4.1 Section 24 of the Constitution

Section 24 calls for the need to safeguard sustainable ecological development and natural resource use in a way that continues to promote socio-economic development.⁹⁸ Sections 152(1)(c), 153(a)⁹⁹, 184(1)(b)¹⁰⁰ and 195(1)(b)(c)¹⁰¹ of the Constitution inter alia reiterate the need for sustainable development.

93 Oliver C Ruppel, ‘Climate law and climate science: Joint enabler of a new climate enlightenment?’ in Eva Schulev-Steindl, Oliver C Ruppel and Ferdinand Kerschner (eds), *Climate law – current opportunities and challenges: Essays from the official opening of ClimLaw: Graz*. (Series on Legal Perspectives on Global Challenges Vol 6, Eleven International Publishing 2021) 55-71.

94 Reimar Müller, ‘Montesquieu über Umwelt und Gesellschaft – die Klimatheorie und ihre Folgen’ (2005) 80 *Sitzungsberichte der Leibniz-Sozietät* 19-32.

95 See Lisa J Piergallini, ‘An empirical investigation of Montesquieu’s theories on climate’ (2016) 10(6) *World Academy of Science, Engineering and Technology International Journal of Economics and Management Engineering* 2017-2028, 2017.

96 Olivia Rumble, ‘Climate change legislative development on the African continent’ in Patricia Kameri-Mbote et al. (eds), *Law | Environment | Africa*. Publication of the 5th Symposium, 4th Scientific Conference, 2018 of the Association of Environmental Law Lecturers from African Universities in cooperation with the Climate Policy and Energy Security Programme for Sub-Saharan Africa of the Konrad-Adenauer-Stiftung (Law and Constitution in Africa Vol. 38, Nomos 2019) 33-60, 35.

97 Rumble (n 96) 35.

98 Section 24(b)(iii) of the Constitution.

The protection of the environment is a constitutional prerogative¹⁰² – not only in South Africa. Section 24¹⁰³ of the Constitution includes an environmental right into the Bill of Rights, providing that ‘everyone has the right to an environment that is not harmful to their health or wellbeing and to have the environment protected through reasonable legislative measures.’ Section 24 further provides that the environment should be protected for current and future generations through reasonable legislative measures and additional measures that prevent pollution and ecological degradation, promote conservation and secure ecologically sustainable development and use of natural resources, while promoting justifiable economic and social development.

Section 24 reflects both a right and a corresponding responsibility, and although not explicitly mentioned, Section 24 indirectly relates to climate change in that it is harmful to the environment and can lead to harm of citizens through their health and well-being being implicated as a result of climate change. This shows that climate change impacts the right afforded to citizens in Section 24 as it is affecting the ability of the government to afford such a right successfully. Further, climate change is a result of pollution and leads to ecological degradation, suggesting that there is a need for legislation that relates to climate change specifically due to relation to and impact of the right afforded in Section 24. Section 24 requires the South African government to address climate change and its corresponding impacts.¹⁰⁴

Section 24 is anthropocentric in nature and can be asserted vertically against the state. Whether the environmental right also applies horizontally, i.e., whether it can be invoked in private disputes, is subject to debate. Section 24 not only contains a fundamental right but also enshrines cultural and socio-economic aspects in Section 24(b) of the Constitution. Of particular importance regarding natural resources is

99 ‘A municipality must: (a) structure and manage its administration and budgeting and planning processes to give priority to the basic needs of the community, and to promote the social and economic development of the community [...]’.

100 The South African Human Rights Commission must: ‘(b) promote the protection, development and attainment of human rights [...]’.

101 ‘(1) Public administration must be governed by the democratic values and principles enshrined in the Constitution, including the following principles: (b) Efficient, economic and effective use of resources must be promoted. (c) Public administration must be development-oriented.’

102 Joseph A Amougou, Patrick M Forghab and Oliver C Ruppel, ‘Le cadre juridique du changement climatique au Cameroun’ in Oliver C Ruppel and Emmanuel D Kam Yogo (eds), *Environmental law and policy in Cameroon – towards making Africa the tree of life* (Law and Constitution in Africa Vol. 37, Nomos 2018) 713-730, 713.

103 ‘Everyone has the right –
(a) to an environment that is not harmful to their health or well-being; and
(b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that-
(i) prevent pollution and ecological degradation;
(ii) promote conservation; and
(iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.’

104 Michael Kidd, *Environmental law* (2nd edn, Juta & Co 2011) 324.

Section 24(b)(iii), according to which measures need to be taken to prevent pollution and ecological degradation; to promote conservation; and to secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.¹⁰⁵ Such measures include legislative measures in the form of statutory law, but also other measures implemented by the executive branch, such as policies and programmes – which shall briefly be introduced below.

4.2 The National Environmental Management Act¹⁰⁶

The National Environmental Management Act (NEMA) can be considered the framework for environmental legislation and was created to give effect to the right afforded by Section 24 of the Constitution. As such, NEMA is the backbone of South African environmental law. While the Constitution itself is silent on what the term ‘environment’ entails, Section 1 of NEMA defines the environment as

the surroundings within which humans exist and that are made up of: (i) the land, water and atmosphere of the earth; (ii) micro-organisms, plant and animal life; (iii) any part or combination of (i) and (ii) and the inter-relationships among and between them; and (iv) the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and wellbeing.

The purpose of NEMA is to provide for co-operative environmental governance through the establishment of principles from which decision-making on environmental matters can be based, to provide institutions that will promote co-operative governance and procedures for coordinating environmental functions that are to be exercised by the organs of state, as well as to provide for certain aspects of the administration and enforcement of other environmental management laws and matters connected with such.¹⁰⁷

NEMA contains a number of principles in Section 2 that are to be applied through South Africa to the actions of all organs of state that may have a significant effect on the environment. These principles shall apply alongside all other appropriate and relevant considerations, including the State’s responsibility to respect, protect, promote and fulfil the social and economic rights in Chapter 2 of the Constitution and, in particular, the basic needs of categories of persons disadvantaged by unfair discrimination; serve as the general framework within which environmental management and implementation plans must be formulated: serve as guidelines by reference to which any organ of state must exercise any function when taking any decision in terms of this Act or any statutory provision concerning the protection of the envi-

105 *BP Southern Africa (Pty) Limited v MEC for Agriculture, Conservation, Environment and Land Affairs* (03/16337) (2004) ZAGPHC 18 (31 March 2004).

106 Act 107 of 1998.

107 Kidd (n 104) 36.

ronment; serve as principles by reference to which a conciliator appointed under this Act must make recommendations; and guide the interpretation, administration and implementation of this Act, and any other law concerned with the protection or management of the environment.

According to Section 2(2) NEMA ‘environmental management must place people and their needs at the forefront of its concern and serve their physical, psychological, developmental, cultural and social interests equitably’. Environmental management must be integrated, acknowledging that all elements of the environment are linked and interrelated, and it must take into account the effects of decisions on all aspects of the environment and all people in the environment by pursuing the selection of the best practicable environmental option. Section 2(3) NEMA stipulates that development must be socially, environmentally and economically sustainable. According to Section 2(4), environmental justice must be pursued so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons. Equitable access to environmental resources, benefits and services to meet basic human needs and human well-being must be pursued, and special measures may be taken to ensure access thereto by categories of persons disadvantaged by unfair discrimination. The social, economic and environmental impacts of activities, including disadvantages and benefits, must be considered, assessed and evaluated, and decisions must be appropriate in the light of such consideration and assessment. Global and international responsibilities relating to the environment must be discharged in the national interest.

According to Section 2(4)(o) NEMA, the environment is held in public trust for the people, meaning that the beneficial use of environmental resources must serve the public interest, and the environment must be protected as the people’s common heritage. With this adoption of the ‘public trust doctrine’, ‘the state has had conferred upon it the obligation to act as either trustee or custodian of the environment or a specific natural resource, whilst the environment or that particular natural resource has been bequeathed to the people of South Africa.’¹⁰⁸ Therefore, the state is the custodian of natural resources on behalf of the people, which should foster a notion of entitlement amongst the South African population. The doctrine also gives effect to the internationally accepted right of the state to exercise sovereignty over natural resources.¹⁰⁹

South Africa’s environmental impact assessment (EIA) regime is regulated in Chapter 5 of NEMA (on Integrated Environmental Management) and therein governed by Sections 23 to 24 NEMA and – of most practical relevance – the Environ-

108 Elmarie van der Schyff, ‘Unpacking the public trust doctrine: A journey into foreign territory’ (2010) 13(5) PELJ 122-159, 122.

109 *Xstrata South Africa (Pty) Ltd and Others v SFF Association* (326/2011) (2012) ZASCA 20; 2012 (5) SA 60 (SCA) (23 March 2012).

mental Impact Assessment Regulations. The EIA is South Africa's key regulatory instrument to mitigate and/or manage the impacts of new developments and activities that are considered to potentially impact the right to an environment that is not harmful to health and well-being. In 2014, the One Environmental System (OES) was introduced, which brought mining-related environmental impacts under the NEMA legislative framework. This is most relevant for mining-related applications for environmental authorisation, such as prospecting, exploration, extraction and primary processing of a mineral or petroleum resource or any activities directly related thereto.¹¹⁰ The Environmental Impact Assessment Regulations and listing notices 1, 2 and 3 were published in 2014.¹¹¹

Further, due to NEMA being the framework to enforce Section 24 of the Constitution, it also has a link to climate change. NEMA can be found to indirectly assist in the control and regulation of climate change in South Africa, although it does not expressly refer to climate change. Further practical implications of NEMA shall be discussed in more detail below.

4.3 The National Environmental Management: Air Quality Act¹¹²

The National Environmental Management: Air Quality Act (NEMAQA) contains no direct reference to climate change. However, it addresses greenhouse gas emissions and provides that an atmospheric emission license must contain greenhouse gas emission measurement and reporting requirements, which could assist in holding large contributors liable and monitor the volume of emissions that South Africa submit into the atmosphere. The Act intends to reform the law regulating air quality in order to protect the environment by providing reasonable measures for the prevention of pollution and ecological degradation and for securing ecologically sustainable development while promoting justifiable economic and social development; to provide for national norms and standards regulating air quality monitoring, management and control by all spheres of government; for specific air quality measures; and for matters incidental thereto.¹¹³

The Act deals with so-called priority air pollutants. Greenhouse gas emissions are considered such priority air pollutants, which have to be specifically regulated by means of pollution prevention plans, particularly relevant to climate change.¹¹⁴ The

110 Cf. Department for Environmental Affairs, '20 Years of Environment Impact Assessment in South Africa' <www.dffe.gov.za/sites/default/files/docs/publications/EIAbooklet.pdf> accessed 19 December 2021.

111 GN 982, Government Gazette 38282, 4 December 2014.

112 Act 39 of 2004.

113 Cf. <<https://bit.ly/3NsN4iZ>> accessed 28 March 2022.

114 Kidd (n 104) 324.

responsible authority published a list of 10 categories, which it has identified as possible threats to air quality. Anyone who undertakes to perform one of these activities will be required to obtain an atmospheric emissions licence (AEL) under Section 22 of the Act.

4.4 The Electricity Regulation Act¹¹⁵

The Electricity Regulation Act is also relevant as it led to the promulgation of regulations that require the periodic production of integrated resource plans that can be seen to relate to climate change. The Act lays out objectives, which include the achievement of efficient, effective, sustainable and orderly development and operation of electricity supply infrastructure. This achievement shall assist in restraining of climate change due to the electricity sector being a major contributor to climate change. However, the Act does not expressly refer to climate change. Yet, it is important to note that climate change and energy are inherently linked, as energy is central to the development of modern society,¹¹⁶ while the production and consumption of energy accounts for large emissions of carbon dioxide.¹¹⁷

4.5 The Carbon Tax Act¹¹⁸

The Carbon Tax Act is a relatively new addition to South Africa's legislative record.¹¹⁹ This Act aims to provide for the imposition of a tax on the carbon dioxide equivalent of greenhouse gas emissions, which could have a positive result in relation to the control of climate change in that it may deter the use of materials that contribute to large volumes of greenhouse gas emissions. As a result of greenhouse gas emissions being one of the prevalent contributors to climate change, any method that may lead to the decrease of such emissions will benefit the undertaking of regulating and decreasing climate change and its effects.

115 Act 4 of 2006.

116 Morakinyo A Ayoade, 'Bridging the gap between climate change and energy policy options: What next for Nigeria?' in Patricia Kameri-Mbote et al. (eds), *Law | Environment | Africa*. Publication of the 5th Symposium, 4th Scientific Conference, 2018 of the Association of Environmental Law Lecturers from African Universities in cooperation with the Climate Policy and Energy Security Programme for Sub-Saharan Africa of the Konrad-Adenauer-Stiftung (*Law and Constitution in Africa* Vol. 38, Nomos 2019) 83-103, 84.

117 *Ibid.*

118 Act 15 of 2019.

119 Peggy Schoeman, 'South Africa's climate change legal regime' (2019) 19(9) *Without Prejudice* 11.

The Act is intended to be implemented in phases, with the first phase designed to be revenue neutral.¹²⁰ The tax is a tax on fossil fuel inputs. Entities which conduct listed activities that emit greenhouse gas emissions above a prescribed threshold (also in the schedule) are tax liable. The intention was to introduce the tax at a relatively low rate and increase it incrementally over time to reduce its impact on the economy whilst simultaneously giving certainty to the industry with time to adjust. Liable entities can reduce their tax liability by making use of various allowances available.

Unfortunately, notwithstanding much deliberation between the Department and National Treasury, there is still no certainty as to how the carbon tax and carbon budgets will be aligned. The former is a fiscal instrument using the market to drive behaviour and prescribing, in advance, the financial value associated with mitigating GHG emissions. In other words, it creates a carbon price of approximately R120/CO₂e *ab initio*, taking into account allowances. Carbon budgets, on the other hand, do not establish a carbon price directly but rather use the threat of punitive regulatory sanctions to incentivise behaviour, and the cost of compliance as compared to the quantum of the criminal penalty then creates a parallel financial value for reducing GHG emissions. Although not impossible to implement simultaneously, it is a highly unique regime combining both a regulatory and fiscal instrument to achieve a reduction in the same set of GHG emissions. This design will require careful harmonisation to avoid unwanted or unanticipated macroeconomic and environmental impacts.¹²¹

4.6 The National Greenhouse Gas Emissions Reporting Regulations¹²²

The 2017 National Greenhouse Gas Emissions Reporting Regulations were published under South Africa's air quality management legislation, the National Environmental Management: Air Quality Act 39 of 2004 and shall apply to private sector GHG emitting entities that: (i) fall into the sectors specified in the annexure to the Regulations; and (ii) which have an installed capacity above a prescribed capacity threshold.

The Regulations require these entities to register, monitor and report certain prescribed information regarding their GHG emissions, specifically information regarding process, fugitive and combustion emissions from all GHG emission sources and source streams. In the amended version it lists all activities, as defined in the 2006 IPCC Guidelines for National Greenhouse Gas Inventories' source categories, where data providers must report greenhouse gas emissions and related activity data

for the Republic of South Africa to meet its international reporting obligations under the United Nations Framework Convention on Climate Change (UNFCCC) and instrument treaties to which it is bound [...].¹²³

120 Revenues are likely to be recycled by way of reducing the current electricity generation levy, credit rebate for the renewable energy premium, and a tax incentive for energy efficiency savings.

121 Rumble (n 96) 48f.

122 GN 275, Government Gazette 40762, 3 April 2017.

123 GN 1136, Government Gazette 42684, 6 November 2019.

4.7 The Disaster Management Act¹²⁴

Disaster risk reduction (DRR) is a central focus of the South African Disaster Management Act. This climate-relevant piece of legislation defines ‘disaster management’ as a continuous and integrated multi-sectoral, multi-disciplinary process of planning and implementation of measures aimed at (a) preventing or reducing the risk of disasters; (b) mitigating the severity or consequences of disasters; (c) emergency preparedness; (d) a rapid and effect response to disasters; and (e) post-disaster recovery and rehabilitation. With this in mind, the Act establishes an elaborate institutional, policy development and strategic planning framework for disaster.

Section 27(2) of the Act empowers the responsible Minister, after a national state of disaster has been declared (which was, for instance, declared on 15 March 2020 due to COVID-19), to make regulations or authorise the issuing of directions to respond to the disaster. The main regulations were proclaimed on 18 March 2020,¹²⁵ of which some were challenged in *Reyno Dawid De Beer and Others v the Minister of Cooperative Governance and Traditional Affairs*¹²⁶ on the basis of the lack of rationality or constitutionality of the regulations.

The Disaster Management Amendment Act¹²⁷ makes explicit reference to communities that are vulnerable to disasters providing for measures to reduce the risk of disaster through adaptation to climate change.

5 Further relevant legal instruments dealing with climate change

The design of climate policy is influenced by how individuals and governments perceive risks and uncertainties and take them into account.¹²⁸ There are a number of further relevant policies in South Africa that relate to climate change and to energy.

5.1 The 1998 White Paper on the Energy Policy¹²⁹

The 1998 White Paper on the Energy Policy of the Republic of South Africa focuses on the integration of various energy-related policy processes and as a means to pro-

124 Act 57 of 2002.

125 GN 4307, Government Gazette 43107, 18 March 2020.

126 Unreported decision of Davies, J in the Gauteng Division, High Court of South Africa, Pretoria, (21542/2020) (2020) ZAGPPHC 184 (2 June 2020).

127 Act 16 of 2015.

128 IPCC (n 12) 17.

129 Available at <www.energy.gov.za/files/policies/whitepaper_energypolicy_1998.pdf> accessed 28 March 2022.

vide policy stability. Although it does not specifically deal with the issue of climate change, it takes climate change into account as one of the factors that need to be considered in the development of energy policy. The White Paper seeks to monitor international developments and plan for possible pressure on South Africa to consider its environmental impacts, which will unquestionably increase while committing to a ‘no regrets’ approach to the energy sector. A ‘no regrets’ approach essentially means to minimise and decrease environmental impacts. Although climate change is not expressly mentioned, it is an obvious result of actions that negatively impact the environment, which this Paper seeks to minimise. It must be taken into consideration that the White Paper is from 1998, where climate change and climate science were not as prevalent as they are today.¹³⁰

5.2 The 2003 Integrated Energy Plan¹³¹

The 2003 Integrated Energy Plan was aimed at ensuring that the demand for energy is met with a sufficient supply. This aim has a link to climate change in that the energy sector is a large contributor to greenhouse gases, which influences climate change.

[T]he purpose of the integrated energy plan or strategy is to balance energy demand with supply resources in concert with safety, health and environmental considerations.

The plan indicates a target for renewable energy and considers its importance. Renewable energy would be a contributor to the decline and minimisation of climate change, as it has less negative impacts on the environment and ultimately climate change. This policy is already outdated as its target was to be met by the year 2012.¹³²

5.3 The 2003 White Paper on the Renewable Energy Policy¹³³

The 2003 White Paper on the Renewable Energy Policy for the Republic of South Africa is a continuation and follows on from the 1998 White Paper, as it pledged support for renewable energy use. It sets out the government’s vision, policy principles, strategic goals and objectives for promoting and implementing renewable energy while also setting a goal to inform the public and international community of the government’s goals and how it intends to achieve them. The Paper’s ultimate aim was to increase the contribution of renewable energy, resulting in a contribution to

130 Kidd (n 104) 311.

131 Available at <<https://bit.ly/3K4zvnA>> accessed 3 March 2022.

132 Kidd (n 104) 312.

133 GN 513, Government Gazette 26169, 14 May 2004.

sustainable development and environmental conservation. This was a commendable goal. However, the Paper set a conservative target, which could be seen as ‘too restrained’ to have a large enough impact or influence. It indicates that

South Africa is by far the largest emitter of GHGs in Africa and one of the most carbon emission-intensive countries in the world [...] due to the energy-intensive economy and high dependence on coal for primary energy.

5.4 The 2004 National Climate Change Response Strategy¹³⁴

The 2004 National Climate Change Response Strategy for South Africa contains a number of strategies designed to address issues identified as priorities for dealing with climate change. The point of departure recognised in the policy is the achievement of national and sustainable development objectives whilst simultaneously responding to climate change.¹³⁵

The document contains a number of objectives along with mechanisms to meet these objectives. The objectives are predominantly concerned with sustainable development on a national level and with addressing climate change. The objectives are linked to the creation of synergy between national government objectives, sustainability and climate change; they strive for increased interaction and collaboration. Another objective is to enable the relevant national government departments to address climate change issues in South Africa while ensuring that they have the capacity to perform their relevant climate change response functions.

Further objectives aim to offset South Africa’s vulnerability to climate change; to create a national greenhouse gas mitigation plan that promotes the process of sustainable development; and to optimise South Africa’s potential to benefit from climate change mitigation by suitable international response and positioning. Additionally, the document aims to ensure that government departments co-operate when dealing with climate change; that South African environmental law provides for climate change issues; and to foster improvement in education concerning climate change. At the same time, the document aims to ensure that there is an effective and integrated programme of climate change research, development and demonstration in South Africa. A number of key interventions have been proposed in this document; however, some of them have either been poorly met or not met at all.¹³⁶

134 Available at <https://cer.org.za/wp-content/uploads/2014/05/sem_sup3_south_africa.pdf> accessed 28 March 2022.

135 Kidd (n 104) 313.

136 Ibid 315.

5.5 The 2008 Long Term Mitigation Scenarios

The 2008 Long Term Mitigation Scenarios outline the different scenarios of greenhouse gas mitigation actions by South Africa,¹³⁷ inform long-term national policy and provide a solid basis for South Africa's position in multilateral climate negotiations on a post-2012 climate regime. Unmitigated climate change driven by carbon pollution threatens the viability of organised human societies.¹³⁸ The document examines a number of interventions that could reduce the 'growth without constraints' level to be closer to the 'required by science' level. The proposed interventions include some that can be implemented immediately and others that may be introduced over time. Some of the interventions are general, like the promotion of energy efficiency, and others are more specific, like the use of 'cleaner coal' and changes to public transport systems. The document also highlights the role of economic instruments in relation to greenhouse gas emissions, including carbon taxes and potential incentives for the use of renewable energy, solar power and the use of biofuels.¹³⁹

5.6 The National Framework for Sustainable Development¹⁴⁰

The 2008 National Framework for Sustainable Development – People, Planet, Prosperity, seeks to build on existing programmes and strategies that have emerged in South Africa since the inception of democracy. It aims to identify key short, medium and long-term challenges in sustainable development efforts, sets the framework for a common understanding and vision of sustainable development and defines strategic focus areas for intervention. The Framework emphasises the increasing need to collectively implement a national vision for sustainable development through a multitude of actions across all sectors and stakeholders to ensure appropriate protection of resources for generations to come.

The Framework is addressed to all organs of state within the national, provincial and municipal spheres to progressively refine and realign their policies and decision-making systems to establish a coherent and mutually consistent national system. The latter shall be aimed at promoting sustainable development by advancing efficient and effective integrated planning and governance through national, regional and

137 See Energy Research Centre, *Long term mitigation scenarios: Technical summary* (Department of Environment Affairs and Tourism 2007) <<https://bit.ly/3LqAST3>> accessed 28 March 2020.

138 Philip Landrigan et al., 'Pollution prevention and climate change mitigation: Measuring the health benefits of comprehensive interventions' (2018) 2 *The Lancet* 515.

139 Kidd (n 104) 316.

140 South African Government, 'People – planet – prosperity: National framework for sustainable development in South Africa' (Department of Environmental Affairs and Tourism 2008) <<https://bit.ly/3hBM7WY>> accessed 3 March 2022.

global collaboration. In response to evidence presented by the IPCC, the Framework recognises that the impacts of climate change pose a serious risk to the achievement of sustainable development, particularly for poor communities.

5.7 The Integrated Resource Plans for Electricity

The first Integrated Resource Plan for Electricity was released in 2009.¹⁴¹ This Plan was required by electricity regulations on new generation capacity in terms of the Electricity Regulation Act (4 of 2006). The Plan sets out a number of policy objectives aimed at reducing the level of greenhouse gas emissions released as a result of the electricity sector. These include the use of renewable energy, the implementation of financial incentive schemes that relate to energy efficiency and the installation of solar water heaters. However, the Plan also clarifies that coal will remain the principal energy source, suggesting that renewable energy resources are regarded as peripheral. The second Plan (2010-2030),¹⁴² like the first Plan, and despite setting out objectives regarding the use of renewable energy, still regards those as peripheral to the use of coal.¹⁴³

5.8 The 2010 National Climate Change Response Green Paper¹⁴⁴

The 2010 National Climate Change Response Green Paper¹⁴⁵ commits South Africa to make a fair contribution to stabilising global greenhouse gas concentrations in the atmosphere and protecting the country and its people from the impacts of the seemingly unavoidable climate change. The Green Paper further presents the government's vision for an effective climate change response and the long-term transition to a climate-resilient and low-carbon economy and society, based on the government's commitment to sustainable development.

The Green Paper sets out a variety of strategies to achieve the climate objectives. They include, *inter alia*, the prioritisation of mitigation and adaption interventions, the mainstreaming of climate change responses in all national, provincial and local planning regimes, the recognition of developed countries' efforts in responding to

141 The System Operations and Planning Division in Eskom has been mandated by the Department of Energy (DoE), under the New Generation Capacity regulations, to produce the integrated resource plan for electricity in consultation with the Department and the National Energy Regulator of South Africa (NERSA). The plan is available at <www.xitizap.com/eskom-2009-irp.pdf> accessed 23 June 2020.

142 GN 400, Government Gazette 34293, 6 May 2011.

143 Kidd (n 104) 317.

144 GN 1083, Government Gazette 33801, 25 November 2010.

145 Available at <<https://bit.ly/3sCpmZg>> accessed 23 June 2020.

climate change and the recognition that sustainable development is ‘climate friendly’. Hence, the more sustainable the country becomes, the easier it will be to build resilience to climate change impacts.

The Green Paper considers policy approaches in sectors of South African society that most require adaptation, like agriculture, water and human health, but also in sectors where mitigation will be most important, like energy, industry and transport. It further acknowledges three additional sectors, i.e., disaster risk management, natural resource sectors and human society, livelihoods and services. For each of these sectors, key challenges or impacts are identified to then set out policy responses in the form of actions. This involves increased research, investigation and exploration of the various issues. In addition, there are a number of responses that relate to energy; for example, the Green Paper recommends that a ‘climate constraint’ be integrated into both the Integrated Energy Plan and the Integrated Energy Plan for Electricity Generation.¹⁴⁶

5.9 The 2011 National Climate Change Response White Paper¹⁴⁷

The 2011 National Climate Change Response White Paper was the result of a seven-year process, which had started with the National Climate Change Response Strategy for South Africa, a document published by the Department of Environmental Affairs and Tourism in 2004.¹⁴⁸ The White Paper defines the government’s vision for effective climate change response, short-term, medium-term and long-term, and of the transition into a lower-carbon economy and society.¹⁴⁹ Clearly, the structure is very different from the Green Paper.¹⁵⁰

The White Paper builds on a series of policy statements and strategies, including the National Climate Change Response Strategy of 2004 and the Long-Term Mitigation Scenarios Document of 2007.¹⁵¹ The White Paper is divided into thirteen chapters and an initial ‘Executive Summary’, which presents its main contents.¹⁵² The introduction explains the phenomenon of climate change and outlines the South African government’s efforts to mitigate and adapt to the projected climate changes, on both a national and international level. The second chapter, ‘national climate change

146 Kidd (n 104) 320.

147 Available at <<https://bit.ly/35KWEwy>> accessed 3 March 2022.

148 Kjersti Fløttum and Øyvind Gjerstad, ‘The role of social justice and poverty in South Africa’s National Climate Change Response White Paper’ (2017) 29 SAJHR 61, 64.

149 Shelley Smith, ‘Climate change and South Africa: A critical analysis of the National Climate Change Response White Paper and the push for tangible practices and media-driven initiatives’ (2013) 7 Global Media Journal: Africa Addition 47, 48.

150 Fløttum and Gjerstad (n 148) 65.

151 Rumble (n 96) 45.

152 Fløttum and Gjerstad (n 148) 66.

response objective’, presents South Africa’s dual challenge of adaptation and mitigation. Chapter three presents the nine ‘principles’ that guide the White Paper’s objective, including ‘common but differentiated responsibilities and respective capabilities’, ‘equity’, and ‘uplifting the poor and vulnerable’. Chapter four outlines the ‘national climate change response strategy’, describing a decision-making process based on experience, costs and benefits, risks and incentives and disincentives for behavioural change, among a number of other factors.

The emissions scenario from the 2008 Long Term Mitigation Scenarios Policy serves as a benchmark in terms of ‘peak, plateau and decline’ greenhouse gas emission trajectory. Chapter five discusses a number of adaptation measures for various sectors, including water, agriculture, biodiversity, health, human settlements and disaster risk management. Chapter six presents mitigation efforts, which from the outset underline that the proposed peak-plateau-decline trajectory is not an absolute commitment but depends on the mobilisation of financial resources by developed countries. Chapter seven addresses the issue of potential negative economic impacts of measures, pertaining especially to those relating to mitigation.¹⁵³ Chapter eight presents the ‘near-term priority flagship programmes’ consisting of both new initiatives and the scaling up of existing initiatives, which will be implemented while the first sectoral desired emission reduction outcomes and carbon budgets are being developed and initial adaptation interventions prioritised.¹⁵⁴ These include public works, water conservation and demand management, renewable energy, energy efficiency and energy demand, transport, waste management, carbon capture and sequestration, and lastly adaptation research.¹⁵⁵ Chapters nine and ten discuss job creation and the organisation of public institutions respectively with regard to the projected socio-economic changes.¹⁵⁶ In chapter eleven the mobilisation of resources is outlined, while the measurement and monitoring of climate change and response efforts are contained in chapter twelve.

Lastly, the White Paper summarises the challenges that climate change poses, restating the South African government’s commitment to put in place an effective response to climate change. It is clear that the White Paper truly endeavours to deal with climate change through various mechanisms and measures. It highlights that climate change affects all South Africans and that the government will cooperate with business, industry, civil society, academia and students to resolve it.¹⁵⁷ It is in the South African government’s hands to ensure that the spirit of the White Paper is

153 Ibid.

154 GN 757, Government Gazette 34695, 3 October 2011.

155 Fløttum and Gjerstad (n 148) 66-67.

156 Ibid.

157 Smith (n 149) 51.

translated into appropriate legislative measures (such as the Climate Change Bill creating a relevant framework law).¹⁵⁸

5.10 The Draft National Climate Change Adaptation Strategy¹⁵⁹

The 2019 Draft National Climate Change Adaptation Strategy (NCCAS)¹⁶⁰ incorporates South Africa's NDP and the NDCs and shall function as a National Adaptation Plan to achieve South Africa's obligations under the Paris Agreement. Within the international climate change regime, the NCCAS intends to leverage alignment with South African policies, legislation and other strategic frameworks. The NCCAS outlines 9 strategic interventions with envisaged actions associated with the intervention:

1. Reduce human and economic vulnerability, ensure resilience of physical capital and ecological infrastructure and build adaptive capacity.
2. Develop a risk, early warning, vulnerability and adaptation monitoring system for key climate vulnerable sectors and geographic areas.
3. Develop a vulnerability and resilience methodology framework that integrates biophysical and socio-economic aspects of vulnerability and resilience.
4. Facilitate mainstreaming of adaptation responses into sectoral planning and implementation.
5. Promote research application, technology development, transfer and adoption to support planning and implementation.
6. Build the necessary capacity and awareness for climate change responses.
7. Establish effective governance and legislative processes to integrate climate change in development planning.
8. Enable substantial flows of climate change adaptation finance from various sources.
9. Develop and implement an M&E system that tracks implementation of adaptation actions and their effectiveness.

With regard to intervention number 7, which seems most relevant for this chapter, it shall be highlighted that South Africa's international climate change commitments, the global sustainability movement, and changes experienced in climate have resulted in the implementation of adaptation projects by government and private organisations and communities throughout South Africa. However, despite coordination efforts in different spheres and sectors, there is no clarity in current legislation regard-

158 Rumble (n 96) 45.

159 Draft National Climate Change Adaptation Strategy; GN 644, Government Gazette 42446, 6 May 2019.

160 Text available at <<https://bit.ly/3uyVDjV>> accessed 28 March 2022.

ing mandates, especially in the government sector. Communication between different sectors is lacking, and organisations are at risk of conducting similar work, using funds that could be better spent. A more integrated approach to climate change with clear roles, responsibilities and mandates and the promotion of partnerships would help to ensure that South Africa meets its climate change adaptation goals timeously and efficiently.

5.11 The Integrated Resource Plan¹⁶¹

In 2019, a new Integrated Resource Plan was published for implementation. In its introduction, the Plan sets out that

South Africa's National Development Plan (NDP) 2030 offers a long-term plan for the country. It defines a desired destination where inequality and unemployment are reduced, and poverty is eliminated so that all South Africans can attain a decent standard of living. Electricity is one of the core elements of a decent standard of living.

While South Africa continues to pursue a diversified energy mix that reduces reliance on a single or a few primary energy sources, the IRP is clear in saying that

coal will continue to play a significant role in electricity generation in South Africa in the foreseeable future as it is the largest base of the installed generation capacity and it makes up the largest share of energy generated. Due to the design life of the existing coal fleet and the abundance of coal resources, new investments will need to be made in more efficient coal technologies to comply with climate and environmental requirements.

The Plan further reiterates that 'the timing of the transition to a low carbon economy must be in a manner that is socially just and sensitive to the potential impacts on jobs and local economies. Carbon capture and storage, underground coal gasification, and other clean coal technologies are critical considerations that will enable South Africa to continue using our coal resources in an environmentally responsible way into the future.' The Plan acknowledges that 'air quality regulations under the National Environmental Management Act: Air Quality (39 of 2004) provide that coal power plants under Eskom's fleet, amongst others, have to meet the minimum emission standard (MES) by a certain time, or they would be non-compliant and cannot be legally operated'. Yet, in addressing the potential non-compliance with the law, the Plan *inter alia* concludes that a balance will have to be found between energy security and the adverse health impacts of poor air quality.

161 Text available at <<http://www.energy.gov.za/IRP/2019/IRP-2019.pdf>> accessed 28 March 2022.

5.12 The Low Emission Development Strategy (SA-LEDS)¹⁶²

The Low Emission Development Strategy (SA-LEDS) dated February 2020, was submitted to the UNFCCC during the following months. The strategy reiterates South Africa's commitment to achieving the Paris goals. It also highlights that the implementation of the strategy will contribute directly and indirectly to the meeting of Sustainable Development Goals (SDGs). SA-LEDS sets out a direction towards a low-carbon emission development pathway, meeting commitments to the international community and addressing developmental agenda/priorities and needs. This strategy is supposedly 'a living document, the beginning of South Africa's journey towards ultimately reaching a net-zero carbon economy by 2050':

The first step will thus be to ensure national targets are aligned with the Paris Agreement. Thereafter, planning teams with analytical and sectoral expertise will engage in detailed scenario work to develop transformation pathways towards achieving the national targets. However, building a scenario is not enough to plan for its delivery. The translation of such a plan to policy is a challenge that all Parties must grapple with over the coming months and years. South Africa aims to inform rollout plans through the use of a dedicated change framework. SA-LEDS will thus be reviewed at least every five years or earlier, should there be significant changes in sectoral or national plans/programmes that can result in big structural changes, growth or decay of the economy, or major global events that impact its content or implementation.

It becomes clear that many policies and plans are in place in South Africa. If, how and when they will eventually and fully translate into a just energy transition remains to be seen. As concrete example, energy fiscal policies (of which fossil fuel subsidies are a subset) in South Africa have already been framed around distributive aims in the post-Apartheid state. While the extent to which fossil fuel subsidies still exist, the South African government, under its G20 commitments, had claimed that it has no inefficient fossil fuel subsidies that encourage wasteful consumption. This notwithstanding, fossil fuels are an important source of government revenue in South Africa, imposing taxes on fossil fuel consumption, production, and incomes, as well as charges for some externalities and fuel-related costs (such as transport). In 2019-2020, the total revenue from fossil fuel subsidies was ZAR 100.5 billion (USD 6.95 billion), constituting 2% of the GDP and 7.4% of general revenue. This taxation, however, does by far not match its societal costs (associated with combustion of fossil fuels, air pollution and GHG emissions), which are estimated to be a minimum of ZAR 550 billion (USD 33 billion) per annum.¹⁶³

162 See <<https://bit.ly/3C8rivU>> accessed 28 March 2022.

163 Richard Bridle et al., 'South Africa's energy fiscal policies: An inventory of subsidies, taxes, and policies impacting the energy transition' (2022) International Institute for Sustainable Development. Available at <<https://www.iisd.org/system/files/2022-01/south-africa-energy-subsidies.pdf>> accessed 1 February 2022.

5.13 The Climate Change Bill¹⁶⁴

The Draft Climate Change Bill was first published for comments¹⁶⁵ in June 2018. It shall provide for the coordinated and integrated response to climate change and its impacts by all spheres of government in accordance with the principles of cooperative governance; for the effective management of inevitable climate change impacts through enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change, with a view to building social, economic, and environmental resilience and an adequate national adaptation response in the context of the global climate change response; and make a fair contribution to the global effort to stabilise greenhouse gas concentrations in the atmosphere at a level that avoids dangerous anthropogenic interference with the climate system within a timeframe and in a manner that enables economic, employment, social and environmental development to proceed sustainably.¹⁶⁶

Since 2018, no further communication was issued from the government concerning the Climate Change Bill until 2021 when the Climate Change Bill of 2021 (B-2021)¹⁶⁷ was introduced in the National Assembly (proposed Section 76 of the Constitution). In its statement on the virtual Special Cabinet Meeting of 14 September 2021, Cabinet approved the submission of the National Climate Change Bill to Parliament. The Bill seeks to provide a legal instrument for the implementation of the National Climate Change Response Policy. It allows for the alignment of policies that will influence the country's climate change response. It also provides the transitional arrangement for the country to move towards a lower carbon and climate-resilient economy. The Bill has already gone through an extensive public consultation process involving relevant stakeholders.¹⁶⁸ The updated Bill is expected to create financial liability for the state in the form of implementation costs relating to the following:¹⁶⁹ Development of climate change response and implementation plans by spheres of Government; Sector Adaptation Strategy and Plan by relevant Ministers and the amendment of existing policies and plans to take sectoral emissions targets into account; development of a National Adaptation Strategy and Plan; human resource capacity for supporting the development and implementation of all plans, strategies and frameworks under the Bill; and human resource capacity for compliance monitoring and enforcement.

164 GN 580, Government Gazette 41689, 8 June 2018.

165 See <<https://bit.ly/3DjmO6b>> accessed 28 March 2028.

166 Cf. <<https://cer.org.za/wp-content/uploads/2018/05/Draft-Climate-Change-Bill.pdf>> accessed 28 March 2022.

167 B-2021 has in the meantime developed further into B9-22 which is available at <https://www.parliament.gov.za/storage/app/media/Bills/2022/B9_2022_Climate_Change_Bill/B9_2022_Climate_Change_Bill.pdf> accessed 28 March 2022.

168 See <<https://www.parliament.gov.za/bill/2300773>> accessed 28 March 2022.

169 See Climate Change Bill B-2022 (n 167).

Moreover, according to the Climate Change Bill B9-2022,¹⁷⁰ the purpose of the Bill is to craft and implement an effective national climate change response, including mitigation and adaptation actions, that represents the Republic's fair contribution to the global climate change response. The Bill's main objective is to enable the development of an effective climate change response and the long-term just transition to a climate-resilient and lower-carbon economy and society and to provide for matters connected therewith.

Section 1 of the Bill defines certain words, terms and expressions used in the Bill. Section 2 sets out the objectives of the Bill. Section 3 sets out the principles that will guide the interpretation and application of the Bill. Section 4 provides that the Bill is applicable within the borders of the Republic and that it binds all organs of state as defined in Section 239 of the 1996 Constitution. Section 5 renders the Bill a specific environmental management Act, as defined in the National Environmental Management Act 107 of 1998, and requires the Bill to be read, interpreted and applied in conjunction with that Act.¹⁷¹

Section 6 regulates conflicts with other legislation. In the event of any conflict between a section of the envisaged Act and other legislation specifically relating to climate change, the section of the envisaged Act prevails. Section 7 places a legal obligation on every organ of state to coordinate and harmonise their various policies, plans, programmes, decisions and decision-making processes relating to climate change to ensure that the risks of climate change impacts and associated vulnerabilities are taken into consideration and to give effect to the principles and objectives set out in the envisaged Act. Section 8 requires the existing Premier Intergovernmental Forums, established in terms of the Intergovernmental Relations Framework Act No 13 of 2005 (IGRFA), to serve as Provincial Forums on Climate Change. A Provincial Forum on Climate Change is charged with coordinating climate change actions in the relevant province and with reporting to the President's Coordinating Council in terms of Section 20(a) of the IGRFA, as well as the Inter-Ministerial Committee on Climate Change. Section 9 provides for all district intergovernmental forums, established in terms of the IGRFA, to serve as Municipal Forums on Climate Change. A Municipal Forum on Climate Change is charged with coordinating climate change actions in the relevant municipality and reports to the relevant Provincial Forum on Climate Change. Section 10 provides for the establishment of the Presidential Climate Change Coordinating Commission for organised labour, civil society and business to advise on the Republic's climate change response.¹⁷²

Section 11 provides the functions of the Presidential Climate Change Coordinating Commission, which includes providing advice on the Republic's climate change

170 Ibid.

171 Ibid.

172 Ibid.

response to ensure an effective climate change response and the long-term just transition to a climate-resilient and low-carbon economy and society. Section 12 governs the appointment of members to the Presidential Climate Change Coordinating Commission. Section 13 provides that the President may require that the Presidential Climate Change Coordinating Commission reports on matters relating to mitigation and adaptation. Section 14 provides for the functions of the Secretariat of the Presidential Climate Change Coordinating Commission. Section 15 requires a MEC responsible for the environment or a mayor of a district or metropolitan municipality to undertake a climate change needs and response assessment within one year of the publication of the National Adaptation Strategy and Plan. It further requires the development of a climate change response implementation plan within two years of undertaking the climate change needs and response assessment. The Section sets out the prescribed content of a climate change needs and response assessment and a climate change response implementation plan. It further requires a climate change response implementation plan to be integrated into the relevant environmental implementation plan of the Province or the relevant integrated development plan of the District or Metropolitan Municipality.¹⁷³

Section 16 provides for the establishment of adaptation objectives in the Republic. The objective is to guide the adaptation response, which is to be accompanied by indicators for measuring progress. The Minister must also determine the date by which the objectives must be incorporated into national planning instruments, policies and programmes. Section 17 requires the Minister to develop adaptation scenarios, which anticipate the likely impacts of climate change in the Republic over the short-, medium- and longer-term. The scenarios must be developed within one year of the envisaged Act coming into operation. It prescribes relevant considerations and the minimum content of the adaptation scenarios. Section 18 provides that the Minister, in consultation with the relevant Ministers responsible for the functions listed in Schedule 2, is required to establish a National Adaptation Strategy and Plan in terms of this Section. The Section sets out the purpose of the National Adaptation Strategy and Plan and its contents. Section 19 provides that within one year of the publication of the National Adaptation Strategy and Plan, a Minister, responsible for a function listed in Schedule 2 to the envisaged Act, must undertake an assessment of its vulnerabilities to climate change and determine measures to respond thereto. The relevant Minister must then develop and implement a Sector Adaptation Strategy and Plan based on the vulnerability assessment. The relevant Minister is also responsible for submitting progress reports on the implementation of the Section Adaptation Strategy and Plan to the Minister. This Section further provides for the periodic review and amendment of the Sector Adaptation Strategy and Plan (if required). Section 20 empowers the Minister to request and obtain data and other information held

173 Ibid.

by any person which is required for the purposes of the National Climate Change Response White Paper. The Minister is also responsible for the compilation and publication of a Synthesis Adaptation Report.¹⁷⁴

Section 21 empowers the Minister, in consultation with Cabinet, to determine, by notice in the *Gazette*, a national greenhouse gas emissions trajectory for the Republic. Until the Minister publishes a national greenhouse gas emissions trajectory, the trajectory in Schedule 3 to the envisaged Act will serve as an interim national greenhouse gas emissions trajectory for the Republic. The Section provides for the mandatory review of the trajectory every five years and for a review at any other time should the circumstances require. Section 22 empowers the Minister to list the sectors and subsectors subject to the allocation of a sectoral emissions target. After having published such a list, the Minister must determine sectoral emissions targets for the listed sectors and subsectors. The sectoral emissions targets must be aligned with the national greenhouse gas emissions trajectory. The sectoral emissions targets are reviewable every five years from their initial publication. The Section further requires the relevant Ministers to annually report to the Presidency on the progress in achieving the relevant sectoral emissions targets. The Minister must synthesise these reports and submit annual progress reports on the sectoral emissions targets to Cabinet. Section 23 provides that the Minister must publish a list of greenhouse gases, which the Minister reasonably believes cause or are likely to cause or exacerbate climate change. The Minister must further publish a list of activities that emit one or more of the listed greenhouse gases and the Minister reasonably believes cause or are likely to cause or exacerbate climate change. Section 24 requires the Minister to allocate a carbon budget to every person undertaking a listed activity. The Section specifies the minimum requirements to be taken into account when allocating a carbon budget and its prescribed content. A person who has been allocated a carbon budget is required to prepare and submit to the Minister a greenhouse gas mitigation plan. A greenhouse gas mitigation plan must comply with all the requirements set out in this Section and the requirements which the Minister may prescribe. Section 25 requires the Minister to identify synthetic greenhouse gases, which must either be phased out or phased down. This Section empowers the Minister, in consultation with the relevant Ministers and any affected person, to develop a plan for the phase-down or phase-out of the synthetic greenhouse gas. The plan must comply with the requirements set out in the Section and must be reviewed and updated on a five-year basis. The Section also empowers the Minister to allocate carbon budgets to persons who undertake activities, which give rise to the emission of synthetic greenhouse gases.¹⁷⁵

174 Ibid.

175 Ibid.

Section 26 provides for the development of the National Greenhouse Gas Inventory and the compilation of the National Greenhouse Inventory Report on an annual basis. Section 27 empowers the Minister to develop regulations relating to the implementation of the envisaged Act. Section 28 is concerned with the consultation process that the Minister, the MEC, or a Mayor, must follow when exercising power in terms of the envisaged Act. This consultation must be appropriate for the circumstances and, in the case of the Minister, it includes consultation with all Ministers whose areas of responsibility will be affected by the exercise of the power and the relevant MEC in each province affected by the exercise of the power. In the case of a MEC, it includes consultation with the members of the Executive Council whose areas of responsibility will be affected by the exercise of the power and the Minister and all other national organs of state that will be affected by the exercise of the power. Section 29 sets out the public participation process that the Minister, a MEC or a mayor must follow when exercising the powers listed in the Section. Section 30 empowers the Minister and a MEC to delegate powers vested in terms of the envisaged Act in accordance with the relevant provisions of the NEMA.¹⁷⁶

Section 31 concerns the right of access to information. It stipulates that information must be provided following the Promotion of Access to Information Act No 2 of 2000 and the Protection of Personal Information Act No 4 of 2013. Section 32 provides for the offences and penalties under the envisaged Act. Section 33 provides that any person may appeal to the Minister against a decision taken by any person acting under a power delegated by the Minister; it further provides that such an appeal must be processed in terms of Section 43 of the NEMA. Section 34 deals with the savings and transitional provisions relating to the Declaration of Greenhouse Gases as Priority Air Pollutants, the National Pollution Prevention Plans Regulations and the National Greenhouse Gas Emissions Reporting Regulations published in terms of the National Environmental Management: Air Quality Act No 39 of 2004. The aforementioned subordinate legislation will remain in force and effect and serve as regulations under the envisaged Act until amended, replaced or repealed. This Section further provides for an amendment to the NEMA in accordance with Schedule 4 to the envisaged Climate Change Act.¹⁷⁷

Critique about the Bill so far circulated around inadequate emission reduction targets and benchmarks; half-hearted compliance and enforcement mechanisms; and poor provision for access to information and public participation among others.

176 Ibid.

177 Ibid.

6 Climate change in South African courts

In the Constitutional Court case of *Fuel Retailers Association of Southern Africa v Director-General: Environmental Management, Department of Agriculture, Conservation and Environment, Mpumalanga Province and Others*,¹⁷⁸ the role of the courts in the context of the environment was addressed:

The role of the courts is especially important in the context of the protection of the environment and giving effect to the principle of sustainable development. The importance of the protection of the environment cannot be gainsaid. Its protection is vital to the enjoyment of the other rights contained in the Bill of Rights; indeed, it is vital to life itself. It must therefore be protected for the benefit of the present and future generations. The present generation holds the earth in trust for the next generation. This trusteeship position carries with it the responsibility to look after the environment. It is the duty of the court to ensure that this responsibility is carried out.

The aforementioned also applies to climate change, as related litigation continues to expand across jurisdictions to influence policy outcomes and corporate behaviour.¹⁷⁹ Comparable to the international experience,¹⁸⁰ so far, climate change in South African courts mostly involved tactical suits aimed at specific projects or details regarding the implementation of existing climate policies.

6.1 Climate science considerations

The protection of human rights and the role of climate science both play an increasing role in climate change litigation.¹⁸¹ In light of this development, courts are increasingly confronted with climate science impacting the administration of justice and the decision-making process altogether. South Africa's NDC to the 2015 Paris Agreement explicitly mentions that the national

response is informed by the findings of the Intergovernmental Panel on Climate Change (IPCC) that warming of the climate system is unequivocal, and the understanding that further mitigation efforts by all are needed to avoid high to very high risk of severe, widespread, and irreversible impacts globally.¹⁸²

178 *Fuel Retailers Association of Southern Africa v Director-General: Environmental Management, Department of Agriculture, Conservation and Environment, Mpumalanga Province and Others* (CCT67/06) (2007) ZACC 13; 2007 (10) BCLR 1059 (CC); 2007 (6) SA 4 (CC) (7 June 2007).

179 Joana Setzer and Rebecca Byrnes, *Global trends in climate change litigation: 2019 snapshot* (Grantham Research Institute on Climate Change and the Environment and Centre for Climate Change Economics and Policy, London School of Economics and Political Science 2019).

180 Meredith Wilensky, *Climate change in the courts: An assessment of non-U.S. climate Change litigation* (Sabin Center for Climate Change Law, Columbia Law School, 2015) available at <<https://bit.ly/36tmNAM>> accessed 28 March 2022.

181 Setzer and Byrnes (n 179) 1.

182 Cf. <<https://bit.ly/3NoX9h0>> accessed 28 March 2022.

In this regard, the IPCC can serve as an authoritative body to rely on when it comes to quantitative detection and attribution studies to develop impact assessments, which in turn can be used in support of adaption planning. The IPCC provides rigorous and balanced scientific information to decision-makers, and by endorsing the IPCC reports, governments tend to acknowledge the authority of their scientific content. The work of the IPCC is meant to be policy-relevant and yet policy-neutral, never policy-prescriptive.¹⁸³

Interestingly, in *Urgenda Foundation v the Netherlands*,¹⁸⁴ the Dutch Supreme Court relied heavily on IPCC reports to define the percentage reduction in GHG emissions that the government would need to achieve to prevent risks associated with climate change. The 2019 judgement repeatedly references the IPCC, e.g., its Fourth Assessment Report (AR4), Fifth Assessment Report (AR5) and the AR5 Synthesis Report. Under the facts of the case, the court even discusses the role of IPCC reports in obtaining insight into all aspects of climate change through scientific research. In South African courts, IPCC reports may be introduced in the form of expert evidence ‘to provide assistance to courts in cases where the court is unable to, because of lack of specialised knowledge’.¹⁸⁵

In the South African Constitutional Court, pursuant to Rule 31, IPCC reports may arguably be used in the form of ‘Brandeis Briefs’ detailing the science for the court. A Brandeis Brief¹⁸⁶ is a brief containing information and statistics relevant in addition to arguments of law and fact.¹⁸⁷ Section 31(1)(b) of the Rules of the South African Constitutional Court¹⁸⁸ relates to facts of scientific nature capable of easy verification.

The interplay between climate science and climate law becomes increasingly important when addressing loss and damage, causation and compensation.¹⁸⁹ In these cases, ‘science must enlighten the law in revealing the truth to the courts’.¹⁹⁰

183 Cf. IPCC, ‘About the IPCC’ <<https://archive.ipcc.ch/organization/organization.shtml>> accessed 28 March 2022.

184 *Urgenda Foundation v The Netherlands* 19/00135 (Hoge Raad).

185 Izette Knoetze-le Roux, ‘Ways to curb expert bias’ (2017) 37 *De Rebus* 5.

186 Louis D Brandeis (1856-1941) first introduced evidence of social and economic factors in his arguments before the US Supreme Court in *Muller v Oregon*, 208 US 412 (1908).

187 Cf. <www.merriam-webster.com/legal/Brandeis%20brief> accessed 11 March 2022.

188 GN 7827, Government Gazette 25726, 31 October 2003.

189 Setzer and Byrnes (n 179).

190 Oliver C Ruppel, ‘Climate law and climate science: Joint enabler for a new climate enlightenment?’ public lecture at the official occasion of the inception conference of Clim: Law, the Graz Research Center for Climate Law, University of Graz, Austria, 17 June 2020.

6.2 Private law litigation

Most climate litigation cases have been brought against governments, but there is also a rise in lawsuits brought directly against companies. Private law litigation is available to litigants who wish to seek redress for particular climate change losses suffered at the hands of identified corporations or entities. Private law climate change actions, in terms of the laws of delict, are pursued by parties spanning from citizens and corporations to NGOs.¹⁹¹

These actions and their nature have also been subject to developments in South African national and provincial legislation and regulations addressing climate change concerns.¹⁹² Be it directly through related climate legislation or indirectly through the common law or non-climate specific legislation, liability for climate-related damages has become a point of consideration to all legal entities.

As a starting point, Section 28 of NEMA imposes a ‘duty of care’ on anyone who is going to ‘cause an adverse impact on the environment’. The said provision demands that such a person must take ‘reasonable measures to lessen or avoid such a negative impact on the environment from occurring’.

While this chapter will not deal with criminal law aspects, it should at least be mentioned here that Section 33 of NEMA, with reference to the Criminal Procedure Act,¹⁹³ provides for private environmental prosecution in Section 33(1) of NEMA

[a]ny person may (a) in the public interest; or (b) in the interest of the protection of the environment, institute and conduct a prosecution in respect of any breach or threatened breach of any duty other than a public duty resting on an organ of state, in any national or provincial legislation or municipal bylaw, or any regulation, license, permission or authorisation issued in terms of such legislation, where that duty is concerned with the protection of the environment and the breach of that duty is an offence.

6.2.1 Damages

In South African jurisprudence, private law litigation for damages can be founded on delictual actions under South Africa’s law of delict. Delictual actions provide parties with a legal mechanism to seek redress or other relief for losses or harm caused by climate change impacts.¹⁹⁴ The advantage of utilising delictual remedies is the possi-

191 Marie-Ange Baudoin and Gina Ziervogel, ‘What role for local organisations in climate change adaptation? Insights from South Africa’ (2017) 17(3) *Regional Environmental Change* 691, 692.

192 Olivia Rumble and Richard Summers, ‘Climate change litigation’ in Tracy Humby et al. (eds), *Climate change: Law and governance in South Africa* (Juta & Co 2016) 6-1, 6-4.

193 Act 51 of 1977.

194 Rumble and Summers (n 192) 6-18; Jan Glazewski and Debbie Collier, ‘South Africa’ in Jutta Brunnee et al. (eds), *Climate change liability: Transnational law and practice* (Cambridge University Press 2012) 319, 333.

bility of obtaining compensation for wrongful conduct. However, a disadvantage is high costs in determining the wrongful conduct and liable party. Under South African law, there are three actions that can be raised in terms of delictual claims, namely the Aquilian action (*actio legis aquiliae*) for patrimonial loss; the action for pain and suffering for compensation for actual pain and suffering from the conduct; and the *actio iniuriarum* for harm to personality interests.¹⁹⁵ To better understand the use of delictual claims in climate change liability it is best to look at the Aquilian action for patrimonial loss, where climate-related damages can be measurable in monetary terms. The primary object of an award for damages is to compensate the person who has suffered harm.¹⁹⁶

The purpose of pursuing delictual actions is to receive compensation for damages suffered; as such, it is essential to determine the extent and impact of such damages (both non-patrimonial and patrimonial in nature). Patrimonial damages are easier to identify given the strictly financial nature of the damage suffered, making it quantifiable. For example, property damage, in terms of climate change liability, may include coastal land, buildings, structures, infrastructures, and agriculture, which defendants should consider in claims presented and based on the present costs of preventing future harm.¹⁹⁷ This also highlights a general duty by defendants to ensure that future harm, as a result of climate change, is minimal and that they do everything reasonably possible to prevent damages.

Moreover, a person whose fundamental rights have been infringed may claim constitutional damages. Such damages, however, only come into play where no statutory remedies are applicable or adequate common-law damages exist. Although constitutional and delictual damages are not concurrent, a court will most likely not support constitutional damages if these would merely constitute a duplication of general damages.¹⁹⁸

On a different note, the National Environmental Management Laws Amendment (NEMLA) Bill,¹⁹⁹ which the National Assembly passed in November 2018, revises NEMA. For instance, Section 28 of the NEMLA Bill concerning the duty of care and the remediation of environmental damage was amended to empower municipal managers to issue directives and to allow for a notification and the opportunity to make representations prior to the issuing of a directives.

195 Cf. Francois du Bois, *Willie's principles of South African law* (9th edn, Juta & Co 2009) 1093ff.

196 Johann Neethling et al., *Law of delict* (7th edn, LexisNexis 2015) 3-17.

197 Amelia Thorpe, 'Tort-based climate change litigation and the political question doctrine' (2008) 24(1) *Journal of Land Use and Environmental Law* 79-105.

198 *Fose v Minister of Safety and Security* (CCT14/96) (1997) ZACC 6; 1997 (7) BCLR 851; 1997 (3) SA 786 (5 June 1997).

199 2017 (B14D-2017).

6.2.2 Omissions and negligence

The Aquilian action aims is to restore the plaintiff's patrimony and, as far as possible, to place him/her in the position he/she would have occupied had the delict not been committed. To succeed with a delictual claim, a plaintiff must demonstrate defendant's conduct that was negligent (fault) and wrongful, thus causing patrimonial loss.²⁰⁰ Conduct, in terms of delictual action, can take the form of a positive act (physical activity or statement)²⁰¹ or an omission (failure to act).²⁰² Positive acts are easier to prove than omissions, however, climate change liability will mostly rely on a failure to act or to take reasonable preventive measures, namely to exercise the duty of care.²⁰³

Liability for omissions in climate change cases requires consideration of a number of factors, namely preceding positive conduct, which has created a source of danger; control of a dangerous object or situation; the existence of a special relationship between the parties; an obligation to act in terms of common law or statute; and obligations which arise out of a particular office.²⁰⁴

The weakest standard of culpability is negligence.²⁰⁵ The 'negligence enquiry', on the one hand, requires looking to the state of mind of the defendant in assessing the conduct against that of a reasonable person in the same situation, thereby determining fault.²⁰⁶ Negligence arises if a reasonable person 'would have foreseen the reasonable possibility of such conduct injuring another person and causing harm; would have taken reasonable steps to guard against such occurrence; and that the defendant failed to take such steps'.²⁰⁷ In other words, if the defendant failed to act in a manner that a reasonable person would have in the given situation, then the defendant is at fault. The 'wrongfulness enquiry', on the other hand, looks at the harmful conduct and whether policy and the legal convictions of the community, also from a constitutional point of view, regard it as acceptable. I.e., is it reasonable to impose liability on a defendant for the damages flowing from the specific conduct? Judicial determi-

200 Raheel Ahmed, 'The influence of reasonableness on the element of conduct in delictual or tort liability – comparative conclusions' (2019) 22 PELJ 1, 5.

201 Max Loubser 'Law of delict' in Cornelius G van der Merwe and Jacques E du Plessis (eds), *Introduction to the law of South Africa* (Kluwer Law International 2004) 283.

202 Johannes C van der Walt and Rob Midgley, *Principles of delict* (4th edn, LexisNexis 2016) 92; Max Loubser et al. (eds), *Law of delict in South Africa* (3rd edn, Oxford University Press 2018) 95; Jonathan M Burchell, *Principles of delict* (Juta & Co 1993) 37.

203 Glazewski and Collier (n 194) 333-334.

204 Ibid 336.

205 Eric Posner and Cass R Sunstein, 'Climate change justice' (2008) 96 Georgetown Law Journal 1565, 1598.

206 Loubser et al. (n 201) 98-99; Ahmed (n 199) 13.

207 See the 'negligence enquiry' at *Kruger v Coetzee* 1966 (2) SA 428 (A) 430E-F.

nation in this regard also depends on public and legal policy in accordance with constitutional norms.²⁰⁸

In looking at negligence and wrongfulness, the court is required to exercise a balancing enquiry, weighing up the degree of risk created by the defendant's conduct, the gravity of the possible consequences if the risk of harm materialises, the utility of the actor's conduct and the burden of eliminating the risk of harm.²⁰⁹

6.2.3 Fault and wrongfulness

As previously stated, fault associated with climate change liability often takes the form of negligence, which is more difficult to prove. When looking at climate liability, an important consideration in terms of fault is the 'foreseeability of harm' and whether the actions taken were 'reasonable in response to the harm' in question. Foreseeability can be an easier element to tackle due to strong arguments and reports providing scientific evidence, explaining the climate change-related harm that is to be expected from, for instance, greenhouse gas-emitting activities. However, determining the reasonableness of conduct in terms of climate change liability is a strenuous task given the scientific considerations of climate change determinations.

In the case of *Kruger v Coetzee*,²¹⁰ a clear definition and criteria for negligence were established:

For the purposes of liability, culpa arises if a diligens paterfamilias [a reasonable person] in the position of the defendant would foresee the reasonable possibility of his conduct injuring another in his person or property and causing him patrimonial loss and would take reasonable steps to guard against such occurrence and the defendant failed to take such steps.

A reasonable person, for the purpose of establishing liability, 'is not an exceptionally gifted, careful or developed person; neither is he underdeveloped, nor someone who recklessly takes chances or who has no prudence'.²¹¹ The reasonable person is the 'normal citizen', who does not necessarily contain expert knowledge.²¹²

It is essential under delictual action to provide the unreasonable nature of the defendant's conduct to meet the delictual requirements. South African common law requires unreasonableness to be weighed against usefulness (or social utility) of the defendant's conduct.²¹³ If a defendant has acted reasonably in providing social utility despite also creating climate change-related harm, such conduct may be seen as appropriate under the given circumstances. In weighing social utility and unreasonable-

208 See with further references Rumble and Summers (n 191) 6-18, 6-21.

209 Ibid 6-22.

210 *Kruger v Coetzee* 1966 (2) SA 428 (A) 430E-F.

211 Neethling, Potgieter and Visser (n 196) 135.

212 Glazewski and Collier (n 194) 338.

213 Rumble and Summers (n 192) 6-24.

ness, courts must consider the cost of abatement, available technologies, available resources and functionality, and time constraints. Reasonableness can be better determined when conduct is compared with established regulations or legislation. In the context of climate change litigation, it is likely that most defendants have some knowledge of the possible negative consequences that may arise from their actions, although they may not have the direct intention to cause harm through global warming.²¹⁴

Liability for harm caused depends greatly on proving that the conduct in question was, in fact, wrongful.²¹⁵ Wrongfulness ‘concerns whether it would be reasonable to impose liability on a defendant for damages flowing from specific harmful conduct.’²¹⁶ It is established based on legal convictions of the community, political, social and economic concerns with imposing liability.²¹⁷ This element is particularly essential in deterring hazardous unreasonable conduct by a defendant, especially where climate change concerns are not effectively regulated by statute.

Infringing rights or breach of duty, i.e., a duty of care, can result in the establishment of wrongfulness. However, where no clear duty or right has been breached or infringed, determining wrongfulness may be more difficult to determine.²¹⁸ With the adoption of the Constitution and the implementation of relevant legislation, courts may rely on clearer provisions in apportioning wrongfulness in terms of climate change liability.²¹⁹

6.2.4 Causation

The challenging element of climate change liability is establishing the causal link between the harm suffered by the plaintiff and the conduct of the defendant.²²⁰ Under any delictual action, one is required to establish that there was both legal and factual causation. Factual causation refers to the question of whether the conduct of the defendant caused the harm that establishes the claim, which is determined using the *conditio sine qua non-test*.²²¹ Legal causation speaks to whether there is a sufficiently close link between the conduct and the harm and, based on this, whether it would be reasonable to impose liability.

214 Glazewski and Collier (n 194) 339.

215 Ibid 335.

216 Rumble and Summers (n 192) 6-26.

217 Johann Neethling, ‘The conflation of wrongfulness and negligence: is it always such a bad thing for the law of delict?’ (2006) 123 SALJ 204, 210.

218 Richard A Stevens ‘The legal nature of the duty of care and skill: Contract or delict?’ (2017) 20(1) PELJ 20, 22.

219 Glazewski and Collier (n 194) 335.

220 Rumble and Summers (n 192) 6-26.

221 Glazewski and Collier (n 194) 340.

It is the factual and legal causal link that can be particularly problematic in establishing climate change liability due to insufficient scientific or supporting evidence.²²² Such constraints are maintained by demanding certainty where perhaps only certain degrees of likelihood can be provided in an environment consisting of concurrent causes.²²³ It is, however, essential to note that despite these constraints, courts have increasingly shown a willingness to play their part in developing stricter precedent regarding climate change liability.²²⁴

6.2.5 Director's liability

In terms of director's liability, Section 76(3)(c) of the South African Companies Act No 71 of 2008 imposes a standard of care on directors who can, for instance, be held liable in delict for damages if they fail to observe their duties of care and skill. In addition, Sections 34(7) and 49A (e) and (f) NEMA set out various (director's) environmental offences. These provisions could become relevant, where a director's failure to recognise and take steps to mitigate the company's contribution to climate change results in significant pollution or degradation of the environment, or detrimentally affects the environment. In this context, the director is liable for the harm to the environment, which would also encounter significant difficulties in relation to causation and attribution.²²⁵

6.2.6 Neighbour law and nuisance claims

While a neighbour law dispute is private, nuisance claims can be public or private, depending how the nuisance was constituted. While a basic underlying principle is related to the Latin maxim *sic utere tuo ut alienum non laedas*, meaning to use one's property as not to injure another's property, the South African law of neighbours consists of a mix of common law, Roman and Roman-Dutch law principles with claims that 'may give rise to an interplay of principles of property law and the law of delict'.²²⁶ Public or private nuisance claims are actions that can be sought within the

222 Rumble and Summers (n 192) 6-27.

223 Petra Minnerop and Friederike Otto, 'Climate change and causation: Joining law and climate science on the basis of formal logic' (2020) 27 Buffalo Journal of Environmental Law.

224 Rumble and Summers (n 192) 6-27.

225 Cf. with further references, Christine Reddell, *Directors' liability and climate risk: South Africa* (Country Paper. Commonwealth Climate and Law Initiative 2018).

226 Glazewski and Collier (n 194) 343.

umbrella of common law claims. Such claims can be aimed at, for instance, stopping greenhouse gas emissions.²²⁷

According to a number of South African metropolitan and local municipal by-laws,

public nuisance means a thing, act, occupation, condition or use of property which shall continue for such length of time as to

- (a) annoy, injure or endanger the comfort, health, repose or safety of the public;
- (b) in any way render the public insecure in life or in the use of the property;
- (c) greatly offend the public moral decency;
- (d) unlawfully and substantially interfere with; obstruct or render dangerous for passage any street, ally, road, navigable body of water or other public way.²²⁸

Public nuisance is considered ‘an act or omission or state of affairs that impedes, offends, endangers or inconveniences the public at large.’²²⁹ It can be suppressed or stopped by an interdict or abatement order.²³⁰ The adverse impacts of climate change on the environment and communities may be sufficient to show damage or inconvenience to health and safety, in both short-term and long-term considerations. There is already established scientific evidence that can support such claims, making it easier to bring forward a public nuisance argument since the elements to prove public nuisance are less than that of a purely delictual claim. A perpetrator’s action is unlawful if he/she is found guilty of causing injury, damage or inconvenience to the health and safety of the general public. Moreover, the preparator’s action is unlawful if it is found to be in conflict with certain statutory regulations.²³¹

6.3 Transnational liability?

In December 2021, the Eastern Cape Division Grahamstown of the High Court of South Africa in Makhanda has ordered Shell to immediately cease its seismic blasting along South Africa’s Wild Coast. It further ordered Shell and the Minister of Mineral Resources and Energy to pay the costs of the application for the interim interdict. In the judgement, Judge Gerald Bloem stated that Shell was under a duty to

227 See Victor B Flatt and Richard O Zerbe, ‘Climate change common law nuisance suits: A legal-efficiency analysis’ (2019) 49(3) *Lewis & Clark Law School Environmental Law Review* 683-702.

228 Public Nuisance By-Law Provincial Notice No 55 of 2019; Public Nuisance By-Laws Provincial Notice No 58 of 2016; Public Nuisances By-Law Local Authority Notice of 2010.

229 Alton Samuels, ‘Note on the use of public nuisance doctrine in 21st century South African Law’ (2015) *De Jure* 13.

230 Colin Prest, *The law and practice of interdicts* (Juta & Co 1996).

231 Also see Jaap Spier, ‘Injunctive relief: Opportunities and challenges’ in Jaap Spier and Ulrich Magnus (eds), *Climate change remedies: Injunctive relief and criminal law responses* (Eleven International Publishing 2014) 1-120, 1ff.

meaningfully consult with the communities and individuals who would be impacted by the seismic survey and based on the evidence provided, Shell failed to do so.²³² Interestingly, in January 2021, a Dutch court held Shell responsible for oil spills in Nigeria. In the *Milieudefensie* case,²³³ the court had to rule on whether the subsidiary Shell Nigeria was responsible for oil spills in the Niger Delta and whether this also meant that the Dutch parent company Royal Dutch Shell had breached its general duty of care. The court held that Shell Netherlands did not have a general duty of care under Nigerian law to prevent harm to third parties because the common law does not have a specific doctrine of attribution for the liability of parent companies for acts of subsidiaries. However, with respect to the subsidiary Shell Nigeria, the Dutch court upheld the claims – at least in part. In light of this, transnational environmental liability law against multinational companies is gaining momentum in the legal and political discussion on international implementation and compliance with environmental standards as well as transnational claims for damages.

Especially from an African perspective, international standards for national environmental liability laws as well as more effective transnational claims for damages would be desirable. First precedents promise to open the way for future environmental damage claims against multinational corporations. Last but not least, climate-related liability claims against multinational parent companies and their foreign subsidiaries are also conceivable, for example, if their cumulative greenhouse gas emissions are significantly higher than when considered separately.²³⁴ With the increasing impacts of climate change today, the liability risks of tomorrow also increase. To hold those responsible for the effects of climate change is a logical legal consequence, especially for those hit hardest.

232 Cf. Chris Vlavianos and Katherine Robinson, 'Wild Coast seismic operations interdicted' (Green Times, 28 December 2021) <<https://thegreentimes.co.za/wild-coast-seismic-operations-interdicted/>> accessed 29 December 2021.

233 Cf. Gerechtshof Den Haag, 'Shell Nigeria liable for oil spills in Nigeria' (29 January 2021) <www.rechtspraak.nl/Organisatie-en-contact/Organisatie/Gerechtshoven/Gerechtshof-Den-Haag/Nieuws/Paginas/Shell-Nigeria-liable-for-oil-spills-in-Nigeria.aspx> accessed 29 December 2021.

234 Cf. Oliver C Ruppel 'Internationale Standards für nationale Umwelthaftungsnormen: Eine afrikanische Perspektive' (2021) 5 Afrika Süd-Dossier: Klimakrise im südlichen Afrika 37-39 <www.afrika-sued.org/ausgaben/heft-5-2021/internationale-standards-fuer-nationale-umwelt-haftungsnormen-eine-afrikanische-perspektive/> accessed 29 December 2021.

6.4 Public law jurisprudence

6.4.1 The role of public interest climate change litigation

Given South Africa's legal system and the power of precedent, it is important to acknowledge the role that public interest litigation plays in setting a model through which climate change jurisprudence can grow.²³⁵ In South Africa, *actio popularis* is possible. Although public interest litigation is not yet common in the African continental context, Section 38 of the Constitution provides legal standing (*locus standi*) for class action and public interest litigation.²³⁶

Anyone listed in Section 38 has the right to approach a competent court, alleging that a right in the Bill of Rights has been infringed or threatened, and the court may grant appropriate relief, including a declaration of rights. The persons who may approach a court are –

- (a) anyone acting in their own interest;
- (b) anyone acting on behalf of another person who cannot act in their own name;
- (c) anyone acting as a member of, or in the interest of, a group or class of persons;
- (d) anyone acting in the public interest; and
- (e) an association acting in the interest of its members.

According to Section 32:

- (1) [e]veryone has the right of access to –
 - (a) any information held by the state; and
 - (b) any information that is held by another person and that is required for the exercise or protection of any rights.
- (2) National legislation must be enacted to give effect to this right and may provide for reasonable measures to alleviate the administrative and financial burden on the state.

And Section 34 regulates that:

[e]veryone has the right to have any dispute that can be resolved by the application of law decided in a fair public hearing before a court or, where appropriate, another independent and impartial tribunal or forum.

Public interest litigation allows interested parties to identify possible gaps and failings in current laws and seek the judiciary's assistance in finding ways to fill those gaps and/or address such failings. Therefore,

[c]limate change litigation continues to reach the courts and the headlines, with non-government organisations, individuals, and subnational governments (cities and states) filing cases. The caselaw reflects the multiple ways in which climate change litigation is influencing

235 Oliver C Ruppel, Georg W Junger and Keeley M Knutton, 'Der Klimawandel in der Governance, Gesetzgebung und Rechtsprechung Südafrikas: Ein Überblick über die jüngsten Entwicklungen' (2020) 5 Zeitschrift für Umweltrecht 274-280.

236 James Rooney, 'Class actions and public interest standing in South Africa: Practical and participatory perspectives' (2017) 33(3) South African Journal on Human Rights 406-428.

public policy by urging increased action on mitigation of greenhouse gases [and] adaptation to the impacts of climate change [...].²³⁷

Similarly, Section 32(1)(e) NEMA specifies that entities that are not personally affected can have legal standing if an environmental matter in question constitutes a public interest. This may be done, *inter alia*, in the public interest or in the interest of protecting the environment. This role has found application in several recent challenges to developments, for example, in *Mining and Environmental Justice Community Network of South Africa and Others v Minister of Environmental Affairs and Others*²³⁸ and *Company Secretary, ArcelorMittal South Africa Limited and Another v Vaal Environmental Justice Alliance*.²³⁹

Moreover, in terms of administrative law, Section 6 of the Promotion of Administrative Justice Act no 3 of 2000 (PAJA) gives effect to the right to review administrative action, which must be lawful, reasonable and procedurally fair as per Section 33 of the Constitution. Such administrative action is supported by Section 31 of NEMA, which provides for access to environmental information and the protection of whistle-blowers.

In terms of the aforementioned provisions, South African courts have a growing role to play in climate change litigation.²⁴⁰ This includes providing judicial legitimacy; developing relevant legal principles; considering numerous factors that contribute to the state of climate change liability; increasing statutory enactments regulating climate change issues; establishing precedent and enforcing environmental rights protected under Section 24 of the Constitution.

6.4.2 The *Thabametsi* case

On 8 March 2017, the Gauteng High Court handed down a judgment in the case of *Earthlife Africa Johannesburg v Minister of Environmental Affairs and Others*²⁴¹ (hereinafter *Thabametsi* case).²⁴² The applicant was the NGO Earthlife Africa, while the Minister of Environmental Affairs, the Chief Director of Integrated Environmen-

237 Setzer and Byrnes (n 179) 2.

238 *Mining and Environmental Justice Community Network of South Africa and Others v Minister of Environmental Affairs and Others* (50779/2017) (2018) ZAGPPHC 807; (2019) 1 All SA 491 (GP) (8 November 2018).

239 *Company Secretary of Arcelormittal South Africa and Another v Vaal Environmental Justice Alliance* (69/2014) (2014) ZASCA 184; 2015 (1) SA 515 (SCA); (2015) 1 All SA 261 (SCA) (26 November 2014).

240 Rumble and Summers (n 192) 6-29.

241 *Earthlife Africa Johannesburg v Minister of Environmental Affairs and Others* (65662/16) (2017) ZAGPPHC 58; (2017) 2 All SA 519 (GP) (8 March 2017).

242 This was arguably the first climate litigation case on the African continent; Oliver C Ruppel, Conference presentation at the International Conference on Climate Change, Responsibility and Liability, Faculty of Law, University of Graz, Austria, 8 November 2018.

tal Authorisations Department of Environmental Affairs (DEA), the Director of Appeals and Legal Review Department of Environmental Affairs and the Thabametsi Power Project (Pty) Ltd were the respondents.²⁴³

In this matter, the court was required to deal with two issues, namely a review of the decision of the Minister of Environmental Affairs relating to the granting of environmental authorisation for the construction of a coal-fired power plant, and the obligation of the Minister to reconsider conducting a climate change impact assessment report for the proposed coal-fired power station.²⁴⁴

The proposed construction of a 1200 MW coal-fired power station in the Limpopo Province, expected to be in operation until 2061, was intended to address serious energy challenges that hinder South Africa's socio-economic development. In 2015, the Chief Director of the DEA granted an environmental authorisation to Thabametsi to construct the proposed coal-fired power station in terms of the Environmental Impact Assessments (EIA) Regulations of NEMA, which provides the procedures to be followed in conducting EIAs. As per Section 24 NEMA, all activities listed or specified by the Minister of Environmental Affairs must be granted an environmental authorisation before they are permitted to commence. The construction of a coal-fired power station is one of these listed activities. Therefore, a company that intends to build a new coal-fired power station requires an environmental authorisation, which the Chief Director of the DEA must issue. Section 24(1) of NEMA stipulates that the environmental impact of a listed activity must be considered, investigated, assessed, and reported to the competent authority responsible for deciding on an environmental authorisation. Pursuant to Section 24O(1) of NEMA, the competent authorities are required, when deciding on an application for an environmental authorisation, to take into account all relevant factors, including any pollution, environmental impact or environmental degradation likely to be caused by the approval or rejection of the application.

The applicant argued that the impact of a planned coal-fired power station on climate change is a relevant factor under Section 24O(1) of NEMA. Earthlife explained that climate change will continue to affect water resources, air quality, human health, biodiversity and marine fisheries and that South Africa has an international obligation to reduce GHG emissions as part of a global solution to a global problem. Earthlife argued that, as part of the integrated environmental authorisation process provided for in chapter 5 of NEMA and the requirement in Section 24O(1)(b), the GHG emissions and climate change impact of the project should have been considered by the Chief Director prior to granting the authorisation. Earthlife further argued that Section 24O(1) of NEMA requires as a compulsory prerequisite that a climate impact

243 Jean-Claude N Ashukem, 'Setting the scene for climate change litigation in South Africa' (2017) 13(1) *Law, Environment and Development Journal* 37-43.

244 *Ibid* 37.

assessment must be completed and reviewed prior to the granting of an environmental authorisation and, therefore, the environmental authorisation may not have been granted. The DEA brought forward that there is no provision in South Africa's national laws, regulations or policies that states that a climate impact assessment must be carried out before an environmental authorisation can be issued. Also, it stated that there is no such explicit provision as part of South Africa's international legal obligations to reduce GHG emissions, which are broad in scope and do not prescribe specific measures.

The court decided to suspend the grant of the environmental authorisation until a full investigation and consideration of the climate change impacts assessment report of the proposed coal-fired power station had been conducted.²⁴⁵ The case is a good example for the question of whether the authorities should take account of the climate objectives of the UNFCCC and the 2015 Paris Agreement in their domestic decision-making processes and what relevance they have within the national legal systems. One key question of the case was whether national administrative regulations must be interpreted in such a way that they are consistent with the climate objectives of international law.²⁴⁶ Given the lack of an explicit provision regulating the necessity of climate change assessment in the South African legal framework, the case seems to have been a major step forward in dealing with climate change in South Africa.²⁴⁷

After the High Court remitted the matter back to the Minister, who then decided to confirm the environmental authorisation. In the decision of 30 January 2018, the Minister stated that she had noted that the Thabametsi Power Station will result in significant GHG emissions and will therefore have climate change impacts. However, the Minister also pointed out that, although the environmental and social costs associated with the proposed power plant are high, this is not necessarily a critical deficiency, as the additional energy production capacity will bring benefits to the country. Moreover, the Minister argued that she has carefully considered all relevant factors, including climate change, but came to the result that the environmental authorisation should nevertheless be granted.²⁴⁸

On 26 March 2018, Earthlife Africa and Trustees for the Time Being of the Groundwork Trust challenged the Minister's decision, asking the court to set aside the decision as unlawful for failing to consider site-specific climate change impacts associated with the project. On 19 November 2020, the High Court, pursuant to an agreement between applicants and defendants, issued an order setting aside all gov-

245 *Earthlife Africa Johannesburg v Minister of Environmental Affairs and Others* 65662/16 (2017) ZAGPPHC 58; (2017) 2 All SA 519 (GP) (8 March 2017) para 41.

246 Anna-Julia Saiger 'Domestic courts and the Paris Agreement's climate goals: The Need for a comparative approach' (2020) 9(1) *Transnational Environmental Law* 37-54, 49.

247 *Ashukem* (n 243) 43.

248 Minister of Environmental Affairs, Appeal Decision, Reference LSA 142346.

ernmental authorisations for the coal-fired power plant. The Court also ordered the defendants to pay court costs.²⁴⁹

6.4.3 The *Philippi* case

On 17 February 2020, another climate-relevant judgment was handed down by the Western Cape High Court in *Philippi Horticultural Area Food and Farming Campaign and Another v MEC for Local Government, Environmental Affairs and Development Planning: Western Cape and 12 Others* (hereinafter *Philippi* case).²⁵⁰

The case is important, following upon the aforementioned *Thabametsi* decision in which climate change was recognised as a relevant factor to be considered when decision-makers were called upon to approve developments that might detrimentally impact the environment.

The first applicant was a voluntary association formed to protect the farmlands of the Philippi Horticultural Area ('the PHA'). The respondents included, *inter alia*, the Member of the Executive Council for Local Government, Environmental Affairs and Development Planning: Western Cape ('MEC'), the City of Cape Town and the Oakland City Development Company (Pty) Ltd, ('Oakland'), which was the developer.

The applicants sought to review approvals granted to Oakland pursuant to NEMA and the Land Use Planning Ordinance no 15 of 1985 for the development of housing for 15,000 families on approximately 171 hectares of land situated in Philippi, with schools, commercial industrial and other facilities. The Philippi area hosts intensive vegetable production, which relies upon the extraction of water from an aquifer. The applicants contended that the development would detrimentally affect the aquifer and its ability to recharge from rainfall and that the approvals ought not to have been granted.

The court, reviewing and setting aside the approvals and remitting the applications back for reconsideration, held that no proper decision could have been made without consideration of reports to address the impacts of the proposed development on the aquifer in the context of climate change and water scarcity. This decision confirms the South African courts' recognition of climate change (including water scarcity) as a relevant factor to be considered when approving developments.

The application was brought under the Promotion of Administrative Justice Act No 3 of 2000 (PAJA) for the review of the environmental authorisation granted for

249 Cf. <<https://bit.ly/3CbnolJ>> accessed 3 March 2022.

250 *Philippi Horticultural Area Food & Framing Campaign and Another v MEC for Local Government, Environmental Affairs and Development Planning: Western Cape and Others* (16779/17) (2020) ZAWCHC 8; 2020 (3) SA 486 (WCC) (17 February 2020).

the proposed development and the subsequent refusal of an appeal. PAJA is aimed at establishing the right to legitimate, fair and procedurally just administrative action in terms of Section 33 of the Constitution.²⁵¹ The applicants also sought the review of a separate decision by the City of Cape Town's Interim Planning Committee approving the rezoning and sub-division of the land for the development and the refusal of an appeal against that decision to the City's General Appeal Committee.

The land identified by Oakland for the proposed development represented approximately 20% of the PHA, which was reserved for use in horticulture, exploitation of silica and removal of dune sand. The Oakland land itself had not been farmed previously, portions of it having been used in the past for silica extraction and sand mining activities.

The applicants described the area as the 'breadbasket' of Cape Town since 1885. The area has an ideal micro-climate for producing horticultural crops (vegetables, herbs and flowers) and an abundance of aquifer water despite droughts, making the 3 000 hectares of farmlands the most productive and unique urban agricultural hub in the country. It was estimated that 6 000 farm workers were engaged in agricultural pursuits, with 1 500 hectares being intensively farmed, of which emerging farmers had 100 hectares. Nearly 1 000 hectares of the total was owned by developers and property speculators, who left the land fallow and did not farm those areas used for that purpose in the past.

Section 24(a) and (b) of the Constitution recognises the right to an environment that is not harmful to health or wellbeing and to have the environment protected, for the benefit of present and future generations, through measures that secure ecologically sustainable development and use of natural resources. Moreover, NEMA, in its preamble, recognises the dictates of the Constitution and that sustainable development requires the integration of social, economic and environmental factors to ensure that development serves present and future generations. To this end, Section 24 of NEMA provides for the consideration, investigation, assessment and reporting on potential consequences for integrated environmental management.

It was contended that the scoping and environmental impact assessment process was non-compliant with Sections 24(4) and 24O of NEMA, read with the relevant regulations, and that relevant considerations were not taken into account in granting the environmental authorisation. These included the potential impacts of the development on the aquifer/ground water, food security, climate change, land reform, heritage, the no-development alternative, need and desirability, cumulative impacts and gaps in knowledge.²⁵²

251 See <www.gov.za/documents/promotion-administrative-justice-act> accessed 28 March 2022.

252 *Philippi Horticultural Area Food & Framing Campaign and Another v MEC for Local Government, Environmental Affairs and Development Planning: Western Cape and Others* (16779/17) (2020) ZAWCHC 8; 2020 (3) SA 486 (WCC) (17 February 2020) para 56.

Section 24(4) of NEMA, relied upon by the applicants, requires that the potential consequences of proposed listed activities be assessed and that any application must, in terms of Section 24(4)(b), include *inter alia* the investigation of the potential consequences on the environment. Section 24O NEMA also relied upon by the applicants, provides the criteria to be taken into account by authorities when considering environmental approvals. These included all relevant factors, which may comprise pollution, environmental impacts or environmental degradation likely to be caused if the application is approved and measures that may be taken to protect the environment.

During the course of the process, Oaklands' predecessor obtained a civil engineering services report that had found that the aquifer was depleted due to excessive extraction from farming and insufficient recharge and considered that the recharge of the aquifer was imperative.²⁵³ This report recommended that provision be made for a stormwater management system that ensured that those parts of the land to be paved over be made permeable, and that provision be made for rechargeable ponds. Concerns were raised by the City of Cape Town regarding possible pollution of the aquifer through run-off of pollutants.

In seeking to have the environmental authorisation granted under NEMA reviewed and set aside by the court, the applicants contended that relevant considerations were not taken into account when granting the environmental approval, including relevant environmental and socio-economic impacts, food security, climate and the impact on the aquifer, given that the site of the proposed development was one of the few remaining primary recharge areas of the aquifer.²⁵⁴

The court acknowledged that food security was a relevant consideration but found that this issue had been considered. It then focused on the contention that the environmental authorisation was granted without a specialised aquifer impact assessment or a suitable specialist study being undertaken to assess the impact of the proposed development on the aquifer, its state and recharge requirements.²⁵⁵ The environmental impact assessment did not address the impact on the aquifer itself, but rather limited its focus to groundwater and the management of stormwater. The court referred to the reports that had been available to the decision-makers, which indicated that groundwater levels showed over-abstraction, compared to measurements 30 years previously, and that there was a risk of climate change reducing the aquifer's ability to recharge.

The court concluded, given that the development was over one of the deepest parts of the aquifer, that the environmental impact of the development on the aquifer was clearly a relevant consideration, which required consideration by the decision-

253 Ibid para 58.

254 Ibid para 80.

255 Ibid para 95.

makers.²⁵⁶ The court held that, in the absence of such a report, the decision-makers lacked the relevant material regarding the impact of the proposed development on the aquifer, and its impact on climate change and water scarcity. What was required was a more recent assessment of the state of the aquifer and the impact that the proposed development would have on the aquifer given climate change and water scarcity in the area.²⁵⁷

The court further held that the absence of the relevant reports limited the ability of the MEC to take into account relevant considerations as it was required to do by Sections 24O(1) and 24(4) of NEMA, and as a consequence, the decision was to be reviewed and set aside. This review was allowed in terms of Section 6(2)(e)(iii) of PAJA, relevant considerations not having been considered in the determination of the appeal in relation to the aquifer, as also under Section 6(2)(f)(ii) of that Act, in that the decision was considered neither to have been rational nor reasonable, given the limitations on the information before the decision-makers.

The court ordered, the decision having been set aside, that the application was to be remitted back to the MEC for consideration so that the MEC could have regard to relevant considerations, being directed to consider reports dealing with the impacts of the development on the aquifer, in the context of climate change and water scarcity; comments on these reports from interested and affected parties; and any additional information that he might require in order to reach a decision.

The applicants also sought a review of the City of Cape Town's approval of the rezoning and sub-division of the land, and the refusal of the appeal against that decision. The applicants complained that the City had failed to take into account relevant considerations, which included the importance of the PHA as an agricultural development zone, the importance of the aquifer, and issues of food security.²⁵⁸ The court recognised that, in determining rezoning and sub-division applications, the City was required to have regard to Section 36(1) and (2) of the Land Use Planning Ordinance, with regard to the desirability of the development; the preservation of the natural and development environment; and the effect on existing rights.

The court found that, in considering the issue of the aquifer in relation to the preservation of the natural environment and of existing rights, the information before the decision-makers was limited to that of stormwater and aquifer pollution and a discussion in the reports as to whether, in the light of over-extraction, the urban development or further agricultural use of the land would be more beneficial to the aquifer. The Court concluded that Section 36 of the Land Use Planning Ordinance required the decision-makers to take into account all relevant considerations in con-

256 *Ibid* para 99.

257 *Ibid* para 102.

258 *Ibid* para 111.

nection with the preservation of the natural environment. In relation to the aquifer itself, the Court held:

In relation to the aquifer, an assessment of the impact of development on it, having regard to the rights set out in Section 24 of the Constitution and the provisions of NEMA and its regulations, required consideration of the impact of the rezoning and sub-division sought in relation to the aquifer as a large underground natural resource, its state, future and impact on issues related to water scarcity and climate change.²⁵⁹

The court further held that the City, by failing to consider issues in relation to the aquifer, which were matters (for purposes of Section 36 of the Land Use Planning Ordinance) that related to the natural environment and impacted existing rights, had failed to consider relevant matters, and accordingly, Section 36 of the Land Use Planning Ordinance had not been complied with. The court then proceeded to review and set aside the decision of the City,²⁶⁰ both in terms of both Sections 6(2)(e)(iii) and 6(2)(f)(ii) of PAJA. The matter was remitted back to the City for reconsideration in the context of the preservation of the natural environment, the effect on the application on existing rights, and the aquifer and in the context of climate change and water scarcity in the City.²⁶¹ In the order, the court directed the General Appeals Committee to consider the reports dealing with the impacts of the development on the aquifer, in the context of climate change and water scarcity. The court recognised that, when approvals are sought for new developments, climate change is a relevant consideration, both in terms of Section 24O of NEMA and Section 36 of the Land Use Planning Ordinance. The former section, requiring the decision-maker to take into account all relevant factors, leaves scope for the courts to include issues such as climate change.

In the *Philippi* case, the proposed development was not itself an activity that would contribute to climate change, but the court addressed the potential impact of climate change, and consequent water shortage, on the aquifer if the proposed development (with an associated effect on water run-off and absorption) were allowed. In that respect, the *Philippi* case was ground-breaking, insofar as climate change was recognised as a relevant factor, even though the activity did not itself bear upon or contribute to climate change. If this approach is followed, it is to be anticipated that it will be the initiator for a wide range of future legal challenges to developments and activities, both current and proposed, on the basis of climate change.

259 Ibid para 130.

260 Ibid para 134.

261 Ibid para 135.

7 International law obligations

Climate change law intersections can be found at the different levels of international law. The horizontal level entails international law²⁶² with multilateral agreements on the global, regional and sub-regional level, bilateral (and unilateral) agreements, general principles of law, customary international law, case law, and other instruments such as declarations, agendas among others. These intersections make international climate change law extremely complex and global climate governance not very orchestrated.²⁶³ The international legal climate change regime is a product of international law,²⁶⁴ which has developed over the past few decades, after the dawn of the United Nations (UN) when rules and norms regulating activities carried on outside the legal boundaries of nations were developed. Numerous international agreements – bilateral, regional or multilateral – have been concluded, and international customary rules, as evidence of a general practice accepted as law, have been established.²⁶⁵

South Africa embarked upon a systematic effort to develop a coherent climate change policy and law.²⁶⁶ In fact, South Africa has often been at the forefront of international efforts to address climate change. Having served two prior terms on the United Nations Security Council (UNSC) South Africa was again elected as a non-permanent member of the UNSC from 2019-2020. This was not only an opportunity for the country to demonstrate its commitment to climate change efforts, international peace and security, the global rules-based order, but also reflect its prioritisation of the African continent.²⁶⁷ The UNSC and the UNFCCC climate regime have in common that they depend on cooperation with those national and international institutions that can contribute to the prevention of climate risks.²⁶⁸

262 Rosemary Rayfuse and Shirley V Scott, 'Mapping the impact of climate change on international law' in Rosemary Rayfuse and Shirley V Scott (eds), *International law in the era of climate change* (Edward Elgar 2012) 3-25.

263 Oliver C Ruppel, 'Intersections of law and cooperative global climate governance – challenges in the Anthropocene' in Oliver C Ruppel, Christian Roschmann and Katharina Ruppel-Schlichting (eds), *Climate change: International law and global governance Volume I: Legal responses and global responsibility* (Nomos Law Publishers 2013) 29-93.

264 Jan Glazewski and Oliver C Ruppel 'International environmental law: The international and regional dimension', in Jan Glazewski (ed), *Environmental law in South Africa* (LexisNexis South Africa 2021).

265 Ibid.

266 Robert B Kehew et al., 'Formulating and implementing climate change laws and policies in the Philippines, Mexico (Chiapas), and South Africa: A local government perspective' (2013) 18 *The International Journal of Justice and Sustainability* 723, 731.

267 Priyal Singh and Gustavo de Carvalho 'Looking back, looking forward: South Africa in the UN Security Council' in *Africa Report* (Institute for Security Studies 2020) 1.

268 Susanne Dröge, 'Addressing the risks of climate change: What role for the UN Security Council?' (2020) 6 *SWP Research Paper* (German Institute for International and Security Affairs) 1-36, 10.

South Africa signed the UNFCCC in 1993 and ratified it in 1997. The UNFCCC is a treaty in terms of international law and Article 2.1(a) of the Vienna Convention on the Law of Treaties. South Africa acceded to the Kyoto Protocol in 2002 and ratified the Paris Agreement in 2016 respectively. In 2010, South Africa was among the first emerging economies and developing countries to come forward with a voluntary emissions reduction pledge for 2020 under the Copenhagen Accord. The following year, South Africa hosted the 17th Conference of the Parties (COP17), which resulted in the launch of the Durban Platform for Enhanced Action. The 2011 National Climate Change Response White Paper sets out South Africa's international obligations in terms of the UNFCCC and the Kyoto Protocol and acknowledges the need to adapt to the inevitable impacts of climate change while also reducing South Africa's greenhouse gas emissions. The White Paper accepts that 'there will [...] be significant short and long-term social and economic benefits [...] that will result from a transition to a lower-carbon economy and society'.

South Africa's commitments under the UNFCCC generally, and in terms of the Paris Agreement more specifically, are the genesis of and rationale for its domestic legal response.²⁶⁹ For instance, in its statement on the virtual Special Cabinet Meeting of 14 September 2021, cabinet approved the submission of the country's 4th Biennial Update Report, which provides an update on the country's efforts to mitigate and adapt to climate change to the UNFCCC. The report outlines the policies implemented as well as the measures and actions undertaken by the country to reduce GHG emissions. It also provides an update on the transitioning interventions towards a lower-carbon economy guided by the National Climate Change Response Policy White Paper. South Africa has made a commitment to contribute fairly to the global efforts to stabilise GHG emissions within the country's developmental priorities.²⁷⁰

South Africa's NDC is premised on the adoption of a comprehensive, ambitious, fair, effective and binding multilateral rules-based agreement under the UNFCCC at COP21 in Paris.²⁷¹ The Paris Agreement entered into force on 4 November 2016 and contains the following cornerstones: As a long-term goal, it envisages to keep global warming well below two degrees and to pursue efforts to limit the temperature increase even further to 1.5 degrees compared to pre-industrial levels. The Agreement aims to avert dangerous climate change by rapidly phasing out greenhouse gas (GHG) emissions by the second half of the century (to achieve 'net zero' emissions) while promoting sustainable development and poverty eradication. The Paris Agreement provides for a system of NDCs, which form the spine of the Paris Agreement. These are voluntary commitments by states to climate change mitigation and adapta-

269 Schoeman (n 119) 10.

270 Cf. Statement on virtual Cabinet Meeting of 14 September 2021 <<https://bit.ly/3OE7CFU>> accessed 23 December 2021.

271 From South Africa's NDC submission, available at <<https://bit.ly/3NoX9h0>> accessed 28 March 2022.

tion, defined in a self-determined national process and are subject to review every five years. Financial commitments from developed countries, especially to the least developed countries, which suffer most from climate change, have been laid down just as provisions on loss and damage from climate change, whereas state liability or any form of interstate damages have explicitly been excluded in the agreement.

In 2015, South Africa submitted an intended NDC in the lead-up to the negotiations of the Paris Agreement.²⁷² In September 2021, South Africa updated and enhanced its NDC under the Paris Agreement, meeting its obligation under Article 4.9 to communicate NDCs every five years. South Africa's second (next) NDC will be communicated in 2025 as specified in UNFCCC decision 1/CP.21. The 2021 NDC update represents a progression within South Africa's first NDC and reflects a high level of ambition, based on science and equity, in light of prevailing national circumstances, meaning that just transition in South Africa will require international cooperation and support.²⁷³ Thus, South Africa emphasises the importance of the provision of multilateral support in the implementation of its updated NDC as provided for in the Paris Agreement to meet both adaptation and mitigation goals.²⁷⁴

In its statement on the virtual Special Cabinet Meeting of 14 September 2021, Cabinet approved South Africa's revised NDC climate change mitigation target range for 2030 for submission to the UNFCCC. South Africa has revised its target range for 2025 to 398-510 and for 2030 to 350-420 Metric tons of Carbon Dioxide equivalent (Mt Co2-eq). The revised target range takes into account the latest IPCC reports and is aligned with all stakeholders that contribute towards the country's efforts.²⁷⁵

8 Application of international law in the domestic legal order

Regarding the distinction between the monist and dualist approaches regarding the status of international law in a domestic legal order, the South African Constitution makes use of both approaches.²⁷⁶ In case of the application of international customary

272 See Alina Averchenkova, Kate Elizabeth Gannon and Patrick Curran, *Governance of climate change policy: A case study of South Africa* (Centre for Climate Change Economics and Policy, Grantham Research Institute on Climate Change and the Environment 2019) <www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2019/06/GRI_Governance-of-climate-change-policy_SA-case-study_policy-report_40pp.pdf> accessed 2 May 2020.

273 South Africa: First Nationally Determined Contribution under the Paris Agreement. Updated September 2021 (n 15).

274 Ibid.

275 Cf. <www.gov.za/speeches/statement-virtual-cabinet-meeting-14-september-2021-20-sep-2021-0000> accessed 23 December 2021.

276 Gerrit Ferreira, 'Legal comparison, municipal law and public international law: Terminological confusion?' (2013) 46(3) *Comparative and International Law Journal of Southern Africa* 337-364, 357.

law, Section 232 of the Constitution states that customary international law is law in the Republic unless it is inconsistent with the Constitution itself or an Act of Parliament and thus, there is no further implementing statute required for international customary law to become legally binding. In contrast, Section 231(4) of the Constitution determines that an international agreement becomes law in the Republic only when enacted into law by national legislation. For instance, Chapter 6 of NEMA explicit references to international environmental agreements and obligations and their applicability in South Africa.²⁷⁷

The Constitution further distinguishes between the obligations of the Republic on an international level that derive from international agreements to which South Africa is a party and their applicability in the domestic legal system.²⁷⁸ Section 231(2) of the Constitution requires the ratification of an international treaty by both the National Assembly and the National Council of Provinces except for those agreements that can be classified as technical, administrative or executive.²⁷⁹ The Constitution does not contain any definitions or indications of when these criteria are met. It is, however, important to emphasise that ratification by parliament does not replace the need for implementing legislation to guarantee the international treaty's domestic applicability.²⁸⁰ Therefore, Section 231(4) of the Constitution provides for the enactment of additional national legislation to transform the international treaty provisions into municipal law unless the particular agreement contains a self-executing provision. The legislature seems to use three different methods to incorporate international agreements into South African national law.²⁸¹ Firstly, the provisions of the particular agreement may be embodied in the text of an act. Secondly, the agreement may be included as a schedule to a statute and thus be incorporated by reference. Lastly, the legislation may authorise the executive to bring the agreement into effect as domestic law by publishing it in the Government Gazette. These principles were also mentioned in *Glenister v President of the Republic of South Africa*.²⁸² Once an interna-

277 Also see Lisa Chamberlain and Tumai Murombo, 'International environmental law in South Africa', in Erika de Wet, Holger Hestermeyer and Rüdiger Wolfrum (eds), *The implementation of international law in Germany and South Africa* (Pretoria University Law Press 2015) 277-307.

278 Section 231(2) and (4) Constitution.

279 Section 231(3) Constitution.

280 Gerrit Ferreira and Anel Ferreira-Snyman, 'The incorporation of public international law into municipal law and regional law against the background of the dichotomy between monism and dualism' (2014) 17(4) PELJ 1470-1496, 1481; Franziska Sucker 'Approval of an international treaty in parliament: How does Section 231(2) "bind the Republic"?' (2014) 5 Constitutional Court Review 417-434, 426.

281 John Dugard, *International law: A South African perspective* (4th edn, Juta & Co 2018) 61.

282 *Glenister v President of the Republic of South Africa and Others* CCT 48/10 (2011) ZACC 6; 2011 (3) SA 347 (CC); 2011 (7) BCLR 651 (CC) (17 March 2011).

tional agreement is incorporated into national legislation, its provisions enjoy the same legal status as the implementing legislation itself.²⁸³

In the *Thabametsi* case, it was made clear that NEMA must be interpreted consistently with international law, arising from the obligation contained in Section 233 of the Constitution, which enjoined the court to confer an interpretation of legislation consistent with international law. The court, therefore, considered that international agreements to which South Africa was a party,²⁸⁴ such as the UNFCCC, were relevant to an interpretation of Section 24O(1)(b) of NEMA. Article 3(3) of the UNFCCC requires all states to take precautionary measures to anticipate, prevent or minimise causes of climate change, and Article 4(1) imposes an obligation on all states and parties thereto to take climate change considerations into account in their environmental policies and actions. Article 4(1)(f) of the UNFCCC, referred to in the *Thabametsi* case, requires the parties to take into account policies and actions, for example, through impact assessments to minimise the effects of climate change on the economy, public health and the quality of the environment, projects or measures undertaken by them to mitigate or adapt to climate change.²⁸⁵

Lastly, Section 39(1)(b) of the Constitution also provides that international law must be considered when a court interprets the Bill of Rights. Although Section 39 provides that ‘international law must be considered’ it does not require that international law must be applied.²⁸⁶

9 Conclusion

It is encouraging that South Africa’s updated 2021 NDC speaks more clearly of decarbonising the energy sector than the 2020 LEDS.²⁸⁷ Same applies to the 2021 Climate Change Bill that will hopefully become enacted soon. However, true resilience in South Africa must also derive from social and environmental determinants - both reducing persistent inequality. The 2020 SDG Progress Report finds ‘continued unevenness of progress’ and identifies areas where significant improvement is required. In particular, ‘progress was stalled or reversed on the number of people suffering from hunger, the rate of climate change, and increasing inequalities’. This is espe-

283 Ibid para 100.

284 GN 1676, Government Gazette 18539, 19 December 1997, confirming the ratification by South Africa of the United Nations Framework Convention on Climate Change, after approval thereof by Parliament in terms of Section 231(2) of the Constitution.

285 *Earthlife Africa Johannesburg v Minister of Environmental Affairs and Others* (65662/16) (2017) ZAGPPHC 58; (2017) 2 All SA 519 (GP) (8 March 2017) paras 35, 87.

286 Christa Rautenbach, *Introduction to legal pluralism in South Africa* (5th edn, LexisNexis 2018) 75.

287 South Africa: First Nationally Determined Contribution under the Paris Agreement. Updated September 2021 (n 15).

cially true for South Africa having pledged to ensure that ‘no one will be left behind’, while vulnerable populations continue to struggle for access to clean water, free basic electricity and a clean and healthy environment.

The SDGs dovetail with the South African concept of *Ubuntu* with its special focus on humaneness and the community. However, while South Africa has made considerable strides toward improving the wellbeing of its citizens since its transition to democracy in the mid-1990s, its progress is slowing. According to the World Bank, South Africa is the most unequal country in the world with regard to income and faces severe challenges in alleviating poverty, striving for equality and providing employment for its people.²⁸⁸ As such, one needs to be reminded that regression by governments from agreed norms, such those in the SDGs, can be limited or reversed by focused judicial decisions.²⁸⁹

Fostering human rights, eliminating poverty and eradicating inequality requires creating decent employment, which in turn requires sustainable economic development, improving basic education, health and social welfare and many other basic needs such as access to food, water, shelter and modern energy services.²⁹⁰ At the heart of such transition lies the concept of progressive realisation. Moreover, a gradual transformation of the future energy mix should be designed to increasingly replace coal-fired power plants with clean and high-efficiency technology going forward. In doing so, South Africa must take steps that will result in the demise of the fossil fuel economy and its replacement with a clean energy economy that would be both more efficient and better for its people. South Africa is not Germany,²⁹¹ that is true. Yet, climate policy is not just domestic policy: it is foreign policy. While domestic policy goals often conflict with foreign policy objectives, this should not be the case with climate change and the only way to save the planet.²⁹² Moreover, while greenhouse gases alone don’t tell the full climate apartheid story,²⁹³ climate change can also become a driver of conflict as it exacerbates other existing drivers of conflict

288 Cf. The World Bank, ‘The World Bank in South Africa’ <<https://bit.ly/3DqAQDa>> accessed 28 March 2022.

289 Quoted from Nicholas A Robinson, ‘Road to Stockholm+50 (2022) and beyond, depleting time itself: The plight of today’s “human” environment’ (2021) 51 *Environmental Policy and Law* 361-369, 367.

290 Michael Addaney, Elsabe Boshoff and Bamisaye Olutola, ‘The climate change and human rights nexus in Africa’ (2017) 9(3) *Amsterdam Law Forum* 5-28.

291 ‘SA isn’t Germany.’ Mantashe says SA can’t ditch fossil fuels, as govt looks to gas from Moz, available at <www.news24.com/fin24/economy/south-africa/sa-is-not-germany-mantashe-says-sa-cant-ditch-fossil-fuels-as-govt-looks-to-gas-from-moz-20210709/> accessed 23 September 2021.

292 Robert O Keohane and Jeff D Colgan, ‘Save the environment, save American democracy: How a pro-climate vision can strengthen America’s social fabric’ (Foreign Affairs, 20 September 2021) <<https://www.foreignaffairs.com/articles/united-states/2021-09-20/save-environment-save-american-democracy>> accessed 3 March 2022.

293 Michelle Garcia, ‘The media isn’t ready to cover climate apartheid’ (The Nation, 17 June 2020) <<https://bit.ly/3pBvH5v>> accessed 22 June 2020.

and fragility, thereby challenging the stability of societies and, ultimately, threatening peace and security.²⁹⁴

‘Day zero’ has created a new sense of awareness, which is, for example, also reflected in the judgement of the *Philippi* case: South Africa is particularly vulnerable to the impacts of climate change and water scarcity. These impacts can also reduce and suffocate economic growth and exacerbate existing social inequalities.²⁹⁵ In view of the fact that South Africa is more than 25 years after the end of apartheid, the country is still in many ways divided in terms of income, opportunity and vulnerability. Previously disadvantaged South Africans need particular protection, recognising the injustices of the past. In this regard, South Africa’s national response rightfully considers both development needs and climate change imperatives as two sides of the same coin.²⁹⁶ In the spirit of *Ubuntu*, South Africa must now ensure to leave no one behind in their own country. At the same time, it must create new opportunities for all in the economy.²⁹⁷

A concerted effort to align decarbonisation and climate resilience with overall social and economic development objectives, as well as policies within specific sectors (e.g., energy, transport, water), would help to improve policy coordination across sectors, as well as longer-term planning and continuity.²⁹⁸

An aggressive South African move away from coal could demonstrate to other middle-income countries that decarbonisation and economic growth are not mutually exclusive and can, in fact, be self-reinforcing.²⁹⁹ In this light, the recently founded Just Energy Transition Partnership is encouraging, in an agreement on the side of COP26, the USA, France, Germany, the United Kingdom, the European Union (EU) and South Africa engaged in a decarbonisation model for developing countries. South Africa has agreed to use the US\$8.5 billion provided through the agreement to

294 See with further references Adrien Detges et al., *10 insights on climate impacts and peace: A summary of what we know* (Adelphi and Potsdam Institute for Climate Impact Research 2020) 4.

295 United Nations, ‘The world faces “climate apartheid” risk, 120 more million in poverty: UN expert’ (United Nations Climate and Environment, 25 June 2019) <<https://news.un.org/en/story/2019/06/1041261>> accessed 22 June 2020.

296 United Nations Development Programme, ‘What does it mean to leave no one behind?’ (UNDP, 9 August 2018) <<https://bit.ly/3FdW2gF>> accessed 29 April 2022.

297 Statement by HE President Cyril Ramaphosa of South Africa to the United Nations Secretary-General’s Climate Summit, 23 September 2019 <www.dirco.gov.za/docs/speeches/2019/cram0923.htm> accessed 22 June 2020.

298 Averchenkova et al. (n 22).

299 Cf. Zachary Donnenfeld, ‘COP26: A mixed bag for Africa’ (Institute for Security Studies, 6 December 2021) <<https://issafrica.org/iss-today/cop26-a-mixed-bag-for-africa>> accessed 23 December 2021.

move its electricity sector off of coal while simultaneously protecting jobs dependent on the industry.³⁰⁰

What still remains open is the question of how South Africa can improve its legal framework conditions to better protect the most vulnerable from those impacts. Because it is the law,

which lays down rules for admissible conduct in the light of the common good. The limits which a healthy, mature and sovereign society must impose are those related to foresight and security, regulatory norms, timely enforcement, the elimination of corruption, effective responses to undesired side-effects of production processes, and appropriate intervention where potential or uncertain risks are involved.³⁰¹

While there are already numerous positive and proactive regulatory measures in place that deal with the adaptation and mitigation of climate change, it should be noted that South Africa is still in a political process of fully formulating and implementing its climate policy for the future. It should be aimed at reaching the global climate goals and at the same time ensuring a just transition. There is, for instance, an urgent need to remove existing carbon tax exemptions, particularly for coal, and potentially introduce taxation on specific pollutants. The revenue generated by efficient pricing of fossil fuels could be used as targeted support for vulnerable households, while higher fossil fuel taxes fast-track South Africa's energy transition.³⁰² Unfinished business and ongoing developments should thus be seen against the background of the country's difficult economic starting position and as a step towards more effective regulation.³⁰³

Lastly, climate-related litigation efforts and the advancement of a comprehensive climate protection law (i.e., the Climate Change Bill) are bound to increase the levels of legal certainty and general awareness while at the same time promoting more climate-resilient development pathways.³⁰⁴ In this light, the importance of public participation in environmental decision-making processes cannot be overestimated.³⁰⁵ The *Thabametsi* precedent illustrates the role of South Africa's courts in af-

300 Cf. European Commission, 'France, Germany, UK, US and EU launch ground-breaking International Just Energy Transition Partnership with South Africa' (European Commission Press Release, 2 November 2021) <<https://bit.ly/3LnrF96>> accessed 28 March 2022.

301 Pope Francis, *Laudato Si': On care for our common home* (Encyclical 2015) para 177.

302 Bridle et al. (n 163).

303 Oliver C Ruppel, 'Climate change law and policy in the African Union and selected African countries' in Jaap Spier and Ulrich Magnus (eds), *Climate change remedies: Injunctive relief and criminal law responses* (Eleven International Publishing 2014) 191-225; Oliver C Ruppel, 'Climate change, law and development in Africa: A reflection on selected aspects, relations and responses' in Hans-Joachim Koch et al. (eds), *Legal regimes for environmental protection, governance for climate change and ocean resources* (Brill & Nijhoff Publishers 2015) 89-125.

304 Ruppel et al. (n 235).

305 Jean-Claude N Ashukem, 'Public participation in environmental decision-making in Cameroon – myth or reality?' in Patricia Kameri-Mbote et al. (eds), *Law | Environment | Africa*. Publication of the 5th Symposium | 4th Scientific Conference | 2018 of the Association of En-

firming the country's international climate change obligations and the duty and responsibility of the state to limit unfavourable impacts of climate change in the context of socio-economic development activities.

It is equally encouraging that climate (and related) litigation in South Africa is progressively on the rise: On 8 April 2021, two environmental groups filed a petition for review of South Africa's Department of Forestry, Fisheries and the Environment's authorisation of the Richards Bay 3 000 MW gas-fired power plant. Plaintiffs are the South Durban Community Environmental Alliance and groundWork. They allege that the Environmental Impact Assessment of the project included an inadequate assessment of its climate impacts in that it failed to account for the full life-cycle emissions of natural gas. The plaintiffs allege that the greenhouse gas footprint of natural gas is worse than coal and oil on a climate-relevant 20-year timescale and that alternatives like renewable energy were not given adequate consideration, seeking a court decision to set aside government approvals of the power plant.³⁰⁶

In June 2021, an environmental justice organisation filed a suit challenging the South African government's approval of offshore oil and gas exploration by Eni South Africa and Sasol, challenging the authorisation on several grounds, including the government's failure to consider the climate impacts resulting from the exploration in its Environmental Impact Assessment. The plaintiffs allege that this is in violation of the country's climate change commitments, including those under the Paris Agreement, and its environmental assessment laws.³⁰⁷

In an order dated 27 May 2021, the Pretoria High Court declared that the environmental approval for the planned 600 MW Khanyisa coal-fired power station has expired. Khanyisa would have been built on the outskirts of Emalahleni, already plagued by toxic air pollution. The ruling came as a result of a legal challenge to the project's environmental authorisation by environmental justice group groundWork, represented by the Centre for Environmental Rights. groundWork initially launched the litigation against ACWA Power to challenge the project in the Pretoria High Court in 2017. It sought to set aside the environmental approval for the plant on the basis that ACWA Power failed adequately to assess the project's climate change impacts and that the Minister responsible for Environment (the late Minister Edna Molewa) failed to consider the climate change impacts before approving the project. The decision against the Khanyisa project reflects the power of public interest litigation. Another proposed coal project – the KiPower coal power station – also chal-

vironmental Law Lecturers from African Universities in cooperation with the Climate Policy and Energy Security Programme for Sub-Saharan Africa of the Konrad-Adenauer-Stiftung (Law and Constitution in Africa Vol. 38, Nomos 2019) 357-373, 357.

306 Cf. <https://climate-laws.org/geographies/south-africa/litigation_cases/sdcea-groundwork-v-minister-of-forestry-fisheries-and-the-environment> accessed 23 December 2021.

307 Cf. <<https://bit.ly/3HSXUes>> accessed 6 March 2022.

lenged through litigation by groundWork, has also had its environmental authorisation lapse.³⁰⁸

Also, in 2021, the South African Constitutional Court has for a second time stopped an attempt by a coal-mining company to have it intervene in a lengthy legal battle over a proposed underground mine in the critical wetland water conservation area of Mabola, Mpumalanga. Uthaka Energy (Pty) Ltd (formerly known as Atha-Africa Ventures), a local subsidiary of India-based mining and minerals company Atha Group, had planned to start operations at its Yzermyn underground coal mine at Mabola earlier in 2021. The Constitutional Court dismissed the application by Uthaka Energy for leave to appeal an interdict order granted by the Pretoria High Court in March 2021.³⁰⁹

In November 2021, several civil society organisations launched a litigation case in the North Gauteng High Court against the South African government, demanding that it abandons its plans to build 1,500 MW of new coal-fired power on the grounds that it poses significant unjustifiable threats to constitutional rights. The so-called #CancelCoal court case was launched by the youth-based African Climate Alliance, the community-based Highveld group, the Vukani Environmental Justice Movement in Action and groundWork, represented by the Centre for Environmental Rights, against the Minister of Energy and the National Energy Regulator of South Africa, instituting court proceedings in the public interest and vindicating a constitutional right to an environment that is not harmful to health and wellbeing of present and future generations.³¹⁰ So, what we can see is that courts have the power to end ‘business as usual’.³¹¹ Some of the South African cases and many others around the globe came in the wake of COP26³¹² and growing global consensus that, in the interest of a just energy transition, coal must be urgently phased out if the world is to prevent further catastrophic global warming.³¹³ In fact, it is imperative that all future climate policy will inevitably lead to a devaluation of fossil fuels. Yet, on the way to COP27

308 Cf. Centre for Environmental Rights, ‘Final nail in the coffin for proposed Khanyisa Coal Power Station’ (3 June 2021) <<https://cer.org.za/news/final-nail-in-the-coffin-for-proposed-khanyisa-coal-power-station>> accessed 23 December 2021.

309 Cf. John Yeld, ‘ConCourt dismisses Uthaka Energy’s appeal bid against Mpumalanga coal mining interdict’ (Daily Maverick, 17 November 2021) <<https://bit.ly/3NspNxP>> accessed 28 March 2022.

310 Cf. Centre for Environmental Rights, ‘Youth-led #CancelCoal climate case launched against government’s plan for new coal-fired power’ (17 November 2021) <<https://cer.org.za/news/youth-led-cancelcoal-climate-case-launched-against-governments-plans-for-new-coal-fired-power>> accessed 23 December 2021.

311 Robinson (n 289).

312 The COP26 outcome, the Glasgow Climate Pact constituted a significant step forward in multilateral climate policy, where governments, such as South Africa, have moved the goalposts in revisiting their national targets in their NDCs and targeting coal and fossil fuels. In addition, the completion of the Paris Agreement rule book on transparency and on carbon markets was another important achievement of COP26.

313 Centre for Environmental Rights (n 308).

in Sharm el-Sheikh, Egypt further action is required to breathe more life into the Glasgow Climate Pact while addressing the socio-economic impacts of a just energy transition.

South Africa's contemporary economy, viewed through the lenses of climate justice, still projects the injustices of the past onto future generations because the burdens of mining and coal are still disproportionately borne by the poor, exacerbating the unjust legacies left behind by apartheid.³¹⁴ Ultimately, apartheid, colonialism and our imperial past in Africa have long been centred around power, ports, settlement structures, access to land, exploitation of natural resources and commodities such as metals, crops and minerals, and subjugated labourers and people. The history of climate change is therefore also a history of capitalism, colonialism and apartheid, all of which have always been accompanied by serious human rights violations.³¹⁵

In this light, we not only need to design an improved accountability system and to manage our natural resources as public goods in a fairer and more equitable manner. So far, it has not been legally clarified how to deal with historical and extraterritorial responsibility implications of climate change.³¹⁶ In response thereto, we need to stretch traditional legal concepts in an intertemporal and interpersonal dimension, where today's climate responsibility must take into account both the injustices of the past and the fundamental rights of future generations and of nature itself. We thus need to counter the climate crisis in the interest of past, present and future generations and must perhaps start facing up to prevalent injustices in light of the term that Olof Palme, the then Prime Minister of Sweden, used in 1972 at the United Nations Conference on the Human Environment in Stockholm, to describe (severe, widespread, irreversible or long-term)³¹⁷ environmental damage: *Ecocide*.³¹⁸

314 Cf. Ramin Pejan, 'South Africa's youth take on coal and the climate crisis' (Earth Justice, 9 December 2021) <<https://earthjustice.org/from-the-experts/2021-december/south-africas-youth-take-on-coal-and-the-climate-crisis>> accessed 23 December 2021.

315 Miriam Saage-Maaß, 'Das Recht von Mensch und Natur: Der Kampf gegen die Klima- Apartheid' (2022) 2 *Blätter für deutsche und internationale Politik* 25-28.

316 *Ibid.*

317 In 2021, the Independent Expert Panel for the Legal Definition of Ecocide expressed its desire and determination to add ecocide as a new crime to the Rome Statute. The Panel recommends consequential amendments to the Rome Statute, such as Articles 5, 9, and to the International Criminal Court (ICC) Rules of Procedure and Evidence, and the Elements of Crimes. For the purpose of such amendment (Article 8(1)) 'ecocide' means unlawful or wanton acts committed with knowledge that there is a substantial likelihood of severe and either widespread or long-term damage to the environment being caused by those acts. For the purpose of paragraph 1 'wanton' means with reckless disregard for damage which would be clearly excessive in relation to the social and economic benefits anticipated; 'severe' means damage which involves very serious adverse changes, disruption or harm to any element of the environment, including grave impacts on human life or natural, cultural or economic resources; 'widespread' means damage which extends beyond a limited geographic area, crosses state boundaries, or is suffered by an entire ecosystem or species or a large number of human beings; 'long-term' means damage which is irreversible or which cannot be redressed through natural recovery within a reasonable period of time; and 'environment' means the earth, its biosphere,

Bibliography

- Addaney M, Boshoff E and Olutola B, 'The climate change and human rights nexus in Africa' (2017) 9(3) *Amsterdam Law Forum* 5-28.
- Ahmed R, 'The influence of reasonableness on the element of conduct in delictual or tort liability – comparative conclusions' (2019) 22 *Potchefstroom Electronic Law Journal* 1.
- Ambunda LN and Mugadza WT, 'The protection of children's rights in Namibia: Law and policy' in Ruppel OC (ed), *Children's rights in Namibia* (Macmillan Education Namibia 2009) 5-51.
- Amougou JA, Forghab PM and Ruppel OC, 'Le cadre juridique du changement climatique au Cameroun' in Ruppel OC and Kam Yogo ED (eds), *Environmental law and policy in Cameroon – towards making Africa the tree of life* (Law and Constitution in Africa Vol. 37, Nomos 2018) 713-730.
- Ashukem JCN, 'Setting the scene for climate change litigation in South Africa' (2017) 13(1) *Law, Environment and Development Journal* 37-43.
- , 'Public participation in environmental decision-making in Cameroon – myth or reality?' in Kameri-Mbote P et al. (eds), *Law | environment | Africa*. Publication of the 5th Symposium, 4th Scientific Conference 2018 of the Association of Environmental Law Lecturers from African Universities in cooperation with the Climate Policy and Energy Security Programme for Sub-Saharan Africa of the Konrad-Adenauer-Stiftung (Law and Constitution in Africa Vol. 38, Nomos 2019) 357-373, 357.
- Averchenkova A, Gannon KE and Curran P, 'Governance of climate change policy: A case study of South Africa' (Grantham Research Institute on Climate Change and the Environment and Centre for Climate Change Economics and Policy, London School of Economics and Political Science, June 2019) <www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2019/06/GRI_Governance-of-climate-change-policy_SA-case-study_policy-report_40pp.pdf> accessed 2 May 2020.
- Ayoade MA, 'Bridging the gap between climate change and energy policy options: what next for Nigeria?' in Kameri-Mbote P et al. (eds), *Law | environment | Africa*. Publication of the 5th Symposium, 4th Scientific Conference 2018 of the Association of Environmental Law Lecturers from African Universities in cooperation with the Climate Policy and Energy Security Programme for Sub-Saharan Africa of the Konrad-Adenauer-Stiftung (Law and Constitution in Africa Vol. 38, Nomos 2019) 83-103.
- Baudoin MA and Ziervogel G, 'What role for local organisations in climate change adaptation? Insights from South Africa' (2017) 17(3) *Regional Environmental Change* 691.
- Bennett TW, 'Conflict of laws' in Bekker JC, Labushagne JMT and Vorster LP (eds), *Introduction to legal pluralism in South Africa* (Butterworth's Publishers 2002).
- , 'Africanising the common law: IMBIZO/leKGOTLA/PITSO and the principle of public participation' in Ruppel OC and Winter G (eds), *Legal pluralism in Africa and beyond. Liber*

cryosphere, lithosphere, hydrosphere and atmosphere, as well as outer space. The word ecocide combines the Greek 'oikos', meaning house/home (and later understood to mean habitat/environment), with 'cide', meaning to kill. This draws on the approach taken by the Polish jurist Rafael Lemkin, who invented the word 'genocide' in November 1944; Stop Ecocide Foundation, Independent Expert Panel for the Legal Definition of Ecocide, 'Commentary and Core Text' (June 2021) <<https://bit.ly/35kV9oZf>>, accessed 28 December 2021.

- 318 Cf. Melissa Godin, 'Lawyers are working to put 'Ecocide' on par with war crimes. Could an international law hold major polluters to account?' (TIME, 19 February 2021) <<https://time.com/5940759/ecocide-law-environment-destruction-icc/>>, accessed 28 December 2021.

- amicorum Manfred O Hinz in celebration of his 75th birthday; Recht von innen: Rechtspluralismus in Afrika und anderswo. Festschrift Manfred O Hinz anlässlich seines 75. Geburtstages* (Dr. Kovac Law Publishers 2011) 178-192.
- Boshoff E and Damtew SG, 'Children's rights to sustainable development under the African human rights framework' in *African human rights law yearbook* (Vol 3, Pretoria University Law Press 2020) 119-141.
- Bridle R et al., 'South Africa's energy fiscal policies: An inventory of subsidies, taxes, and policies impacting the energy transition' (International Institute for Sustainable Development 2022) <<https://www.iisd.org/system/files/2022-01/south-africa-energy-subsidies.pdf>> accessed 1 February 2022.
- Burchell JM, *Principles of delict* (Juta & Co 1993).
- BusinessTech, 'South Africa has a new Climate Change Bill – here's what you need to know' (11 June 2018) <<https://businesstech.co.za/news/energy/250747/south-africa-has-a-new-climate-change-bill-heres-what-you-need-to-know>> accessed 05 May 2020.
- Centre for Environmental Rights, 'Final nail in the coffin for proposed Khanyisa coal power station' (3 June 2021) <<https://cer.org.za/news/final-nail-in-the-coffin-for-proposed-khanyisa-coal-power-station>> accessed 23 December 2021.
- , 'Youth-led #CancelCoal climate case launched against government's plan for new coal-fired power' (17 November 2021) <<https://cer.org.za/news/youth-led-cancelcoal-climate-case-launched-against-governments-plans-for-new-coal-fired-power>> accessed 23 December 2021.
- Chamberlain L and Murombo T, 'International environmental law in South Africa', in de Wet E, Hestermeyer H, Wolfrum R (eds), *The implementation of international law in Germany and South Africa* (Pretoria University Law Press 2015) 277-307.
- Cheadle H, 'Limitation of rights' in Cheadle H, Davies D and Haysom N (eds), *South African constitutional law: The bill of rights* (LexisNexis 2005) 30-8(1).
- Chenwi L, 'Unpacking "progressive realisation", its relation to resources, minimum core and reasonableness, and some methodological considerations for assessing compliance' (2013) 46 De Jure 742.
- Church J, 'Sustainable development and the culture of Ubuntu' (2012) De Jure 511-531.
- Department for Environmental Affairs, '20 Years of environment impact assessment in South Africa' <www.dffe.gov.za/sites/default/files/docs/publications/EIAbooklet.pdf> accessed 19 December 2021.
- Detges A et al., *10 Insights on climate impacts and peace: A summary of what we know* (Adelphi and Potsdam Institute for Climate Impact Research 2020).
- Donnenfeld Z, 'COP26: A mixed bag for Africa' (*Institute for Security Studies*, 6 December 2021) <<https://issafrica.org/iss-today/cop26-a-mixed-bag-for-africa>> accessed 23 December 2021.
- Dröge S, 'Addressing the risks of climate change: What role for the UN Security Council?' (2020) 6 SWP Research Paper (German Institute for International and Security Affairs) 1-36.
- Du Bois F, *Willie's principles of South African law* (9th edn, Juta & Co 2009).
- Du Plessis H, 'Legal pluralism, uBuntu and the use of open norms in the South African common law of contract' (2019) 22 PELJ 1.
- Dugard J, *International law: A South African perspective* (4th edn, Juta & Co 2018).
- Energy Research Centre, 'Long term mitigation scenarios: Technical summary' (Department of Environment Affairs and Tourism 2007) <https://media.africaportal.org/documents/07ERC-LTMSTechnical_Summary.pdf> accessed 23 June 2020.

- European Commission, 'France, Germany, UK, US and EU launch ground-breaking international just energy transition partnership with South Africa' (*European Commission Press Release*, 2 November 2021) <https://ec.europa.eu/commission/presscorner/detail/en/IP_21_5768> accessed 23 December 2021.
- Faris JA, 'African customary law and common law in South Africa: Reconciling contending legal systems' (2015) 10(2) *International Journal of African Renaissance Studies - Multi-, Inter- and Transdisciplinary* 171.
- Ferreira G, 'Legal comparison, municipal law and public international law: Terminological confusion?' (2013) 46(3) *Comparative and International Law Journal of Southern Africa* 337-364.
- and Ferreira-Snyman A, 'The incorporation of public international law into municipal law and regional law against the background of the dichotomy between monism and dualism' (2014) 17(4) *PELJ* 1470-1496.
- Flatt VB and Zerbe RO, 'Climate change common law nuisance suits: A legal-efficiency analysis' (2019) 49(3) *Lewis & Clark Law School Environmental Law Review* 683-702.
- Fløttum K and Gjerstad Ø, 'The role of social justice and poverty in South Africa's National Climate Change Response White Paper' (2017) 29 *SAJHR* 61.
- Garcia M, 'The media isn't ready to cover climate apartheid' (*The Nation*, 17 June 2020) <www.thenation.com/article/environment/climate-apartheid-inequality-media/> accessed 22 June 2020.
- Gerechtshof Den Haag, 'Shell Nigeria liable for oil spills in Nigeria' (29 January 2021) <www.rechtspraak.nl/Organisatie-en-contact/Organisatie/Gerechtshoven/Gerechtshof-Den-Haag/Nieuws/Paginas/Shell-Nigeria-liable-for-oil-spills-in-Nigeria.aspx> accessed 29 December 2021.
- Glazewski J, 'Legal and regulatory aspects of carbon capture and storage: A developed and developing country perspective' in Ruppel OC, Roschmann C and Ruppel-Schlichting K (eds), *Climate change: International law and global governance. Volume I: Legal responses and global responsibility* (Nomos Law Publishers 2013) 933-956.
- and Collier D, 'South Africa' in Brunnee J et al. (eds), *Climate change liability: Transnational law and practice* (Cambridge University Press 2012) 319.
- and Ruppel OC 'International environmental law: The international and regional dimension', in Glazewski J (ed), *Environmental law in South Africa* (LexisNexis South Africa 2021).
- Godin M, 'Lawyers are working to put 'ecocide' on par with war crimes. Could an international law hold major polluters to account?' (*TIME*, 19 February 2021) <<https://time.com/5940759/ecocide-law-environment-destruction-icc/>> accessed 28 December 2021.
- Havenga P et al. (eds), *General principles of commercial law* (4th edn, Juta Law 2002).
- Hinz MO and Ruppel OC, 'Biodiversity conservation under Namibian environmental law' in Schmiedel U and Jürgens N (eds), *Biodiversity in Southern Africa. Volume 2: Patterns and processes at regional scale* (Klaus Hess Publishers 2010) 190-194.
- Humby T et al. (eds), *Introduction to law and legal skills in South Africa: Jurisprudence* (Oxford University Press 2012).
- IPCC, *Climate change 2014: Synthesis report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (IPCC 2014) <www.ipcc.ch/pdf/assessment-report/ar5/syr/SYR_AR5_FINAL_full.pdf> accessed 10 February 2020.
- , 'About the IPCC' <www.ipcc.ch/organization/organization.shtml#.URelrnhpvos> accessed 17 February 2020.

- Keheew RB et al., 'Formulating and implementing climate change laws and policies in the Philippines, Mexico (Chiapas), and South Africa: A local government perspective' (2013) 18 *The International Journal of Justice and Sustainability* 723.
- Keohane R and Colgan JD, 'Save the environment, save American democracy: How a pro-climate vision can strengthen America's social fabric' (*Foreign Affairs*, 20 September 2021) <<https://fam.ag/3Nv28NI>> accessed 28 March 2022.
- Kidd M, *Environmental law* (2nd edn, Juta & Co 2011).
- Klaasen A, 'The quest for socio-economic rights: The rule of law and violent protest in South Africa' (2020) 28 *Sustainable Development* <<https://doi.org/10.1002/sd.2038>> accessed 21 March 2020.
- Knoetze-le Roux I, 'Ways to curb expert bias' (2017) 37 *De Rebus* 5.
- Landrigan P et al., 'Pollution prevention and climate change mitigation: Measuring the health benefits of comprehensive interventions' (2018) 2 *The Lancet* 515.
- Lofts K et al., 'Brief on sustainable development goal 13 on taking action on climate change and its impacts: Contributions of international law, policy and governance' (2017) 13 *MJSDDL-RDDDM* 183.
- Loubser M, 'Linguistic factors into the mix: The South African experience of language and the law' (2003) 78(2) *Tulane Law Review* 105.
- , 'Law of delict' in Van der Merwe CG and Du Plessis JE (eds), *Introduction to the law of South Africa* (Kluwer Law International 2004) 283.
- et al. (eds), *Law of delict in South Africa* (3rd edn, Oxford University Press 2018).
- Matthews T and McLaren D, 'Budget analysis for advancing socio-economic rights' (Studies in Poverty and Inequality Institute 2016) <www.sahrc.org.za/home/21/files/2016%20SPII%20SAHRC%20Guide%20to%20Budget%20Analysis%20for%20Socio-Economic%20Rights.pdf> accessed 22 March 2020.
- Menski W, 'Flying kites in Africa: Legal pluralism in a plural world' in Ruppel OC and Winter G (eds), *Legal pluralism in Africa and beyond. Liber amicorum Manfred O Hinz in celebration of his 75th birthday; Recht von innen: Rechtspluralismus in Afrika und anderswo. Festschrift Manfred O Hinz anlässlich seines 75. Geburtstages* (Dr. Kovac Law Publishers, 2011) 141-157.
- Minnerop P and Otto F, 'Climate change and causation: Joining law and climate science on the basis of formal logic' (2020) 27 *Buffalo Journal of Environmental Law*.
- Montesquieu C, *De l'esprit des lois* (1st edn, Barrillot et Fils 1748).
- Müller R, 'Montesquieu über Umwelt und Gesellschaft – die Klimatheorie und ihre Folgen' (2005) 80 *Sitzungsberichte der Leibniz-Sozietät* 19-32.
- Ndwandwe S, 'Rights-recognition theory: An African perspective' in Bialostocka O (ed) *Agenda 2063: Culture at the heart of sustainable development* (HSRC Press 2018) 79-92.
- Neethling J, 'The conflation of wrongfulness and negligence: Is it always such a bad thing for the law of delict?' (2006) 123 *SALJ* 204.
- , Potgieter JM and Visser PJ, *Law of delict* (7th edn, LexisNexis 2015).
- Niang I et al., (eds) *Climate change 2014: Impacts, adaptation, and vulnerability. Part B: Regional aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press 2014) 1199-1265.
- O'Malley K, 'The 1993 Constitution of the Republic of South Africa – The Constitutional Court' (1996) 8(2) *Journal of Theoretical Politics* 177-191.

- Okere BO, 'The protection of human rights in Africa and the African Charter on Human and Peoples' Rights: A comparative analysis with the European and American systems' (1984) 6(2) *Human Rights Quarterly* 141-159.
- Pejan R, 'South Africa's youth take on coal and the climate crisis' (*Earth Justice*, 9 December 2021) <<https://earthjustice.org/from-the-experts/2021-december/south-africas-youth-take-on-coal-and-the-climate-crisis>> accessed 23 December 2021.
- Petrie B et al., 'Multi-level climate governance in South Africa. Catalysing finance for local climate action' (*OneWorld Sustainable Investments, Sustainable Energy Africa and adelphi* 2018) <<https://bit.ly/3JNsIPr>> accessed 28 March 2022.
- Pienaar G, 'The methodology used to interpret customary land tenure' (2012) 15 *PELJ* 152.
- Piergallini LJ, 'An empirical investigation of Montesquieu's theories on climate' (2016) 10(6) *World Academy of Science, Engineering and Technology International Journal of Economics and Management Engineering* 2017-2028.
- Pope Francis, *Laudato Si': On care for our common home* (Encyclical 2015).
- Posner E and Sunstein CR, 'Climate change justice' (2008) 96 *Georgetown Law Journal* 1565.
- Prest C, *The law and practice of interdicts* (Juta & Co 1996).
- Rajak H, 'A virile living system of law: An exploration of the South African legal system' (2011) 61 *Focus* 44.
- Rautenbach C, 'Deep legal pluralism in South Africa: Judicial accommodation of non-state law' (2010) 60 *Journal of Legal Pluralism and Unofficial Law* 143.
- , *Introduction to legal pluralism in South Africa* (5th edn, LexisNexis 2018).
- Rautenbach IM, *Rautenbach-Malherbe constitutional law* (6th edn, LexisNexis Butterworths 2012).
- Rayfuse R and Scott SV, 'Mapping the impact of climate change on international law' in Rayfuse R and Scott SV (eds), *International law in the era of climate change* (Edward Elgar 2012) 3-25.
- Reddell C, *Directors' liability and climate risk: South Africa* (Country Paper. Commonwealth Climate and Law Initiative 2018).
- Republic of South Africa, 'Building a better world: The diplomacy of Ubuntu: White Paper on South Africa's Foreign Policy' (13 May 2011) <<https://bit.ly/3uC5XaG>> accessed 28 March 2022.
- , 'National Development Plan 2030. Our future-make it work' (Republic of South Africa, 2012) <www.govza/sites/default/files/gcis_document/201409/ndp-2030-our-future-make-it-workr.pdf> accessed 2 May 2020.
- , 'South Africa: First nationally determined contribution under the Paris Agreement. Updated September 2021' <<https://bit.ly/3JN2EUF>> accessed 28 March 2022.
- Richman MB and Leslie LM, 'The 2015-2017 Cape Town drought: Attribution and prediction using machine learning' (2018) 114 *Procedia Computer Science* 248-257.
- Robins S, 'Day zero', hydraulic citizenship and the defence of the commons in Cape Town: A case study of the politics of water and its infrastructures (2017-2018)' (2019) 45(1) *Journal of Southern African Studies* 5.
- Robinson NA, 'Road to Stockholm+50 (2022) and beyond, depleting time itself: The plight of today's "human" environment' (2021) 51 *Environmental Policy and Law* 361-369.
- Rooney J, 'Class actions and public interest standing in South Africa: Practical and participatory perspectives' (2017) 33(3) *South African Journal on Human Rights* 406-428.
- Rumble O, 'Climate change legislative development on the African continent' in Kameri-Mbote R et al. (eds), *Law | environment | Africa*. Publication of the 5th Symposium, 4th Scientific Conference 2018 of the Association of Environmental Law Lecturers from African Universities in co-

- operation with the Climate Policy and Energy Security Programme for Sub-Saharan Africa of the Konrad-Adenauer-Stiftung (Law and Constitution in Africa Vol. 38, Nomos 2019) 33-60.
- , and Summers R, 'Climate change litigation' in Humby T et al. (eds), *Climate change: Law and governance in South Africa* (Juta & Co 2016) 6-1.
- Ruppel OC, 'Introduction' in Ruppel OC (ed), *Women and custom Namibia: Cultural practice versus gender equality?* (Macmillan Education Namibia 2008) 21-25.
- , 'Climate change, natural disasters and human security: International law and diplomacy responses from an African perspective' (2012) *Zanzibar Yearbook of Law* (ZYBL) 3-25.
- , 'Intersections of law and cooperative global climate governance – challenges in the anthropocene' in Ruppel OC, Roschmann C and Ruppel-Schlichting K (eds), *Climate change: International law and global governance. Volume I: Legal responses and global responsibility* (Nomos Law Publishers 2013) 29-93.
- , 'Climate change law and policy in the African Union and selected African countries' in Spier J and Magnus U (eds), *Climate change remedies: Injunctive relief and criminal law responses* (Eleven International Publishing 2014) 191-225.
- , 'Climate change, law and development in Africa: A reflection on selected aspects, relations and responses' in Koch HJ et al. (eds), *Legal regimes for environmental protection, governance for climate change and ocean resources* (Brill & Nijhoff Publishers 2015) 89-125.
- , 'Constitutionalism and constitutional reform: Selected aspects from a regional perspective' in Ruppel OC, Scherr KM and Berndt AD (eds), *Assessing progress in the implementation of Zimbabwe's new Constitution. National, regional and global perspectives* (Law and Constitution in Africa Vol. 32, Nomos 2017) 51-83.
- , Conference presentation at the International Conference on Climate Change, Responsibility and Liability, Faculty of Law, University of Graz, Austria, 8 November 2018.
- , 'Climate law and climate science: Joint enabler for a new climate enlightenment?' Public lecture at the official occasion of the inception conference of Clim:Law, the Graz Research Center for Climate Law, University of Graz, Austria, 17 June 2020.
- , 'Climate law and climate science: Joint enabler of a new climate enlightenment?' in Schulev-Steindl E, Ruppel OC and Kerschner F (eds), *Climate law – current opportunities and challenges: Essays from the official opening of ClimLaw: Graz* (Series on Legal Perspectives on Global Challenges Vol. 6, Eleven International Publishing 2021) 55-71.
- , 'Internationale Standards für nationale Umwelthaftungsnormen: Eine afrikanische Perspektive' (2021) 5 *afrika süd-dossier: Klimakrise im südlichen Afrika* 37-39 <www.afrikasued.org/ausgaben/heft-5-2021/internationale-standards-fuer-nationale-umwelthaftungsnormen-eine-afrikanische-perspektive/> accessed 29 December 2021.
- and Ambunda LN, *The justice sector and the rule of law in Namibia: Framework, selected legal aspects and cases* (Namibia Institute for Democracy and Human Rights and Documentation Centre 2011) 76-99.
- and Borgmeyer T, 'The BRICS partnership from a South African perspective: Sustainable development space in a new global governance' in Ndulo M and Kayizzi-Mugerwa S (eds), *Financing innovation and sustainable development in Africa* (Cambridge Scholars Publishing 2018) 282-306.
- and Funteh MB, 'Climate change, human security and the humanitarian crisis in the Lake Chad Basin region: Selected legal and developmental aspects with a special focus on water governance' in Kameri-Mbote P et al. (eds), *Law | environment | Africa*. Publication of the 5th Symposium, 4th Scientific Conference 2018 of the Association of Environmental Law Lecturers from African Universities in cooperation with the Climate Policy and Energy Security Programme for

- Sub-Saharan Africa of the Konrad-Adenauer-Stiftung and UN Environment (Law and Constitution in Africa Vol. 38, Nomos 2019) 99-128.
- , Junger GW and Knutton KM, 'Der Klimawandel in der Governance, Gesetzgebung und Rechtsprechung Südafrikas: Ein Überblick über die jüngsten Entwicklungen' (2020) 5 Zeitschrift für Umweltrecht 274-280.
- and Ruppel-Schlichting K, 'Legal and judicial pluralism in Namibia and beyond: A modern approach to African legal architecture?' (2011) 64 Journal of Legal Pluralism and Unofficial Law 33-63.
- and Ruppel-Schlichting K, 'The hybridity of law in Namibia and the role of community law in the Southern African Development Community (SADC)' in Nafziger JAR (ed), *Comparative law and anthropology* (Edward Elgar Publishing 2017) 31-71.
- and Speranza I, 'The international, African and regional institutional, legal and policy framework of climate change' in AMCEN, *Addressing climate change challenges in Africa – A practical guide towards sustainable development* (United Nations Environment Programme 2011) 170-202.
- Sachs J et al., *Sustainable development report 2021* (Cambridge University Press 2021).
- Saage-Maaß M, 'Das Recht von Mensch und Natur: Der Kampf gegen die Klima- Apartheid' (2022) 2 Blätter für deutsche und internationale Politik 25-28.
- Saiger AJ, 'Domestic courts and the Paris Agreement's climate goals: The need for a comparative approach' (2020) 9(1) Transnational Environmental Law 37-54.
- SAIIA, 'The G20's Africa problem' (SAIIA, 3 December 2018) <<https://saiia.org.za/research/the-g20s-africa-problem/>> accessed 2 May 2020.
- Samuels A, 'Note on the use of public nuisance doctrine in 21st century South African law' (2015) De Jure 13.
- Schoeman P, 'South Africa's climate change legal regime' (2019) 19(9) Without Prejudice 11.
- Setzer J and Byrnes R, *Global trends in climate change litigation: 2019 snapshot* (Grantham Research Institute on Climate Change and the Environment and Centre for Climate Change Economics and Policy, London School of Economics and Political Science 2019).
- Singh P and de Carvalho G, 'Looking back, looking forward: South Africa in the UN Security Council' in *Africa Report* in Institute for Security Studies (ed), Africa Report (2020) 1.
- Smith S, 'Climate change and South Africa: A critical analysis of the National Climate Change Response White Paper and the push for tangible practices and media-driven initiatives' (2013) 7 Global Media Journal: Africa Addition 47.
- Sousa PM et al., 'The 'day zero' Cape Town drought and the poleward migration of moisture corridors' (2018) 13(12) Environmental Research Letters 1-11.
- South African Government, 'People – planet – prosperity: National framework for sustainable development in South Africa' (Department of Environmental Affairs and Tourism 2008) <https://www.environment.gov.za/sites/default/files/docs/2008nationalframeworkfor_sustainable_development.pdf> accessed 24 June 2020.
- Spier J, 'Injunctive relief: Opportunities and challenges' in Spier J and Magnus U (eds), *Climate change remedies: Injunctive relief and criminal law responses* (Eleven International Publishing 2014) 1-120.
- Stevens RA, 'The legal nature of the duty of care and skill: Contract or delict?' (2017) 20(1) PELJ 20.
- Stop Ecocide Foundation, Independent Expert Panel for the legal definition of Ecocide, 'Commentary and core text' (June 2021) <<https://bit.ly/35kV9oZf>>, accessed 28 December 2021.

- Sucker F, 'Approval of an international treaty in parliament: How does Section 231(2) "bind the Republic?"' (2014) 5 Constitutional Court Review 417-434.
- Thorpe A, 'Tort-based climate change litigation and the political question doctrine' (2008) 24(1) Journal of Land Use and Environmental Law 79-105.
- United Nations, 'The world faces 'climate apartheid' risk, 120 more million in poverty: UN expert' (United Nations Climate and Environment, 25 June 2019) <<https://news.un.org/en/story/2019/06/1041261>> accessed 22 June 2020.
- United Nations Department of Economic and Social Affairs, 'Leaving no one behind' (17 August 2018) <www.un.org/development/desa/en/news/sustainable/leaving-no-one-behind.html> accessed 20 May 2020.
- United Nations Development Programme, 'What does it mean to leave no one behind?' (9 August 2018) <www.undp.org/content/undp/en/home/librarypage/poverty-reduction/what-does-it-mean-to-leave-no-one-behind-.html> accessed 22 June 2020.
- Van den Bergh R, 'The remarkable survival of Roman-Dutch law in nineteenth-century South Africa' (2012) 18(1) Fundamina: A Journal of Legal History 71.
- Van der Schyff E, 'Unpacking the public trust doctrine: A journey into foreign territory' (2010) 13(5) PELJ 122-159.
- Van der Walt JC and Midgley JR, *Principles of delict* (4th edn, LexisNexis 2016).
- Viljoen SM and Makama SP, 'Structural relief – a context sensitive approach' (2018) 34(2) SAJHR 209.
- Vlavianos C and Robinson K, 'Wild Coast seismic operations interdicted' (*Green Times*, 28 December 2021) <<https://thegreentimes.co.za/wild-coast-seismic-operations-interdicted/>> accessed 29 December 2021.
- Wilensky M, *Climate change in the courts: An assessment of non-U.S. climate change litigation* (Sabin Center for Climate Change Law, Columbia Law School 2015) <https://web.law.columbia.edu/sites/default/files/microsites/climate-change/white_paper_-_climate_change_in_the_courts_-_assessment_of_non_u.s._climate_litigation_0.pdf> accessed 19 June 2020.
- Worden N, *The making of modern South Africa conquest, apartheid, democracy* (5th edn, John Wiley & Sons 2012).
- World Bank, 'Overcoming poverty and inequality in South Africa: An assessment of drivers, constraints and opportunities' (March 2018) <<https://bit.ly/3wK8McC>> accessed 28 March 2022.
- , 'Population, total – South Africa' <<https://bit.ly/3Djbb03>> accessed 28 March 2022.
- , 'The World Bank in South Africa' <www.worldbank.org/en/country/southafrica/overview> accessed 24 June 2020.
- Yates JS and Harris LM, 'Hybrid regulatory landscapes: The human right to water, variegated neoliberal water governance, and policy transfer in Cape Town, South Africa, and Accra, Ghana' (2018) 110 World Development 75.
- Yeld J, 'ConCourt dismisses Uthaka Energy's appeal bid against Mpumalanga coal mining interdict' (*Daily Maverick*, 17 November 2021) <www.dailymaverick.co.za/article/2021-11-17-concourt-dismisses-uthaka-energys-appeal-bid-against-mpumalanga-coal-mining-interdict/> accessed 23 December 2021.
- Zenker O, 'Mind the gaps: Renegotiating South African legal pluralism with the post-apartheid state' in Seidel K and Elliesie H (eds), *Normative spaces and legal dynamics in Africa* (Routledge 2020).
- Zimmermann R and Visser D (eds), *Southern cross: Civil law and common law in South Africa* (Juta & Co 1996).

Cases

South Africa

- Alexkor Ltd and Another v Richtersveld Community and Others* (CCT19/03) (2003) ZACC 18; 2004 (5) SA 460 (CC); 2003 (12) BCLR 1301 (CC) (14 October 2003).
- BP Southern Africa (Pty) Limited v MEC for Agriculture, Conservation, Environment and Land Affairs* (03/16337) (2004) ZAGPHC 18 (31 March 2004).
- Camps Bay Ratepayers and Residents Association and Another v Harrison and Another* (CCT 18/10) (2010) ZACC 19; 2011 (2) BCLR 121 (CC); 2011 (4) SA 42 (CC) (4 November 2010).
- Company Secretary of Arcelormittal South Africa and Another v Vaal Environmental Justice Alliance* (69/2014) (2014) ZASCA 184; 2015 (1) SA 515 (SCA); (2015) 1 All SA 261 (SCA) (26 November 2014).
- De Beer and Others v Minister of Cooperative Governance and Traditional Affairs* (21542/2020) (2020) ZAGPPHC 184; 2020 (11) BCLR 1349 (GP) (2 June 2020).
- Dikoko v Mokhatla* (CCT62/05) (2006) ZACC 10; 2006 (6) SA 235 (CC); 2007 (1) BCLR 1 (CC) (3 August 2006).
- Earthlife Africa Johannesburg v Minister of Environmental Affairs and Others* (65662/16) (2017) ZAGPPHC 58; (2017) 2 All SA 519 (GP) (8 March 2017).
- Everfresh Market Virginia (Pty) Ltd v Shoprite Checkers (Pty) Ltd* (CCT 105/10) (2011) ZACC 30; 2012 (1) SA 256 (CC); 2012 (3) BCLR 219 (CC) (17 November 2011).
- Fose v Minister of Safety and Security* (CCT14/96) (1997) ZACC 6; 1997 (7) BCLR 851; 1997 (3) SA 786 (5 June 1997).
- Fuel Retailers Association of Southern Africa v Director-General: Environmental Management, Department of Agriculture, Conservation and Environment, Mpumalanga Province and Others* (CCT67/06) (2007) ZACC 13; 2007 (10) BCLR 1059 (CC); 2007 (6) SA 4 (CC) (7 June 2007).
- Glenister v President of the Republic of South Africa and Others* CCT 48/10) (2011) ZACC 6; 2011 (3) SA 347 (CC); 2011 (7) BCLR 651 (CC) (17 March 2011).
- Government of the Republic of South Africa and Others v Grootboom and Others* (CCT11/00) (2000) ZACC 19; 2001 (1) SA 46; 2000 (11) BCLR 1169 (4 October 2000).
- Kruger v Coetzee* 1966 (2) SA 428 (A) 430E-F.
- Mazibuko and Others v City of Johannesburg and Others* (CCT 39/09) (2009) ZACC 28; 2010 (3) BCLR 239 (CC); 2010 (4) SA 1 (CC) (8 October 2009).
- Mining and Environmental Justice Community Network of South Africa and Others v Minister of Environmental Affairs and Others* (50779/2017) (2018) ZAGPPHC 807; (2019) 1 All SA 491 (GP) (8 November 2018).
- Minister of Health and Others v Treatment Action Campaign and Others* (CCT8/02) (2002) ZACC 15; 2002 (5) SA 721; 2002 (10) BCLR 1033 (5 July 2002) (4).
- Philippi Horticultural Area Food & Framing Campaign and Another v MEC for Local Government, Environmental Affairs and Development Planning: Western Cape and Others* (16779/17) (2020) ZAWCHC 8; 2020 (3) SA 486 (WCC) (17 February 2020).
- S v Makwanyane and Another* (CCT3/94) (1995) ZACC 3; 1995 (6) BCLR 665; 1995 (3) SA 391; (1996) 2 CHRLD 164; 1995 (2) SACR 1 (6 June 1995).
- Xstrata South Africa (Pty) Ltd and Others v SFF Association* (326/2011) (2012) ZASCA 20; 2012 (5) SA 60 (SCA) (23 March 2012).

Oliver C Ruppel

The Netherlands

Urgenda Foundation v State of the Netherlands, 19/00135 (Hoge Raad).

United States of America

Muller v Oregon, 208 US 412 (1908).

B. European Union, Germany and Austria

Climate change litigation in Germany and Austria – an overview*

Daniel Ennöckl and Judith Fitz

Abstract

The *Urgenda* case¹ in the Netherlands was the first successful climate change litigation case in the world. However, many other attempts in other countries to obtain such a favourable court ruling have foundered. In recent times, the number of successful climate change litigation cases has been continuously increasing. Plaintiffs in Ireland² (the *Friends of the Irish Environment* case³) and France⁴ won their cases. A short time ago, the German Federal Constitutional Court also handed down favourable rulings on several pending constitutional complaints. In all these cases, non-governmental organisations and/or private individuals were able to obtain a court order for the emission of greenhouse gases to be cut by a greater amount than had been planned by the national governments. Attempts were also made in Austria to force more ambitious climate action through the courts. However, these attempts have not been successful. The following essay explores which legal proceedings have been conducted in Germany and Austria, why most failed and which conclusions can be drawn for proceedings in other countries.

1 Germany

1.1 General and overview

Over the past few years, several lawsuits have been filed in Germany to enforce more stringent climate action through the courts. These lawsuits pursue different strategies, in particular regarding the question of whom they have been brought against. Climate action lawsuits can be filed against the state and its authorities or against private companies, to hold them accountable for their environmentally unfriendly behaviour.

* This article is based on the publication Daniel Ennöckl, 'Climate change litigation in Germany and Austria – recent developments' (2020) 4 CCLR 306.

1 Supreme Court of Netherlands 20 December 2019 No 19/00135 (*Stichting Urgenda v State of the Netherlands*).

2 Charlotte Renglet, 'Decision of the Irish Supreme Court in *Friends of the Irish Environment v Ireland*: A significant step towards government accountability for climate change?' (2020) 3 CCLR 163.

3 Irish Supreme Court 31 July 2020, Appeal No 205/19 (*Friends of the Irish Environment CLG v Government of Ireland*).

4 Conseil d'État, 19 November 2020, N° 427301, ECLI:FR:CECHR:2020:427301.20201119.

Within the first group, a distinction should be made, specifically: against which state power is the lawsuit being filed – The executive or the legislative?⁵

The first lawsuit discussed below (see Section 1.2) was based on a legal action brought by three families, all of whom were farmers, and an NGO. They applied to the Administrative Court of Berlin for an order which would force the German federal government to step up its efforts to achieve the climate action targets that Germany itself had set, as well as those of the EU.⁶ The lawsuit was based on the allegation that the state administration had failed to meet its statutory and European law commitments to mitigate climate change. This resulted in citizens' fundamental rights being infringed. The executive branch should therefore be forced to intensify its efforts to combat global warming.

Several constitutional complaints against the legislature have been filed with the German Federal Constitutional Court (*Bundesverfassungsgericht*, BVerfG) (see Section 1.3). On the one hand, these complaints argued that neither the German parliament's lower nor upper house (Bundestag, Bundesrat) had adopted sufficient measures to mitigate climate change. On the other hand, one of them also posited that a specific Act, namely the Climate Protection Act (*Klimaschutzgesetz*, KSG), passed at the end of 2019, was, respectively, inadequate.⁷

Another lawsuit – which was not brought against the state but a multinational stock market-listed energy conglomerate – has been filed with a German civil court. A Peruvian citizen who has been affected by the consequences of climate change is demanding that the defendant company pays a portion of the costs for protection measures implemented, which have become necessary due to global warming (see Section 1.4).

1.2 *Family farmers and Greenpeace Germany v Germany* – ruling of the Administrative Court of Berlin

In autumn 2018, 13 citizens and Greenpeace Germany filed suit against the German federal government at the Administrative Court of Berlin.⁸ The German federal government had adopted the 'Climate Action Programme' in December 2014. This programme set the goal of cutting greenhouse gas emissions in Germany by 40% by the end of 2020 (in relation to 1990 levels). Despite earlier assumptions, this 'Climate

5 Johannes Sauer, 'Strukturen gerichtlicher Kontrolle im Klimaschutzrecht – Eine rechtsvergleichende Analyse' (2018) ZUR 679, 683.

6 Andreas Buser, 'Eine allgemeine Klimaleistungsklage vor dem VG Berlin' (2020) 17 NVwZ 1253.

7 Thomas Groß, 'Die Ableitung von Klimaschutzmaßnahmen aus grundrechtlichen Schutzpflichten' (2020) 6 NvWZ 337.

8 The complaint is available at <<https://bit.ly/3ilpQHF>> accessed 28 March 2022.

Action Target 2020’ was achieved. However, this was due solely to the corona pandemic which was not foreseeable at the time of the court proceeding. Seen from the perspective at that time, Germany would have failed to meet its obligations under the effort sharing decision 406/2009/EC of the European Union.⁹ To meet the target, it would have had to buy emission permits from other EU member states.

The plaintiffs sought an order from the Regional Administrative Court of Berlin that the German government should implement the measures necessary to ensure that the ‘Climate Action Target 2020’ is met. They argued that they, as the owners of organic farms (or as the children of those owners), are particularly affected by climate change. The farmer families from Brandenburg, Schleswig-Holstein and the North Sea island Pellworm can already feel the impact of changes caused by global warming, i.e., the arrival of new pests or rising sea levels. Without adequate measures to mitigate climate change, they will be unable to keep their businesses operational over the long term. Therefore, the lack of action on the part of the German government had resulted in their fundamental rights under the German Basic Law (*Grundgesetz*, GG) being infringed, including under Article 2 para 2 (the right to life and physical integrity), Article 12 (occupational freedom) and Article 14 para 1 (right to property).¹⁰

Such an action to obtain performance is only admissible, under Section 42 of the German Code of Administrative Court Procedure (*Verwaltungsgerichtsordnung*, VwGO), if a plaintiff can prove that their subjective rights have been infringed by an administrative act or the omission of such an administrative act. The plaintiff in the individual case must therefore be able to show that the federal government, in failing to meet Germany’s Climate Action Target 2020, had acted unlawfully. They must also prove that their subjective rights have been infringed.

The Administrative Court of Berlin rejected the arguments brought forward on both of these points and, at the end of October 2019, dismissed the action as being unfounded.¹¹ Firstly, it held that the plaintiffs’ subjective rights had not been infringed by Germany’s failure to achieve the climate action targets set in 2014. In the view of the court, the ‘Climate Action Programme’ constitutes a mere political declaration of intent. It only sets out broad political guidelines. It did not lay down any legally binding rules which would grant the plaintiffs a legal claim to measures being taken to mitigate climate change.¹² The federal government also amended the Cli-

9 Decision 406/2009/EC of the European Parliament and of the Council of 23 April 2009 on the effort of Member States to reduce their greenhouse gas emissions to meet the Community’s greenhouse gas emission reduction commitments up to 2020, OJ L 140, 136-148.

10 Christian Roschman, ‘Climate change and human rights’ in Oliver C Ruppel, Christian Roschmann and Katharina Ruppel-Schlichting (eds), *Climate change: International law and global governance, Volume 1: Legal responses and global responsibility* (Nomos 2013) 203ff; Thomas Groß, ‘Verfassungsrechtliche Klimaschutzpflichten’ (2020) 6 NVwZ 360.

11 Verwaltungsgericht Berlin 31 October 2019, 10 K 412/18.

12 Buser (n 6) 1254.

mate Action Target 2020 in the autumn of 2019 by government resolution. It now states that the 40% reduction in greenhouse gas emissions should be achieved by the end of 2023.

Additionally, the Administrative Court of Berlin rejected the argument that the plaintiffs' fundamental rights had been infringed by the failure to meet climate action targets. It held that, even though greenhouse gases may have been emitted by Germany, they cannot be attributed to the German state; the German government, therefore, has no direct responsibility for these emissions. Consequently, the plaintiffs cannot derive any direct defence claims from their fundamental rights.

Still, the Administrative Court of Berlin acknowledged that the fundamental rights invoked did not just entail a right of defence against state authorities but also a duty to protect on the part of the state. It follows that public authorities have a duty to protect citizens' fundamental rights, including against infringements by private parties.¹³ However, the court also held that the state has broad discretion when discharging its duties to protect. According to the German case law, the duty to protect fundamental rights is only infringed if the measures taken were 'wholly inappropriate and completely inadequate'.¹⁴ The Administrative Court of Berlin held that this was not the case in relation to the climate action measures taken in Germany. If, by the end of 2020, a reduction of 32% has been achieved instead of 40% and the 'Climate Action Target 2020' would only be met three years later, this does not suffice for the assumption that the measures previously taken were completely inappropriate and inadequate. The goal of cutting greenhouse gases by 40% does not represent the minimum level of climate action required under constitutional law.

The Administrative Court of Berlin left the question of whether the plaintiffs were directly concerned (required to bring an action before the German administrative courts) open.¹⁵ The court stated that everyone is affected by climate change in one way or another, which weakened the argument in favour of direct concern. However, it was possible for the plaintiffs to be directly concerned if their organic farming businesses were particularly exposed to the effects of climate change.

The Administrative Court of Berlin held that Greenpeace itself did not have *locus standi* (in contrast to the other plaintiffs). The German Environmental Legal Remedies Act (*Umwelt-Rechtsbehelfegesetz*, UmwRG) does not confer any right on environmental organisations to file climate action lawsuits. Furthermore, the court held that it was not possible to invoke Article 9 para 3 of the Aarhus Convention (access to justice) because the Climate Action Target 2020 was not based on provisions of European law. In view of the clear requirements set by the EU to cut greenhouse

13 Stephan Meyer, 'Grundrechte in Sachen Klimawandel?' (2020) 13 NJW 894, 898.

14 Bundesverfassungsgericht 29 October 1987, 2 BvR 624/83; BVerfGE 77, 170-240.

15 Meyer (n 13) 899.

gases – including under the EU Effort Sharing Regulation¹⁶ – this statement comes as a surprise.

In its own judgment, the Regional Administrative Court of Berlin allowed an appeal to the Higher Regional Court. The question of whether individual citizens have *locus standi* due to the infringement of basic rights in relation to climate action is a legal question of fundamental significance. Therefore, the option to appeal the decision to the higher courts must be kept open.

Despite this ruling, the plaintiff chose not to lodge an appeal against the decision. This was because the legal framework in Germany was changed soon after the Administrative Court of Berlin handed down its decision. The German Bundestag enacted the Federal Climate Change Act (*Bundes-Klimaschutzgesetz*, KSG) in December 2019. In view of the fact that this law had only just entered into force, it would have been almost impossible to prove that the federal government had failed to discharge its legal duties. Therefore, instead of appealing the decision, Greenpeace Germany chose to call on the Federal Constitutional Court in Karlsruhe (see Section 1.3 below).

1.3 Several constitutional complaints against the German legislature – ruling by the Federal Constitutional Court

In 2018, eleven individuals, the *Bund für Umwelt und Naturschutz Deutschland* and the *Solarenergie-Förderverein Deutschland* filed a constitutional complaint.¹⁷ This climate action lawsuit alleged that Germany had failed to implement the necessary measures to fulfil its commitments under international agreements on combating climate change. The objective of the complaint was to obtain the ruling that neither the lower and upper house of the German parliament (the Bundestag and the Bundesrat) had taken sufficient measures to achieve the targets set by the Kyoto Protocol and the Paris Agreement. In addition, the ruling was sought that both the parliament and the federal government have a duty to implement the measures necessary to achieve zero emissions in time to limit global warming to 1.5°C.¹⁸

Further constitutional complaints were submitted in January and February 2020. The complainants include nine people aged between 15 and 32 years – some of whom were already plaintiffs in cases brought before the Regional Administrative

16 Regulation (EU) 2018/842 of the European Parliament and of the Council of 30 May 2018 on binding annual greenhouse gas emission reductions by Member States from 2021 to 2030 contributing to climate action to meet commitments under the Paris Agreement and amending Regulation (EU) No 525/2013, OJ L 156, 26-42.

17 Bundesverfassungsgericht 24 March 2021, 1 BvR 2656/18, 1 BvR 78/20, 1 BvR 96/20, 1 BvR 288/20 (Case Göppel et al. 1 BvR 2656/18).

18 The complaint is available at <<https://bit.ly/3wG8Z0b>> accessed 28 March 2022.

Court of Berlin. They were supported by the NGOs Greenpeace and Germanwatch.¹⁹ On the other hand, the environmental organisation Deutsche Umwelthilfe filed constitutional complaints on behalf of ten children and youths living in Germany,²⁰ and 15 children and youths living in Bangladesh,²¹ and Nepal.²²

These constitutional complaints no longer simply took aim at the lack of action on the part of the legislature. The ruling sought was that, by setting a target of reducing emissions by only 55% by 2030, in relation to 1990 levels, the legislature had infringed the complainants' fundamental rights. The federal legislator should also be placed under an obligation to enact appropriate climate action targets within a period to be defined or to ensure – by restating the reduction target – that the volume of greenhouse gases emitted by Germany is kept as low as possible.

Even if the constitutional complaints differed in terms of the form of order sought from the court, the arguments brought forward were, in essence, the same: All complainants allege that their fundamental rights have been infringed, namely, the right to life and physical integrity (Article 2 para 2 German Basic Law), the right to property (Article 14 para 1 German Basic Law) and their rights to liberty in general. As a corollary to the fundamental rights conferred, the state has a duty to prevent those rights from being infringed by private parties. The German legislator failed to do just that by not implementing sufficient measures to mitigate climate change.

Contrary to the expectation articulated in the relevant literature,²³ the Federal Constitutional Court partially granted the rulings sought in the complaints in an astonishing judgment and declared the German Climate Protection Act to be partially unconstitutional.²⁴ It was not only the substantive arguments of the top court which were a surprise. Even at the stage of the admissibility check, it demonstrated an approach to fundamental rights that was largely new and which will probably lead to far-reaching consequences for the doctrine of fundamental rights.²⁵

To be able to lodge an admissible constitutional complaint, complainants must demonstrate that they are presently, personally, and directly concerned. The direct-

19 The complaint is available at <<https://bit.ly/3qJZrO9>> accessed 28 March 2022.

20 Bundesverfassungsgericht 24 March 2021, 1 BvR 2656/18, 1 BvR 78/20, 1 BvR 96/20, 1 BvR 288/20 (Case *Steinmetz et al.* 1 BvR 96/20).

21 Bundesverfassungsgericht 24 March 2021, 1 BvR 2656/18, 1 BvR 78/20, 1 BvR 96/20, 1 BvR 288/20 (Case *Yi Yi Prue et al.* 1 BvR 78/29).

22 Deutsche Umwelthilfe, 'Verfassungsbeschwerde gegen das Bundes-Klimaschutzgesetz' <www.duh.de/klimaklage/> accessed 16 November 2021.

23 Kurt Faßbender, 'Der Klima-Beschluss des BVerfG – Inhalte, Folgen und offene Fragen' (2021) 29 NJW 2085, 2085.

24 Bundesverfassungsgericht 24 March 2021, 1 BvR 2656/18, 1 BvR 78/20, 1 BvR 96/20, 1 BvR 288/20 (Case *Göppel et al.* 1 BvR 2656/18).

25 Marc Ruttloff and Lisa Freihoff, 'Intertemporale Freiheitssicherung oder doch besser "inter-temporale Sachgerechtigkeit"? – auf Konturensuche' (2021) NVwZ 917, 917; Sabine Schlaack, 'Klimaschutzrecht – Ein Grundrecht auf intertemporale Freiheitssicherung' (2021) 13 NVwZ 912, 916.

ness of the concern was recognised by the Federal Constitutional Court without further ado. The same went for the requirement of personal concern. Against the backdrop of the extremely restrictive case law of the European Court of Justice and the Austrian Constitutional Court on the question of which persons may contest a legal norm,²⁶ this is remarkable but not really new. With regard to the interpretation of the present concern, it is a different story. Here, the top court recognised that the risk of restrictions on liberty in the future could mean that peoples' fundamental rights are being affected in the present. The current legal framework creates facts on the ground that will directly affect the legal position of the complainants.²⁷ This intertemporal dimension of fundamental rights is a novelty in the doctrine of fundamental rights.

The substantive examination of the complaints by the Federal Constitutional Court was no less innovative. First, it addressed the question of whether there had been an infringement of the obligations to protect, which flow from the right to life and physical integrity and right to property, and concluded that there had not. The court justified its decision by stating that, with regard to obligations to protect, the legislator is accorded significant discretion, which had not been exceeded in the present case by the measures taken in the Climate Protection Act.²⁸ In a further step, the Federal Constitutional Court examined the alleged infringement of rights to liberty in general. Here, the court once again entered new theoretical territory by holding, under the heading 'protecting liberty on an intertemporal basis', that the provisions of the Climate Protection Act under examination had an 'advance effect similar to infringement' on the complainants' liberties as guaranteed by the fundamental rights.²⁹ This advance effect requires a constitutional law justification.

In the subsequent steps of the examination, the court reviewed the provisions of the Climate Protection Act against the standards of the Basic Law, specifically Article 20a, the provision regarding the state objective of protecting the environment. The court did not merely derive an obligation on the part of the state to mitigate climate change: it prescribed a mandate for climate neutrality.³⁰ Article 20a is not infringed by the Climate Protection Act because the Act itself has the aim of achieving climate neutrality. However, the provisions of the Act run counter to the Basic Law to the extent that they permit very high greenhouse gas emissions until the year 2030 but do not contain any sufficiently specific rules about what should happen afterwards. This results in a disproportionate shift in the obligation to reduce emis-

26 E.g., Case C-565/19P *Armando Carvalho et al. v Parliament and Council* (2020) ECLI:EU:C:2021:252; Verfassungsgerichtshof 30 September 2020, G 144-145/2020, V 332/2020.

27 Bundesverfassungsgericht 24 March 2021, 1 BvR 2656/18, 1 BvR 78/20, 1 BvR 96/20, 1 BvR 288/20 para 130.

28 *Ibid* para 153.

29 *Ibid* para 184.

30 *Ibid* para 198.

sions to the years after 2030 and, therefore, also a risk of massive restrictions on liberties. To be able to achieve climate change mitigation targets later, fundamental restrictions would have to be imposed on almost all areas of life after 2030. In conclusion, the provisions of the Climate Protection Act forming the subject matter of the court's examination breach the legislator's obligation (derived from the principle of proportionality) to spread the necessary reductions across a period of time in a way that protects fundamental rights and achieves intergenerational fairness. For that reason, they should be considered unconstitutional.³¹

Formally, the Federal Constitutional Court's judgment only gave rise to an obligation to further specify the reduction objectives for the period after 2030. However, the arguments advanced by the court made changing only these parts of the Act (and thus achieving a result that would be in line with constitutional law) appear very difficult. The German legislator responded to the ruling swiftly and comprehensively and increased the reduction target for 2030 to 65%. Climate neutrality should be achieved by 2045.³²

1.4 *Peruvian farmers v RWE* – a civil lawsuit before the Regional Court of Essen/Higher Regional Court of Hamm

In the cases so far discussed in this essay, it was the state having action brought against it. Now, in a climate action lawsuit currently pending before the Higher Regional Court of Hamm, the action has been brought against a private company. The Peruvian farmer Saúl Luciano Lliuya is pursuing legal action against the German energy conglomerate RWE. Lliuya owns a house in the city of Huaraz at the foot of the Peruvian Andes. His property is acutely at risk of being flooded due to rising water levels in the lake lying high above, in the mountains. The reason for this increase in water levels is that the surrounding glaciers are melting, which is, ultimately, an effect of climate change. The defendant company, RWE, is one of the largest CO₂ emitters in Europe and is responsible for 0.47% of global historical CO₂ emissions. 21.59% of all greenhouse gas emissions in Germany in 2015 could be attributed to RWE.

The plaintiff sought an order from the Regional Court of Essen according to Section 1004 of the German Civil Code (*Bürgerliches Gesetzbuch*, BGB) that RWE should contribute such a proportion of financing for protection measures (a new drainage system, additional dams for the lake) as corresponds to the company's share

31 Ibid para 243.

32 Erstes Gesetz zur Änderung des Bundes-Klimaschutzgesetzes (First Law Amending the Federal Climate Protection Act) BGBl I 59/3905.

in global greenhouse gas emissions.³³ According to the arguments put forward in the pleading, this would amount to € 17,000. The competence of the Regional Court was established by RWE's headquarters being located in Essen.

Initially, the action was dismissed by the Regional Court of Essen in December 2016.³⁴ The Higher Regional Court of Hamm, as the appeal court, held in November 2017 that the action was, in principle, admissible, and opened proceedings to adduce evidence.³⁵ Experts now have to clarify whether RWE, one of the world's biggest emitters of CO₂, bears a share of the responsibility for the risk of flooding in Peru and, if so, how great this responsibility is. However, the process of collecting evidence has been delayed due to the COVID-19 pandemic.

The decision of the Higher Regional Court of Hamm is of great significance. It looks like, for the first time, a European court has held that private companies may be held liable for climate change-related risks and damage according to their share in global greenhouse gas emissions. In spite of this, it is highly doubtful whether the case will yield a successful outcome for the plaintiff. The liability risks for companies that produce a large volume of greenhouse gases are considered, *de lege lata*, to be low. Substantive liability law, in particular, presents problems.³⁶

Civil laws in the continental European tradition set out three central requirements for liability: damage, proof of causality and unlawful or negligent conduct.³⁷ The requirement for damage to have occurred does not present any difficulties. It is sufficient for the plaintiff to assert a risk or impairment to life, health or property. Mere ecological damage, such as the extinction of species, the drying up of bodies of water or the melting of glaciers, only provides grounds for awarding compensation if they entail damage to property rights.³⁸

The causality of conduct is usually assessed by applying the *conditio sine qua non*-test.³⁹ According to this, each act is causal if – without it – the damage would not have occurred. The plaintiff bears the onus of proof for causality.⁴⁰ For the Peru-

33 Complaint available at <www.germanwatch.org/sites/germanwatch.org/files/static/19019.pdf> accessed 16 November 2021.

34 Landgericht Essen 15 December 2016, 2 O 285/15.

35 Oberlandesgericht Hamm 30 November 2017, I-5 U 15/17.

36 Alexandros Chatzinerantzis and Benjamin Herz, 'Climate change litigation – Der Klimawandel im Spiegel des Haftungsrechts' (2010) 11 NJW 910.

37 Bernhard Burtscher and Martin Spitzer, 'Liability for climate change: Cases, challenges and concepts' (2017) 2 JETL 137, 156.

38 Monika Hinteregger, 'Klimaschutz mit den Mitteln des Privatrechts?' in Gottfried Kirchengast, Eva Schulev-Steindl and Gerhard Schnedl (eds), *Klimaschutzrecht zwischen Wunsch und Wirklichkeit* (Studien zu Politik und Verwaltung 113, Böhlau 2018) 197, 209.

39 Helmut Koziol, 'Comparative conclusions' in Helmut Koziol (ed), *Basic questions of tort law from a comparative perspective* (Jan Sramek 2015) recital 8/204.

40 Erik Pöttker, *Klimahaftungsrecht. Die Haftung für die Emission von Treibhausgasen in Deutschland und in den Vereinigten Staaten von Amerika* (Studien zum ausländischen und internationalen Privatrecht 307, Mohr Siebeck 2014) 149ff.

vian farmer, this means that he has to prove that risks to his property would not have arisen (or would not have arisen to that extent) but for the activities of RWE. Due to the sheer number of emitters of greenhouse gases and how they are spread across the globe, it is, of course, tremendously difficult to prove such causality.⁴¹ The relevant literature pleads instead for attribution of responsibility according to the extent to which risk was increased. According to this approach, every company's liability for the detrimental effects of climate change (worldwide) would be in line with the volume of greenhouse gases it emits. Whether the courts adopt this approach or the legislator would have to implement 'liability according to proportionality' remains to be seen.

Finally, it is questionable to what extent companies that produce greenhouse gases are acting unlawfully or negligently. In general, as is argued in the action against RWE, an impairment to property or health is generally an indication of unlawfulness. But can you accuse a company that has an official permit for a plant and participates in the Emissions Trading Scheme of negligent conduct?⁴² For claims which are brought in Germany, invoking the German Environmental Liability Act (*Umwelthaftungsgesetz*, UmweltHG) could provide a solution. The Environmental Liability Act provides for strict liability for personal injury and property damage caused by environmental impacts via the air. Whether individual liability for climate damage can be derived from this is subject to debate.⁴³

The Higher Regional Court of Hamm will have to provide answers for all these questions in its judgment. Therefore, the outcome of the legal dispute will be of fundamental significance for climate action under civil law in continental Europe.

2 Austria

2.1 General overview

Environmental organisations and citizens have also been taking the initiative in Austria in the past few years, bringing two climate action lawsuits before the Austrian Constitutional Court (VfGH). However, Austrian constitutional law contains procedural hurdles to bringing actions before the Constitutional Court.⁴⁴ On the one hand – in contrast to Germany – inaction on the part of the legislator cannot form the subject matter of an action. If the parliament does not take any climate change mitigation

41 Giedre Kaminskaitė-Salters, *Constructing a private climate change lawsuit under English law* (Kluwer Law & Business 2010) 159ff; Pöttker (n 40) 49.

42 Burtscher and Spitzer (n 37) 164.

43 Chatzinerantzis and Herz (n 36) 596.

44 Judith Fitz, 'Klimaklagen vor Gericht. Klimaklagen als ultima ratio im Klimaschutz?' (2019) 1 *juridikum* 105, 111.

action, there can be no effective legal protection. Moreover, citizens are only able to challenge laws and regulations if they are directly concerned by those specific rules. According to the case law of the Constitutional Court, this is the case if the relevant rule is addressed directly to the affected person. They have to be the addressee of the norm, or the rule must infringe the citizen's legal sphere as protected by their fundamental rights.⁴⁵

Due to these requirements, it is not possible to challenge the Austrian Climate Protection Act (*Klimaschutzgesetz*, KSG) before the Austrian Constitutional Court. This law does not impose any obligation on the state to implement specific climate change mitigation measures. The law merely sets out how and according to what process the EU's climate action targets are shared out across the various greenhouse gas-producing sectors in Austria. The law does not confer any legal claim on individual persons to certain actions being taken by the authorities with regard to climate change mitigation.

Therefore, members of civil society decided to contest two rules with immense symbolic value for the political debate on climate action at the Austrian Constitutional Court. However, neither of these two actions led to a positive outcome for them. In the first case, politicians took action before the court was able to produce a decision (see Section 2.2 below). In the second case, the action failed on procedural requirements (see Section 2.3 below). The third climate change litigation case took a different route by addressing the administration directly, requesting the competent federal ministry to enact a regulation containing climate change mitigation measures (see Section 2.4 below).

2.2 Application to the Constitutional Court to disapply the 140 km/h speed limit on motorways

First, an action was brought in December 2019 requesting the Constitutional Court to annul two regulations of the transport minister from 2018. The regulation increased the speed limit on two Austrian motorways along a 20km and a 40km stretch to 140 km/h (up from the limit of 130 km/h, which applies elsewhere in Austria). In substantive terms, the action brought before the Constitutional Court argued that the state has a duty to implement appropriate protection measures to shield the right to life under Article 2 of the European Convention on Human Rights (ECHR) from the effects of global warming. The increase in the speed limit on motorways breached

45 Walter Berka, *Verfassungsrecht* (7th edn, Verlag Österreich 2018) 374; Theo Öhlinger and Harald Eberhard, *Verfassungsrecht* (12th edn, facultas 2019) 493.

this obligation because it would result in too large a rise in greenhouse gas emissions, which in turn would make global warming worse.⁴⁶

The Constitutional Court was not able to make a decision on the matter. This was due to changes in political circumstances in Austria. Even before the court could commence its deliberations on the matter, both regulations were annulled by the new transport minister. The case was therefore discontinued by the Constitutional Court without having handed down a judgment on the matter.⁴⁷

2.3 Application to the Constitutional Court to annul tax privileges for the aviation industry

A second action was brought before the Constitutional Court in January 2020.⁴⁸ More than 8,000 people demanded that the Constitutional Court declare the tax privileges afforded to the aviation industry but not the rail sector unconstitutional. While domestic flights are exempted from kerosine tax and no VAT accrues on international flights, rail transport does not enjoy any such exemptions – even though it is 31 times more environmentally friendly than taking a flight for the same journey. The applicants argued that this resulted in them having to pay higher net ticket prices for a rail journey. This encourages behaviour that is detrimental to the environment. The associated climate change infringes the applicants' rights under Article 2 and Article 8 ECHR because these rights entail a duty on the part of the state to protect citizens.

With regard to the requirement that the 8,000+ complainants have to be 'directly concerned', it was conceded that they are not the addressees of the contested tax exemptions – these were addressed solely to the respective company. However, because the relevant consumption taxes were charged to consumers, it had a knock-on effect on the users of the more environmentally friendly rail travel alternatives. Therefore, the complainants, who said that they chose to travel by rail for environmental reasons, were directly concerned by the rules at issue.

The Constitutional Court did not follow this argument and dismissed the action.⁴⁹ In the court's view, the complainants' rights were not directly infringed by the lack of tax exemptions for rail travel tickets. The taxation obligation with regard to VAT and mineral oil tax was addressed solely to the transport companies. If and to what

46 Greenpeace, 'Greenpeace präsentiert erste Klimaklage Österreichs' (APA OTS, 29 August 2019) <www.ots.at/presseaussendung/OTS_20190829_OTS0082/greenpeace-praesentiert-erste-klimaklage-oesterreichs> accessed 16 November 2021.

47 Verfassungsgerichtshof 8 June 2020, V1/2020.

48 The complaint is available at <www.klimaklage.at/wp-content/uploads/2020/09/Klimaklage-Individualantrag-Feb2020.pdf> accessed 16 November 2021.

49 Verfassungsgerichtshof 30 September 2020, G 144-145/2020, V 332/2020.

extent these taxes are actually accrued on the market to the consumers and therefore the complainants, depends on many factors. Because the complainants had said that they only travelled by train, they are not affected by the tax law rules applicable to air travel. The Constitutional Court did not have to address the question of whether the tax privileges enjoyed by the aviation industry were justified and constitutional in the matter at hand.

The Constitutional Court's decision means that no climate change lawsuits are expected to be brought against the Republic of Austria using this method in the near future. Due to procedural hurdles, the prospects of success in such lawsuits are too low.

2.4 Request to enact a regulation according to Section 69 Crafts, Trade and Industry Code

In May 2021, a further climate action lawsuit was brought – this time against a government. The request was addressed to the Federal Minister for Digital and Economic Affairs and aimed to secure the enactment of a regulation based on the Austrian Crafts, Trade and Industry Code (*Gewerbeordnung*, GewO). The applicants were three private individuals, a municipality and an environmental organisation. Section 69 Crafts, Trade and Industry Code prescribes a power to enact regulations that may impose various obligations on traders to avoid risks to the life or health of humans or to avoid detriment to the environment. The possible measures could relate to the establishment of places of business, to the goods manufactured or sold, or to the services rendered.

The applicants requested a ban on the sale of solid combustibles, heating oil and fuels with a fossil origin. The point when the bans enter into force should vary: the first solid combustibles should be banned as of 1 January 2025. As justification, it is argued that these products accelerate the climate crisis and could already be replaced by alternatives.

Austrian law does not provide for any subjective right to the enactment of a regulation. Therefore, the applicants primarily base their claims on the law of the European Union. They draw parallels to the air pollution law where the Austrian Supreme Administrative Court recognised such a subjective right. The Effort Sharing Regulation, which sets out the quantified obligation of member states to reduce emissions outside of emissions trade, was also relied on. The applicants state that the objective of the regulation is to protect European citizens from the risks and consequences of the climate crisis. The obligation to provide such protection, in turn, establishes a subjective right. This results from the long-established case law of the European Court of Justice on the *effet utile*, which demands effective legal protection from the courts to enforce EU law claims.

In addition, the applicants also state Articles 2 and 8 ECHR as legal bases for their rights. Referring to the decisions of other top courts, including those of the German Federal Constitutional Court or the Dutch Supreme Court in the *Urgenda* case, they argue that the provisions of the ECHR (which rank equally with the constitution) confer on them a subjective right to the enactment of a regulation. Moreover, according to the applicants, such subjective rights result from the EU's Charter of Fundamental Rights.

The application was dismissed with the argument that, based on the competence for 'industry and trade', the Federation does not have any general competence for measures that aim to avoid greenhouse gas emissions in the interests of mitigating climate change. The applicants have filed a complaint against this decision with the Administrative Court in Vienna. No judgment has been handed down in this matter yet, but the prospects of success are generally seen to be slim.

In the legal sphere, the fight against climate change in Austria will have to focus instead on the procedure for approving projects which are detrimental to the environment, such as motorways or airport expansions. However, this does not look very promising. The attempt to stop the expansion of Vienna International Airport for reasons of climate change mitigation failed in 2017 – before the Constitutional Court.⁵⁰

3 Conclusion

The decisions and lawsuits discussed in this essay show that the question of whether climate change lawsuits can succeed or not almost never depends on the efforts made by the defendant state to mitigate climate change. Climate action lawsuits do not fail because the measures already taken by the respective governments and parliaments to cut greenhouse gas emissions were ambitious enough. They only result in success in some states because countries such as the Netherlands have generous rules about the admissibility of lawsuits brought by associations to enforce matters relating to the common good.⁵¹ On the other hand, the progressive interpretation of the law by the Federal Constitutional Court in Germany enabled a climate change litigation case to succeed. The top court showed that it is also the job of the judiciary to counter the process by which fundamental rights are undermined by the inaction of the legislator. In Austria, climate change lawsuits (or at least those which are brought against the

50 Franz Merli, 'Ein seltsamer Fall von Willkür: Die VfGH-Entscheidung zur dritten Piste des Flughafens Wien' (2017) 12 WBL 682; Gottfried Kirchengast et al., 'Flughafen Wien: VfGH hebt Untersagung der dritten Piste durch das BVwG wegen Willkür' (2017) 6 RdU 252.

51 Sauer (n 5) 680.

legislator) have failed for the foreseeable future due to the latest decision of the Constitutional Court.

If a state's legal order requires direct or individual concern to be shown in order to challenge a law, this represents a hurdle to climate change lawsuits which is almost insurmountable.⁵² In this respect, the decision of the Austrian Constitutional Court is similar to the European General Court's (EGC) decision in the *People's Climate Case*.⁵³ The EGC stated that the reasons for dismissing the case mainly were that, although the plaintiffs were affected by climate change in one way or another, they were not individually concerned in the legal sense. Climate change does not only affect the plaintiff families but potentially all humans. The key point was not the intensity of the effects but their exclusivity and unique nature. Because the plaintiffs were not the only ones to be affected by climate change, they did not have *locus standi*.

However, in view of the threat posed by climate change, clinging onto such a stringent interpretation of the term 'individual concern' hardly seems compatible with the principle of effective legal protection.⁵⁴ The plaintiffs in the *People's Climate Case* correctly stated this in their appeal to the ECJ: 'It cannot be the case that – if everybody is affected, then no one is affected and because everybody has contributed to the problem, no one is responsible.'⁵⁵

From a substantive point of view, climate action lawsuits may still be successful even without a departure from the previous case law. All scientific findings prove that the efforts made by states until now have been far from sufficient to achieve the 1.5°C target set out in the Paris Agreement. The measures are completely insufficient within the meaning of the case law of the German Federal Constitutional Court to protect the life and health of humans over the long term. If one considers the effects of greater global warming on the future of humanity,⁵⁶ then it is clear that fundamental rights are being infringed and that this must be addressed by the courts – even if states are granted broad discretion in fulfilling their duties of protection.

Recently, fundamental concerns have been expressed about climate action lawsuits. The 'idea that you can save the world with court orders' overestimates the power of the judiciary and shifts the responsibility within democratic systems with a

52 Groß (n 7) 340; Fitz (n 44) 111.

53 Case T-330/18 *Carvalho et al. v Parliament and Council* (2019) ECLI:EU:T:2019:324.

54 Lennart Wegener, 'Der Wert von Klimaklagen jenseits ihrer Symbolik – Umweltrecht am Freitag' (JuWissBlog 114/2019, 6 December 2019) <www.juwiss.de/114-2019/> accessed 16 November 2021.

55 The complaint is available at <www.peoplesclimatecase.caneurope.org/wp-content/uploads/2018/08/application-delivered-to-european-general-court.pdf> accessed 16 November 2021.

56 IPCC, *Global warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty* (Cambridge University Press 2018).

separation of powers, as the accusation goes.⁵⁷ However, when you consider it rationally, the argument comes to nothing. It is the job of the judiciary to monitor the legislative and executive branches and impose limits on them if they have infringed fundamental rights. The courts should also do this in relation to climate change. It is about admitting that there are serious deficits in climate change action and that both the legislative as well as the executive branch have a duty to react. How they address and implement these more stringent obligations to cut greenhouse gases remains the job of the democratically legitimate legislature and administration.⁵⁸ At the end of the day, climate action lawsuits are nothing other than the legitimate enforcement of rights expressly conferred as well as an act of participation in the public debate about climate change.⁵⁹

Bibliography

- Berka W, *Verfassungsrecht* (7th edn, Verlag Österreich 2018).
- Bodansky D, Brunée J and Rajamani L, *International climate change law* (Oxford University Press 2017).
- Burtscher B and Spitzer M, 'Liability for climate change: Cases, challenges and concepts' (2017) 2 JETL 137.
- Buser A, 'Eine allgemeine Klimaleistungsklage vor dem VG Berlin' (2020) 17 NVwZ 1253.
- Chatzinerantzis A and Herz B, 'Climate change litigation – Der Klimawandel im Spiegel des Haftungsrechts' (2010) 11 NJW 910.
- Decision 406/2009/EC of the European Parliament and of the Council of 23 April 2009 on the effort of Member States to reduce their greenhouse gas emissions to meet the Community's greenhouse gas emission reduction commitments up to 2020, OJ L 140.
- Deutsche Umwelthilfe, 'Verfassungsbeschwerde gegen das Bundes-Klimaschutzgesetz' <www.duh.de/klimaklage/> accessed 16 November 2021.
- Ennöckl D, 'Climate change litigation in Germany and Austria – recent developments' (2020) 4 CCLR 306.
- Faßbender K, 'Der Klima-Beschluss des BVerfG – Inhalte, Folgen und offene Fragen' (2021) 29 NJW 2085.
- Fitz J, 'Klimakrise vor Gericht. Klimaklagen als *ultima ratio* im Klimaschutz?' (2019) 1 Juridikum 105.
- Graser A, 'Vermeintliche Fesseln der Demokratie: Warum Klimaklagen ein vielversprechender Weg sind' (2019) 5 ZUR 271.

57 Bernhard Wegener, 'Urgenda – Weltrettung per Gerichtsbeschluss?' (2019) ZUR 3.

58 Thomas Groß, 'Verfassungsrechtliche Klimaschutzverpflichtungen' (2017) 17(3) EurUP 353, 362; Meyer (n 13) 900.

59 Daniel Bodansky, Jutta Brunée and Lavanya Rajamani, *International climate change law* (Oxford University Press 2017) 285; Alexander Graser, 'Vermeintliche Fesseln der Demokratie: Warum Klimaklagen ein vielversprechender Weg sind' (2019) 5 ZUR 271, 278.

- Greenpeace, 'Greenpeace präsentiert erste Klimaklage Österreichs' (APA OTS, 29 August 2019) <www.ots.at/presseaussendung/OTS_20190829_OTS0082/greenpeace-praesentierete-erste-klimaklage-oesterreichs> accessed 16 November 2021.
- Groß T, 'Die Ableitung von Klimaschutzmaßnahmen aus grundrechtlichen Schutzpflichten' (2020) 6 NvWZ 337.
- , 'Verfassungsrechtliche Klimaschutzpflichten' (2020) 6 NVwZ 360.
- Hinteregger M, 'Klimaschutz mit den Mitteln des Privatrechts?' in Kirchengast G, Schulev-Steindl E and Schnedl G (eds), *Klimaschutzrecht zwischen Wunsch und Wirklichkeit* (Studien zu Politik und Verwaltung 113, Böhlau 2018) 197.
- IPCC, *Global warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty* (Cambridge University Press 2018).
- Kaminskaité-Salters G, *Constructing a private climate change lawsuit under English law* (Kluwer Law & Business 2010).
- Kirchengast G et al., 'Flughafen Wien: VfGH behebt Untersagung der dritten Piste durch das BVwG wegen Willkür' (2017) 6 RdU 252.
- Koziol H, 'Comparative conclusions' in Koziol H (ed), *Basic questions of tort law from a comparative perspective* (Jan Sramek 2015).
- Merli F, 'Ein seltsamer Fall von Willkür: Die VfGH-Entscheidung zur dritten Piste des Flughafens Wien' (2017) 12 WBL 682.
- Meyer S, 'Grundrechte in Sachen Klimawandel?' (2020) 13 NJW 894.
- Öhlinger T and Eberhard H, *Verfassungsrecht* (12th edn, facultas 2019).
- Pöttker E, *Klimahaftungsrecht. Die Haftung für die Emission von Treibhausgasen in Deutschland und in den Vereinigten Staaten von Amerika* (Studien zum ausländischen und internationalen Privatrecht 307, Mohr Siebeck 2014).
- Renglet C, 'Decision of the Irish Supreme Court in *Friends of the Irish Environment v Ireland*: A significant step towards government accountability for climate change?' (2020) 3 CCLR 163.
- Roschmann C, 'Climate change and human rights' in Ruppel OC, Roschmann C and Ruppel-Schlichting K (eds), *Climate change: International law and global governance. Volume 1: Legal responses and global responsibility* (Nomos 2013) 203.
- Ruttloff M and Freihoff L, 'Intertemporale Freiheitssicherung oder doch besser "intertemporale Sachgerechtigkeit"? – auf Konturensuche' (2021) NVwZ 917.
- Sauer J, 'Strukturen gerichtlicher Kontrolle im Klimaschutzrecht – Eine rechtsvergleichende Analyse' (2018) ZUR 679.
- Schlacke S, 'Klimaschutzrecht – Ein Grundrecht auf intertemporale Freiheitssicherung' (2021) 13 NVwZ 912.
- Wegener B, 'Urgenda – Weltrettung per Gerichtsbeschluss?' (2019) ZUR 3.
- Wegener L, 'Der Wert von Klimaklagen jenseits ihrer Symbolik – Umweltrecht am Freitag' (Ju-WissBlog 114/2019, 6 December 2019) <www.juwiss.de/114-2019/> accessed 16 November 2021.

Cases

Austria

Verfassungsgerichtshof 8 June 2020, V1/2020.

Greenpeace et al. v Austria, Verfassungsgerichtshof 30 September 2020, G 144-145/2020, V 332/2020. The complaint is available at <www.klimaklage.at/wp-content/uploads/2020/09/Klimaklage-Individualantrag-Feb2020.pdf> accessed 16 November 2021.

France

Conseil d'État, 19 November 2020, N° 427301, ECLI:FR:CECHR:2020:427301.20201119.

Germany

Bundesverfassungsgericht 29 October 1987, 2 BvR 624/83.

Family Farmers and Greenpeace Germany v Germany, Verwaltungsgericht Berlin 31 October 2019, 10 K 412/18. The complaint is available at <www.greenpeace.de/sites/www.greenpeace.de/files/publications/20182710-greenpeace-guenther-klageschrift-klimaklage.pdf> accessed 16 November 2021.

Luciano Lliuya v RWE, Landgericht Essen 15 December 2016, 2 O 285/15; Oberlandesgericht Hamm 30 November 2017, I-5 U 15/17. The complaint is available at <www.germanwatch.org/sites/germanwatch.org/files/static/19019.pdf> accessed 16 November 2021.

Neubauer et al. v Germany, Bundesverfassungsgericht 24 March 2021, 1 BvR 2656/18, 1 BvR 78/20, 1 BvR 96/20, 1 BvR 288/20. The complaint is available at <www.germanwatch.org/sites/germanwatch.org/files/Klimaklage%202020%20-%20Verfassungsbeschwerde_online.pdf> accessed 16 November 2021.

Ireland

Friends of the Irish Environment CLG v Government of Ireland Irish Supreme Court 31 July 2020, Appeal No 205/19.

The Netherlands

Stichting Urgenda v State of the Netherlands Supreme Court of Netherlands 20 December 2019 No 19/00135.

European Union Courts

Carvalho et al. v Parliament and Council *Carvalho et al. v Parliament and Council* T-330/18 (2019) ECLI:EU:T:2019:324. Case C-565/19P; (2020) ECLI:EU:C:2021:252. The complaint is available at <www.peoplesclimatecase.caneurope.org/wp-content/uploads/2018/08/application-delivered-to-european-general-court.pdf> accessed 16 November 2021.

State responsibility for climate change under EU and German law*

Oliver Dörr

Abstract

This article compares state responsibility for climate change under EU law and German law and thereby adopts a broad definition of ‘responsibility’ – it is understood to cover liability for climate damages as well as judicial remedies to enforce state climate protection measures. EU law provides for the possibility of an action for annulment against individual Union acts (as recently sought in the *Carvalho* climate case) but also allows Member States to be held responsible in infringement proceedings or to obtain an interpretation of Union law through a preliminary ruling. While annulment proceedings by individuals are subject to narrow admissibility criteria, German law allows associations to appeal against environmental decisions affecting public interests without individual interests having to be infringed. In terms of liability for damages caused by public authorities, both the Union and the national law require the existence of damage for which the unlawful conduct of a public institution was causal. In Germany, public officials must further have violated an official duty designed to protect individual interests and must have acted with fault. This contribution concludes that although plaintiffs have a variety of possible legal remedies at their disposal, most of them are not suitable for asserting climate protection interests.

1 Introduction

State responsibility under any legal system entails that public entities can be held accountable for their conduct which has caused damage to others. Conditions and consequences of accountability depend, of course, upon the legal fine print of the system in question, i.e., on the concrete rules and principles on how to bring an individual claim and how to go to court to enforce that claim. Previously, we heard about those rules under international law and in different national legal systems. I have been asked by the conveners of this conference to shed some light on how public responsibility could be invoked with regard to climate change under the laws of the European Union and of Germany.

* This article was written on the occasion of the 2018 Conference on ‘Climate change, responsibility and liability’ held in Graz, Austria. The content reflects the then current state of research and law.

In addressing this question, I shall take the term ‘responsibility’ to have a somewhat wider meaning than it usually has in legal doctrine. For the purpose of my presentation, I shall include under this term not only the concept of liability for any damage that has occurred as a consequence of State behaviour, but also the rules of judicial protection that allow certain parties to bring a case before a court for climate protection against the State. Quite a number of such cases have been brought forward in different countries, but, for what is publicly known, their success has been limited – at least outside the Netherlands. We shall see what the prospects are for proceedings in Luxembourg and in German courts.

Since my topic explicitly refers to ‘State responsibility’, it is limited to claims against public entities and does not address proceedings under private law against private companies. Thus, the well-known case of a Peruvian farmer against the large energy company RWE pending before the appeal court in Hamm (Germany), is not part of my presentation.

2 European Union law

Under the rules of EU law, different courses of legal actions before the Union courts are available against the Union itself and its Member States. In any of those cases, no matter who the applicant is, the crucial questions will always be: Which legal obligation was incumbent upon the respective defendant, and is that obligation precise enough to allow the plaintiff to show that it has been violated?

2.1 Judicial actions questioning the climate policy of the Union

The main instrument to hold the Union legally responsible for its climate policy measures is, of course, the action for annulment under Article 263 TFEU. According to that provision, the applicant must argue an ‘infringement of the Treaties or of any rule of law relating to their application’, which, pursuant to the Court’s jurisprudence, refers to the entire body of EU law. Thus, basically any norm or principle of Union law that is binding for EU organs, and could have a bearing on adopting measures relating to climate policy, could be invoked before the EU courts.

What kind of norms these are becomes apparent when we look at the claims raised in the case of *Carvalho and Others v Parliament and Council*,¹ in which a group of

1 Case T-330/18 *Armando Carvalho and Others v European Parliament and Council of the European Union* (2018) ECLI:EU:T:2019:324; appeal pending as Case C-565/19 P (decided in 2021, see: Case C-564/19 P *Armando Carvalho and Others v European Parliament and Council of the European Union* (2021) ECLI:EU:C:2021:252.

individuals had brought an annulment action in May 2018 against the greenhouse emissions acts of the EU, adopted in that same year. The action was dismissed for lack of standing by the General Court in May 2019, but nevertheless, the claims raised by the plaintiffs demonstrate quite aptly the range of legal arguments that could be brought against EU climate policy. In a nutshell, the plaintiffs invoked three different bases for their claims: the goals of EU environmental policy laid down in Article 191 TFEU, fundamental rights contained in the EU Charter, and customary international law.

2.1.1 The goals of EU environmental policy

From the outset, it seems very unlikely that the European Court could ever be in a position to grant an annulment under those norms. First, the goals of the environmental policy of the Union set out in Article 191 TFEU are simply that, goals, and they do not contain any precise obligation for the legislative organs to adopt a certain course of action. According to that provision, the Union shall contribute to pursuing certain named objectives, among them ‘promoting measures at international level ... combating climate change’. By simply taking part in the international agreements under the UN Framework Convention, the EU obviously pursued that objective and, thus, fulfilled the only obligation deriving from Article 191 para 1 TFEU. Also, the requirements under para 2, that the Union policy ‘shall aim at a high level of protection’ and ‘be based on the precautionary principle’, are far too vague as to allow a court of law to base the finding of a violation upon them.

2.1.2 EU fundamental rights

Second, as to fundamental rights of EU law, the applicants in *Carvalho and Others* referred, among others, to the right to life and physical integrity, the right to pursue an occupation, the right to property and the rights of children. All those guarantees are laid down in the EU Charter and, thus, binding upon all institutions of the Union. However, the question is if they can be invoked before the EU courts against measures that the EU adopted to combat climate change. To do that, the applicants must argue that the measures adopted were clearly insufficient in order to protect the said individual rights, and therefore, they would have to base their claim on something known as the doctrine of ‘positive obligations’. Well-known from the jurisprudence of the European Court of Human Rights, but also established in various domestic legal systems, this doctrine is yet to be adopted by the European Union courts with regard to the fundamental rights of EU law.

There is some case-law on positive obligations, that is, legal duties to act, with regard to the basic freedoms in the EU internal market (e.g., the *Schmidberger* case of 2003²), but, up to now, the Union courts have adopted the dynamic approach of the Strasbourg Court towards protective obligations only with regard to Article 4 of the EU Charter, that is the absolute prohibition of torture and inhuman or degrading treatment, in cases concerning the European arrest warrant.³ Other than that, especially in the field of environmental policy, the Luxembourg courts have been very reluctant in this respect.

Nevertheless, the argument that positive obligations are, in general, part of EU law in the field of fundamental rights can be made in view of Article 52 para 3 of the EU Charter. According to that provision, the Charter rights, which correspond to rights guaranteed by the European Convention, shall be taken to have the same meaning and scope as the Convention rights – they ought to be interpreted and applied in a parallel manner. And since the Convention contains, just as the EU Charter, a right to life, the duty to protect human life can be read into the Charter as a positive obligation incumbent upon the Union. However, this argument does not work with regard to the right to physical integrity since the Convention does not encompass any such guarantee.

Once the positive obligation of EU organs to protect human life by taking preventive measures is established, the question arises if and to what extent that obligation is enforceable in the EU courts. When applying the doctrine of positive obligations, the European Court of Human Rights usually accepts a wide margin of appreciation and freedom of design that States enjoy when fulfilling those obligations. The Court emphasises the primary duty of the State to put in place a legislative and administrative framework designed to provide effective protection against plausible threats to the right to life, but accepts the choice of means in principle to fall within the State's margin of appreciation.⁴ Thus, a violation of the positive obligation can basically only be established in court when a State has taken no measures at all against a perceived threat or when the measures taken were manifestly insufficient.

By this standard, it does not seem very likely that the EU actions on reducing the emissions of greenhouse gases, or any other climate policy measure for that matter, would fail the fundamental rights test in the Union courts.

2 Case C-112/00 *Eugen Schmidberger, Internationale Transporte und Planzüge v Republik Österreich* (2003) ECLI:EU:C:2003:333.

3 See e.g., Joined Cases C-404/15 and C-659/15 PPU *Aranyosi and Căldăraru* (2016) ECLI:EU:C:2016:198, paras 84-94.

4 E.g., *Budayeva and Others v Russia*, App no 15339/02, 21166/02, 20058/02, 11673/02, 15343/02 (ECtHR, 20 March 2008), paras 128-135.

2.1.3 Customary international law

The third ground on which the plaintiffs in *Carvalho and Others* were basing their action for annulment is ‘the customary international law duty prohibiting States from causing harm and to prevent damage’. There can be no doubt today that this duty exists under general international law; the famous dictum in the *Trail Smelter* arbitration (1938/41) has been adopted and extended in the jurisprudence of the International Court of Justice. The Court more than once stipulated the general obligation of States to ensure that activities within their jurisdiction and control ‘respect the environment of other States or of areas beyond national control’.⁵ And additionally, according to settled case-law of the EU courts, the Union is in principle bound by customary international law and those rules are justiciable in proceedings questioning the validity of EU acts.⁶

However, two questions arise in respect of the customary obligation invoked: First, is it a binding legal duty under international law upon international organisations? The obligation to prevent damage started out in international legal practice as an obligation between neighbouring States bound under international law to control their own territory and responsible for any substantial damage to neighbouring countries originating from that territory. The territorial basis of this obligation was made very clear in the *Pulp Mills* case of 2010 when the International Court of Justice referred to ‘activities which take place in its territory, or in any area under its jurisdiction’.⁷ And since the European Union, just like any international organisation, does not, in a legal sense, have any territory, it would take a very sophisticated argument to show that it is indeed bound by that legal obligation.

Secondly, even if that argument could be made, the substance of the obligation must be reviewed, as it is established in international practice. Looking at the relevant case law, it becomes apparent that the obligation to prevent harm is simply a duty of due diligence which requires every State ‘to use all the means at its disposal’ to avoid activities that would cause significant damage to the environment of another

5 *Legality of the Threat or Use of Nuclear Weapons* (Advisory Opinion) 1996 <<https://www.icj-cij.org/en/case/95>> accessed 3 November 2021 (226); *Pulp Mills Case (Argentina v Uruguay)* (Merits) 2010 <www.icj-cij.org/en/case/135/judgments> accessed 3 November 2021 (101).

6 Case C-162/96 *A. Racke GmbH & Co v Hauptzollamt Mainz* (1998) ECLI:EU:C:1998:293, paras 26-27, 45-46; Case C-366/10 *Air Transport Association of America and Others v Secretary of State for Energy and Climate Change* (2011) ECLI:EU:C:2011:864, paras 101-111; Case C-266/16 *Western Sahara Campaign UK v Commissioners for Her Majesty's Revenue and Customs and Secretary of State for Environment, Food and Rural Affairs* (2018) ECLI:EU:C:2018:118, paras 47-48; Case T-115/94 *Opel Austria GmbH v Council of the European Union* (1998) ECLI:EU:T:1998:166, paras 89-95; Case T-512/12 *Front populaire pour la libération de la saguia-el-hamra et du rio de oro (Front Polisario) v Council of the European Union* (2015) ECLI:EU:T:2015:953, para 180.

7 ICJ *Pulp Mills* (n 5) para 101.

State.⁸ Thus, the obligation would only be violated if the relevant actor ignores or neglects the applicable standard of care. In essence, this standard seems similar to the one that is applicable to positive obligations resulting from fundamental rights. Again, it is unlikely at present that the Union could be found in violation of that standard.

2.1.4 International treaties

Besides the obligation under international *customary* law, the EU could before its own courts also be held responsible for violations of its international *treaty* commitments. According to established case law, the validity of any legal act of the Union may be reviewed by the EU courts in the light of international treaty obligations subject to three conditions: first, the Union must be bound by the treaty in question; second, the nature and the broad logic of the treaty must not preclude such a review; and third, the treaty's provisions must appear, as regards their content, to be unconditional and sufficiently precise.⁹

There can be no doubt that the European Union itself is a party to the Kyoto Protocol and the Paris Agreement and is, therefore, bound by the obligations stipulated therein. However, are those obligations unconditional and sufficiently precise?

In the case *Air Transport Association of America and Others* (2011), the European Court of Justice denied this for the Kyoto Protocol because of its inherent flexibility: even though the Protocol imposed quantified greenhouse gas reduction commitments, the parties 'may comply with their obligations in the manner and at the speed upon which they agree'. The relevant provisions of the Protocol were therefore held not to be precise enough to serve as the basis for contesting the validity of the EU directive on emission allowance trading.¹⁰ As to the Paris Agreement, there seems to be widespread agreement among legal scholars that it contains a range of provisions varying in legal character, an exceptional *mélange* of hard, soft and non-obligations.¹¹ The majority of the 'hard obligations' seem to relate to mitigation and transparency. Thus, the Parties undertake binding obligations relating to preparing,

8 Ibid.

9 E.g., Case C-308/06 *The Queen on the Application of: International Association of Independent Tanker Owners (Intertanko), International Association of Dry Cargo Shipowners (Intercargo), Greek Shipping Co-operation Committee, Lloyd's Register, International Salvage Union v Secretary of State for Transport* (2008) ECLI:EU:C:2008:312, paras 43-45; Case C-366/10 *Air Transportation Association of America and Others v Secretary of State for Energy and Climate Change* (2011) ECLI:EU:C:2011:864, paras 51-55.

10 ECJ C-366/10 (n 9) paras 73-78.

11 On this and the following Lavanya Rajamani, 'The 2015 Paris Agreement: Interplay between hard, soft and non-obligations' (2016) 28(2) *Journal of Environmental Law* 337, 347ff <<https://doi.org/10.1093/jel/eqw015>> accessed 3 November 2021.

communicating and maintaining national contributions, as well as pursuing domestic measures. However, those obligations contained in Article 4 of the Agreement are only obligations of conduct and not of result; they are coupled with a good faith expectation that Parties intend to achieve their contributions, but there is no explicit requirement to actually do so.

As a result, it seems that the obligations undertaken in the Paris Agreement offer an even higher degree of flexibility than those contained in the Kyoto Protocol. Therefore, it is not expected that the Paris Agreement will lend itself easily to contest the validity of any EU policy measure in the European courts.

All in all, the chances of bringing a successful action for annulment against EU policy measures in the courts of the Union are rather limited.

2.2 Public liability of the Union

As to the Union's liability for damages, any action would have to be brought under Article 268 and Article 340 para 2 TFEU. According to the latter, compensation for damage shall be awarded in accordance with the general principles common to the laws of the Member States if damage has been caused by institutions or servants of the Union in the performance of their duties. This reference to 'general principles' grants the EU courts the authority, and indeed the task, to develop the common rules on EU non-contractual liability in their jurisprudence. In their settled case law, the courts have developed three conditions under which the European Union may incur such liability under Article 340 TFEU: that is the unlawfulness of the conduct alleged against the EU institution, the fact of damage and the existence of a causal link between the conduct and the damage suffered.¹² Regarding the first condition, it is also settled case-law that a sufficiently serious breach of a legal norm intended to confer rights on individuals must be established.¹³

When examining how that state of the law helps with invoking climate change liability, three observations must be made:

First, primary EU law, as it stands today, only provides for liability for illegal conduct, i.e., for breach of law. There is no room for objective or absolute liability, which the Union could incur simply by acting or not acting, thereby creating a specific risk or putting an undue burden on someone. Only unlawful conduct can prompt liability. Up until 2005, some EU court decisions had been pondering if EU liability could also arise from the infliction of 'unusual' and 'special' damage alone, but the Grand Chamber of the Court of Justice ended that reflection phase by holding in

12 E.g. Joined Cases C-8/15 P to C-10/15 P *Ledra Advertising Ltd and Others v European Commission and European Central Bank* (2016) ECLI:EU:2016:701, para 64.

13 E.g. ECJ C-8/15 P (n 12) para 65.

FIAMM (2008) that liability in the case of lawful conduct of the public authorities is not part of the general principles of EU law.¹⁴

Second, the violation of a legal rule can only give rise to liability of the Union if that rule was intended to confer rights on the individual claiming liability, i.e., if the rule served to protect the interests of a specific group of persons and the claimant belonged to that group. Now, this will be very difficult to show with regard to climate policy measures of the Union, since all legal obligations that could be violated by adopting (or not adopting) such measures will usually be set up to protect the common good, not individual or certain groups' interests. The European courts have accepted obligations under EU environmental law to serve the interests of individuals, if their performance directly impacted human health and if it concerned an identifiable group of persons (such as the standards for the quality of the air or drinking water in a designated area). The same would be much harder to show for global obligations to reduce emissions or other climate policy measures that do not, in a sufficiently direct manner, relate to the health or living conditions of a specific group of people. The EU liability regime focuses on the violation of and damage to individual interests and does not lend a hand to bringing altruistic claims for damage done to the general public or future generations etc.

Third, even if an individual interest protected by a legal norm could be identified, EU law requires that the norm has been violated in a 'sufficiently serious' manner. This requirement has been developed in the case law as a complex normative criterion in order to protect the discretion of EU organs in adopting policy measures. To determine the serious character of a violation, the criterion takes into account, above all, the complexity of the situation to be regulated, and the margin of discretion available to the author of the act in question: Only if the EU institution concerned 'manifestly and gravely' disregarded the limits of its discretion, can the Union incur liability. As we have seen earlier, there is considerable discretion left to the EU policy organs in climate policy matters, which is another reason why the liability regime under Article 340 para 2 TFEU is not a very promising playing field if it comes to exerting pressure on the European Union with regard to its climate change policy.

2.3 Judicial actions against Member States

It might be easier then to bring judicial actions before the EU courts against the Member States since the legal obligations under EU environmental law, which are

14 Joined Cases C-120/06 P and C-121/06 P *Fabbrica italiana accumulatori motocarri Montecchio SpA (FIAMM) and Fabbrica italiana accumulatori motocarri Montecchio Technologies LLC (FIAMM Technologies) v Council of the European Union and Commission of the European Communities* (2008) ECLI:EU:C:2008:476, para 175.

binding upon the Member States, are much more concrete and specific than those under international law: For example, individual Member States could be sued for not correctly transposing Directive 2003/87 on the greenhouse gas emission allowance trading system or for not complying with Regulation 2018/842 on binding annual greenhouse gas emission reductions.

The easiest procedure for upholding the law in those cases is, of course, the infringement procedure pursuant to Article 258 TFEU, in which the Commission can apply to the Court to find that the Member State in question has objectively failed to fulfil an ‘obligation under the Treaties’. No specific interest is necessary, and no particular qualification must be shown to exist. And the Commission could, with this procedure, also enforce obligations under international law which, by the EU itself acceding to them, have become obligations under EU law.

Also, other Member States could initiate such an infringement procedure according to Article 259 TFEU, but experience shows that it is very unlikely. States usually prefer to settle disagreements between them by political and diplomatic means rather than before courts of law, and this also holds true within the European Union.

Another possibility to hold EU Member States responsible for violating EU environmental law is the preliminary reference procedure under Article 267 TFEU. Conventionally, this procedure only establishes a formalised judicial dialogue between a national court and the European Court in the course of which the national judge can enquire about the correct interpretation of acts of EU law. In practice, however, the reference functions as an instrument to assess and, thus, control the conformity of national law with EU law: By interpreting EU law with regard to domestic proceedings in which an act of national law is being questioned, the Court *de facto* rules on whether that act is compatible with EU law. Therefore, the reference procedure can be used to enforce EU climate policy measures against non-complying conduct of Member States.

2.4 Public liability of Member States

In contrast, the chances of holding a Member State liable for insufficient climate policy measures under EU law are rather limited since the liability rules which the Court has developed in its *Francoovich* jurisprudence are basically the same as those applicable to the Union itself. Since its ruling in the case *Brasserie du Pêcheur* (1996), the Court has made clear that it wishes to create a coherent system of liability for Union and the Member States alike: the conditions under which the States may incur liability for damage caused to individuals by a breach of EU law, are not sup-

posed to differ from those governing the liability of the Union in like circumstances.¹⁵

That means that the difficulties of applying the EU liability rules to Member States conduct with regard to EU climate policy measures are the same as those discussed earlier for the Union itself: in order to be successful, a liability claim would always have to establish that an EU norm protecting specific individual interests has been breached in a sufficiently serious manner.

2.5 Summary

To sum up, under EU law, there are at least two avenues open to have the EU courts determine that a Member State violated a Union measure to fight climate change. It is also possible for certain actors to reach the same finding in respect of the Union itself, but it is much less likely because the legal obligations binding the EU are not very precise. Furthermore, it would be very difficult to have the liability of Union or Member States established under EU law. Both liability regimes require the violation of legal norms protecting specific individual interests, which usually does not apply to climate policy norms.

3 German Law

The picture is, not entirely but, somewhat different when it comes to German law. Here, judicial actions against the conduct of State authorities in environmental matters have been made easier over the last ten years, in particular, due to the need to transpose into national law the Århus Convention and corresponding EU law. On the other hand, the German rules on public liability have not been adapted; accordingly, they are still in a rather inchoate state and in substance very restrictive as to individual claims for altruistic purposes.

3.1 Judicial actions against public entities

As to the first point, the Federal Act on Judicial Appeals in Environmental Matters, enacted in 2006 and amended several times since, gives private associations the right

15 Joined Cases C-46/93 and C-48/93 *Brasserie du Pêcheur SA v Federal Republic of Germany and The Queen v Secretary of State for Transport, ex parte Factortame Ltd and Others* (1996) ECLI:EU:C:1996:79, paras 40–47; Case C-352/98 P *Laboratoires pharmaceutiques Bergaderm SA and Jean-Jacques Goupil v Commission of the European Communities* (2000) ECLI:EU:C:2000:361, para 41.

to bring appeals in court against certain public decisions that could affect the environment. For such an appeal to be admissible, the association must not assert that its rights, or indeed anybody's individual rights, have been violated. The plaintiff must simply establish before the court that statutory provisions that could be of importance for the public decision are violated and, in most cases, that those provisions relate to the protection of the environment. With this Act, the threshold for bringing judicial actions against State decisions affecting the environment has been lowered considerably, and, of course, this includes appeals alleging that the authorities have neglected legal norms on climate change. However, the Act does only apply to certain enumerated administrative decisions that are provided for in statutes and not to legislative or other acts of climate policy.

Outside the Act on Environmental Appeals, plaintiffs who wanted to engage in climate change litigation would have to argue that their individual rights have been specifically affected by the conduct of public authorities. They could, of course, refer to the doctrine of protective duties under the federal constitution (*Grundgesetz*), but, as in EU law, the Federal Constitutional Court usually accepts a wide margin of appreciation of the State with regard to identifying a possible threat to fundamental rights, as well as to the choice of means designed to contain that threat. This has not been fundamentally changed in the widely discussed decision of the Court of March 2021 in which it held that the federal legislative in Germany violated its duty to protect life and physical integrity of future generations by adopting a partly insufficient Climate Chance Act.¹⁶

3.2 Public liability of the State

Claims for public liability in climate change matters would have to fit into the private torts (delicts) regime in the Civil Code on which public liability is still based in German law. Claimants would have to show that public officials violated one of their official duties, which was designed to protect individual interests, including those of the claimant itself. Additionally, attribution, specific damage, causality and fault would have to be established, which might prove a daunting task in respect of factors leading to climate change.

16 Case 1 BvR 2656/18, 1 BvR 78/20, 1 BvR 96/20, 1 BvR 288/20 *Neubauer et al. v Germany*, BVerfG Order of the First Senate of 24 March 2021 <<https://bit.ly/3NwmyFo>> accessed 29 March 2022, 143-172.

4 Conclusion

In conclusion, there is no doubt that the European Union and the Federal Republic of Germany, both constitutional systems based on the rule of law, provide for, in their respective legal order, a considerable number of judicial remedies which plaintiffs can pursue before a court of law. However, to a large extent, these remedies can only be claimed by private parties if the conduct of public authority specifically affects their individual interests and these interests are protected by law. This will exclude most legal norms that have been adopted concerning climate change. Better prospects might be found for enforcing EU law on climate change as against the Member States since their specific obligations to transpose or implement environmental standards have been established, and Member States can be held responsible in EU courts for fulfilling those obligations. To establish liability for damages, however, will be difficult in both EU and German courts since both liability regimes are only geared towards the violation of individual rights, which, outside the Netherlands, has so far been hard to show in respect of climate policy measures.

Bibliography

Rajamani L, 'The 2015 Paris Agreement: Interplay between hard, soft and non-obligations' (2016) 28(2) *Journal of Environmental Law* <<https://doi.org/10.1093/jel/eqw015>> accessed 3 November 2021.

Cases

European Court of Justice

Brasserie du Pêcheur SA v Federal Republic of Germany and The Queen v Secretary of State for Transport, ex parte Factortame Ltd and Others joined Cases C-46/93 and C-48/93 (1996) ECLI:EU:C:1996:79.

A. Racke GmbH & Co v Hauptzollamt Mainz Case C-162/96 (1998) ECLI:EU:C:1998:293.

Eugen Schmidberger, Internationale Transporte und Planzüge v Republik Österreich Case C-112/00 (2003) ECLI:EU:C:2003:333.

The Queen on the application of: International Association of Independent Tanker Owners (Intertanko), International Association of Dry Cargo Shipowners (Intercargo), Greek Shipping Cooperation Committee, Lloyd's Register, International Salvage Union v Secretary of State for Transport Case C-308/06 (2008) ECLI:EU:C:2008:312.

Fabbrica italiana accumulatori motocarri Montecchio SpA (FIAMM) and Fabbrica italiana accumulatori motocarri Montecchio Technologies LLC (FIAMM Technologies) v Council of the European Union and Commission of the European Communities joined Case C-120/06 P and C-121/06 P (2008) ECLI:EU:C:2008:476.

Air Transport Association of America and Others v Secretary of State for Energy and Climate Change Case C-366/10 (2011) ECLI:EU:C:2011:864.

State responsibility for climate change under EU and German law

Aranyosi and Căldăraru joined Cases C-404/15 and C-659/15 PPU (2016) ECLI:EU:C:2016:198.

Ledra Advertising Ltd and Others v European Commission and European Central Bank joined Cases C-8/15 P to C-10/15 P (2016) ECLI:EU:2016:701.

Western Sahara Campaign UK v Commissioners v Her Majesty's Revenue and Customs and Secretary of State for Environment, Food and Rural Affairs Case C-266/16 (2018) ECLI:EU:C:2018:118.

Armando Carvalho and Others v European Parliament and Council of the European Union Case C-564/19 P (2021) ECLI:EU:C:2021:252.

General Court of the European Union

Opel Austria GmbH v Council of the European Union Case T-115/94 (1998) ECLI:EU:T:1998:166.

Front populaire pour la libération de la saquia-el-hamra et du rio de oro (Front Polisario) v Council of the European Union Case T-512/12 (2015) ECLI:EU:T:2015:953.

Armando Carvalho and Others v European Parliament and Council of the European Union Case T-330/18 (2018) ECLI:EU:T:2019:324.

European Court of Human Rights

Budayeva and Others v Russia, App no 15339/02, 21166/02, 20058/02, 11673/02, 15343/02 (ECtHR, 20 March 2008).

International Court of Justice

Legality of the Threat or Use of Nuclear Weapons (Advisory Opinion) 1996 <<https://www.icj-cij.org/en/case/95>> accessed 3 November 2021.

Pulp Mills Case (Argentina v Uruguay) (Merits) 2010 <www.icj-cij.org/en/case/135/judgments> accessed 3 November 2021.

Germany

Neubauer et al. v Germany, Bundesverfassungsgericht 24 March 2021, 1 BvR 2656/18, 1 BvR 78/20, 1 BvR 96/20, 1 BvR 288/20.

Oslo Principles in EU and Austrian climate change law

Eva Schulev-Steindl and Gerhard Schnedl

Abstract

In 2015, a group of international experts launched a visionary initiative: The Oslo Principles on Global Climate Change. These non-legally binding principles provide guidance for the obligations of states and enterprises in the face of the climate crisis. Dedicated to the 2-degree target and with a strong focus on human rights and preventive actions, the Principles provide a pathway for global climate mitigation efforts. This article examines the extent to which the Oslo Principles have become a legal reality in the EU and Austria and seeks to identify respective implementation gaps.

1 Introduction

The difference between a legal principle and a legal obligation could be illustrated by an angry cat wanting to be a tiger: The principle seeks to guide behaviour and signals strength, but, when it comes to it, lacks the obligation's 'teeth.' Thus, one might wonder why, in March 2015, a group of experts came together to adopt a set of principles on the responsibilities of states and enterprises regarding climate change and published them as 'Oslo Principles on Global Climate Obligations.'¹

Yet the underlying motive may well have been a certain impatience. An impatience that had grown out of the fact that, for years, states and their legislators had remained largely passive in fighting climate change. And this, even though science had long since presented sufficient evidence for global warming and its man-made causes², and the effects of climate change had become increasingly tangible for people. Though climate protection agreements had been concluded at the international

* The authors would like to thank Dr. Dominik Geringer, Dr. Miriam Hofer and Mag. Julia Wallner, Institute of Public Law and Political Science, University of Graz, for their valuable support in preparing this paper.

1 Expert Group on Global Climate Obligations, *Oslo principles on global climate change* (Legal Perspectives for Global Challenges 3, Eleven International Publishing 2015) 65, available at <<https://bit.ly/3Mo7hX0>> accessed 1 December 2021.

2 IPCC, *Climate change 2014: Synthesis report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (IPCC 2014); IPCC, *Climate change 2021: The physical science basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press, in Press).

level³ and the Paris Agreement⁴ was already in sight, what was largely lacking (and today still is!) were ambitious government measures to tackle climate change.

Against this background, the group of experts, comprising international lawyers, human rights experts, environmental lawyers, etc., after several years of research and discussion, culminating in a meeting in Oslo, Norway, in 2014, adopted the said set of principles.⁵ These Principles, supplemented by legal commentary, deal with the aspect of prevention, i.e., the mitigation of climate change, rather than with adaptation, damages or climate change refugees.⁶ They focus on the issue of obligations for states and enterprises to reduce their GHG emissions⁷ and aim at achieving the 2-degree-target⁸, which soon after the Principles' adoption was stated in the Paris Agreement⁹.

Thus, Oslo Principle (OP) 6 provides that states and enterprises take measures based on the precautionary principle (OP 1) 'to ensure that the global average surface temperature increase never exceeds pre-industrial temperature by more than 2 degrees Celsius'. Thereby the necessary measures shall be guided by the precautionary principle, and further permitted emission levels have to be in line with the two-degree goal. Emission reductions shall be made as far as possible without relevant additional costs (OP 7), new activities causing excessive GHG emissions are to be refrained from principally (OP 8) and available GHG reduction measures entailing costs shall be taken if the costs can be offset through future savings and financial gains (OP 9). The Principles demand observance even if present or future national or international law (reduction) standards should be lower (OP 12).

Regarding states' obligations, the Principles partly distinguish between least developed, developing, and developed countries¹⁰, thus, reflecting the well-known principle of 'common but differentiated responsibility',¹¹ which is also explicitly expressed in OP 14. According to that, all states are responsible for mitigating the

3 E.g., United Nations Framework Convention on Climate Change (adopted 20 January 1994, entered into force 21 March 1994) UNGA Res 48/189; Kyoto Protocol to the United Nations Framework Convention on Climate Change (adopted 11 December 1997, entered into force 16 February 2005) 2303 UNTS 162.

4 Paris Agreement (adopted 12 December 2015, entered into force 4 November 2016) UNTC No 54113.

5 Expert Group on Global Climate Change Obligations (n 1) 1.

6 Ibid 15.

7 Ibid 14.

8 Ibid 5.

9 Paris Agreement, Article 2.

10 E.g., OP 2, OP 9, OP 14, OP 15; Expert Group on Global Climate Change Obligations (n 1) 61.

11 See e.g., UNFCCC, Article 3(1); Lavanya Rajamani, 'The principle of common but differentiated responsibility and the balance of commitments under the climate regime' (2000) 9 RECIEL 120; Rowena Maguire, 'The role of common but differentiated responsibility in the 2020 climate regime: Evolving a new understanding of differential commitments' (2013) 7 CCLR 260.

negative impacts of climate change (see also OP 11); still, the extent of responsibility depends on the respective (economic) capabilities¹² and the historical contributions¹³ to the present level of GHGs. In terms of distributing the permissible GHG emissions between countries, the Oslo Principles adopt a per capita approach (OP 3), which means that each human being is granted the same amount of GHG emissions. This approach is suggested due to justice considerations and practicability reasons and provides a basis for distributing the reduction burden among states.¹⁴ Consequently, a distinction between below- and above-permissible-quantum countries is made (OP 4), indicating whether certain countries stayed below or exceeded their allowed share of GHG emissions and thus might have to take additional measures (OP 13-19). In addition to these reduction obligations, the principles contain various accompanying stipulations, such as that climate-damaging subsidies or credits should be avoided by states (OP 21). Procedural obligations are also of particular concern: States must accept independent jurisdiction to review their compliance with obligations under the Principles (OP 25) and have information obligations to citizens (OP 26).

Finally, enterprises are put under obligation: They should assess their vulnerability to climate change, especially if they operate in the fossil fuel sector, and disclose it to the public (OP 27, 28). Before building major new facilities, enterprises should conduct an environmental impact assessment, including the carbon footprint of the facility (OP 29). Finally, companies in the banking and finance sector are to consider the GHG effects of projects they plan to finance (OP 30).

In 2018, the Oslo Principles were complemented by a separate list of specific principles for enterprises and investors, the Climate Principles for Enterprises. The dynamic development of recent years, including the increasing occurrence of extreme weather events, new findings of the IPCC special reports, as well as legal and societal advancements have soon led to a revision and supplementation of these principles.¹⁵

12 Charlotte Epstein, 'Common but differentiated responsibilities' (*Britannica*, 29 December 2015) <www.britannica.com/topic/common-but-differentiated-responsibilities> accessed 26 February 2022.

13 H. Damon Matthews, 'Quantifying historical carbon and climate debts among nations' (2016) 6 *Nature Climate Change* 60; Lukas H. Meyer and Dominic Roser, 'Climate justice and historical emissions' (2010) 13 *Critical Review of International Social and Political Philosophy* 229.

14 Expert Group on Global Climate Change Obligations (n 1) 19.

15 See the contribution by Jaap Spier in this book; Expert Group on Climate Obligations of Enterprises, *Principles on climate obligations of enterprises* (2nd edn, Eleven International Publishing 2020), available at <<https://climateprinciplesforenterprises.org/>> accessed 10 February 2022; for the first edition see: Expert Group on Climate Obligations of Enterprises, *Principles on climate obligations of enterprises* (Eleven International Publishing 2018), available at <<https://climateprinciplesforenterprises.org/resources/>> accessed 14 February 2022.

Of course, the Oslo Principles do not create new law. They draw on different legal disciplines¹⁶, such as human rights, international, constitutional, environmental and tort law, and reflect an ‘amalgamation’ of various legal sources, as ‘legislation, case law and doctrine’.¹⁷ The aim is to provide a legal reference point and a comprehensive guide for policy and decision makers. Thus, as the authors are aware, the Principles are to a greater or lesser extent also political in nature – and so they point out:

We realise, of course, that, if brought before courts, it cannot be taken for granted that courts will issue judgements urging nation states to curb their emissions significantly. No doubt judges willing to do so will be labelled activists.¹⁸

However, it is even more surprising that shortly after the Oslo Principles were promulgated, Dutch judges explicitly imposed such GHG reduction obligations on a state. In fact, in June 2015, the Netherlands was sentenced in the *Urgenda* case to pursue more ambitious climate targets than the government had intended, namely, to reduce GHG emissions by at least 25% by 2020 (compared to 1990 levels).¹⁹ This ruling was upheld by the Dutch Supreme Court in 2019²⁰ and has become a role model for numerous further so-called climate lawsuits against states in Europe and other parts of the world.²¹ Thus, the Oslo Principles quickly have gained teeth and are leading the way when it comes to climate action commitments by states, and enterprises as well.

In the following, it will be examined how the principles – in their main features – are reflected in the law of the EU and, on behalf of the Member States, in Austrian law. At the same time, this provides an opportunity for an overview of the various areas of climate protection law and policy in the European multi-level governance system.

16 Satvinda Nagra, ‘The Oslo Principles and climate change displacement: Missed opportunity or misplaced expectations?’ (2017) 11 Carbon & Climate Law Review 120.

17 Expert Group on Global Climate Change Obligations (n 1) 21, 22.

18 Ibid 45.

19 Rechtbank Den Haag, 24.06.2015, C/09/456689/ HA ZA 13-1396, ECLI:NL:RBDHA:2015:7196. English translation available at <<https://bit.ly/3LkwwI9>> accessed 20 February 2022.

20 Hoge Raad 20.12.2019, 19/00135, ECLI:NL:HR:2019:2007 (*Urgenda*), English translation available at <<https://bit.ly/3KcQ9RT>> accessed 20 February 2022. See Jaap Spier, ‘The “strongest” climate ruling yet: The Dutch Supreme Court’s *Urgenda* judgment’ (2020) 67 Netherlands International Law Review 320.

21 On the worldwide trend of climate lawsuits, see e.g., Jacqueline Peel and Hari M. Osofsky, ‘A rights turn in climate litigation’ (2018) 7 Transnational Environmental Law 47, <[doi:10.1017/S2047102517000292](https://doi.org/10.1017/S2047102517000292)> accessed 12 March 2022; Jacqueline Peel and Jolene Lin, ‘Transnational Climate Litigation: The Contribution of the Global South’ (2019) 113 The American Journal of International Law 679 <<https://doi.org/10.1017/ajil.2019.48>> accessed 12 March 2022; Charles Beaugregard et al., ‘Climate justice and rights-based litigation in a post-Paris world’ (2021) 21 Climate Policy 652 <<https://doi.org/10.1080/14693062.2020.1867047>> accessed 12 March 2022; Gerhard Wagner, ‘Klimaschutz durch Gerichte’ (2021) NJW 2256; from the Austrian perspective Eva Schulev-Steindl, ‘Klimaklagen: Ein Trend erreicht Österreich’ (2021) 7(1) *ecolex* 17.

2 Focus on human rights

In recent years, fundamental and human rights have increasingly been used to underpin states' climate protection obligations.²² The climate crisis, after all, poses a serious threat to the life and health of individuals, and thus to their fundamental rights to life, health, and property or the right to water, food and a clean and healthy environment.²³ Accordingly, numerous 'rights-based'²⁴ climate lawsuits have been filed against states around the world in recent years²⁵ to push for more ambitious climate policies.

The commentary on the Oslo Principles also emphasises the fundamental rights basis of states' climate protection obligations and points out that the above-mentioned human rights, as well as the principle of human dignity that is central to the human rights debate, are enshrined in many international agreements and national constitutions.²⁶ For Europe, the European Convention on Human Rights (ECHR) is particularly relevant in this context: All EU Member States are party to the ECHR and – although the EU itself has not yet acceded to the Convention²⁷ – its fundamental rights form part of Union law as general principles²⁸ and in Austria even have constitutional status.²⁹

The ECHR's central lever for state obligations in the face of climate change are duties to protect, which can be derived from the fundamental right to life and the

22 UNEP, 'Climate change and human rights' (UNEP 2015) <<https://bit.ly/3817vU1>> accessed 28 March 2022; Margaretha Wewerinke-Singh, 'State responsibility for human rights violations associated with climate change' in Sébastien Jodoin, Sébastien Duyck and Alyssa Johl (eds), *Routledge handbook of human rights and climate governance* (Routledge 2018).

23 UNEP (n 22) 7.

24 See Peel and Osofsky (n 21) 37.

25 As of January 2022, the Climate Change Litigation Database by the Sabin Center for Climate Change Law lists a total of 1.847 cases (1.356 US cases and 491 cases in the rest of the world), see <<http://climatecasechart.com/climate-change-litigation/about/>> accessed 5 January 2022.

26 Expert Group on Global Climate Change Obligations (n 1) 22, 23 with reference to Ben Farakas et al., 'Human rights and climate obligations, draft memorandum for the experts' Group on Global Climate Change' (Yale Law School 2013) <<https://bit.ly/37WJGg4>> accessed 28 March 2022.

27 In 2009, the EU committed itself to accede to the ECHR pursuant to Article 6(2) TEU; however, the agreement reached on the basis of first negotiations was declared inconsistent with European law (see Opinion 2/13 of the ECJ of 18 December 2014, ECLI:EU:C:2014:2454); in 2020, accession negotiations were resumed, see <www.coe.int/en/web/portal/eu-accession-echr-questions-and-answers> accessed 24 January 2022.

28 TEU, Article 6(3).

29 *Bundesverfassungsgesetz vom 4. März 1964, mit den Bestimmungen des Bundes-Verfassungsgesetzes in der Fassung von 1929 über Staatsverträge abgeändert und ergänzt werden*, Federal Law Gazette 1964/59, a German version is available at <<https://bit.ly/3ILRM7Z>> accessed 28 March 2022.

protection of private and family life.³⁰ In the *Urgenda* case, the Dutch courts explicitly referred to these fundamental rights and the ‘positive obligations’³¹ of the state arising from them. At the European Court of Human Rights itself, the consequences of climate change have not yet been the subject of case law.

However, the Court has already acknowledged positive obligations in connection with environmental and natural disasters in many cases – even when the state itself has not caused or contributed to the environmental hazard.³² It can be assumed that the impacts of climate change can also trigger positive obligations of states, as they pose risks to the life, health and property of many people as well. The knowledge about these dangers is also sufficiently concrete to establish corresponding duties to act on part of the states.³³ Yet, the success of climate lawsuits based on fundamental

30 ECHR Article 2 and 8; also the fundamental right to property according to Article 1 Protocol 1 to the ECHR could be relevant.

31 Jean-Francois Akandji-Kombe, *Positive obligations under the European Convention on Human Rights. A guide to the implementation of the European Convention of Human Rights* (Council of Europe Human Rights Handbooks Series 7, Council of Europe 2007), available at <<https://rm.coe.int/168007ff4d>> accessed 25 January 2022; Katharina F Braig and Stoyan Panov, ‘The doctrine of positive obligations as a starting point for climate litigation in Strasbourg: The European Court of Human Rights as *Hilfssheriff* in combating climate change?’ (2020) 35 *Journal of Environmental Law and Litigation* 261; Lea Raible, ‘Expanding human rights obligations to facilitate climate justice? A note on shortcomings and risks’ (2021) EJLT <www.ejltalk.org/expanding-human-rights-obligations-to-facilitate-climate-justice-a-note-on-shortcomings-and-risks/> accessed 25 January 2022; Keina Yoshida and Joana Setzer, ‘The trends and challenges of climate litigation and human rights’ (2020) 2 *European Human Rights Law Review* 140.

32 See e.g., *Öneryildiz v Turkey* App. no. 48939/99 (ECtHR 30 November 2004); *Budayeva et al. v Russia* App. no. 15339/02 (ECtHR 20 March 2008); *Kolyadenko et al. v Russia* App. no. 17423/05 (ECtHR 28 February 2012); *Özel et al. v Turkey* App. no. 14350/05 (ECtHR 17 November 2015); for an overview see, Katharina F Braig, ‘Reichweite und Grenzen der umweltrechtlichen Schutzpflichten’ (2017) 39 *NuR* 100, 102ff, Anne-Carlijn Prickartz, ‘Man muss mit den Riemen rudern, die man hat: Umweltschutz als Menschenrecht vor dem Europäischen Gerichtshof für Menschenrechte’ (2015) 5 *NLMR* 386 and Gerhard Schnedl, ‘Grundrechtsschutz gegenüber Umweltbeeinträchtigungen in der Rechtsprechung des Europäischen Gerichtshofs für Menschenrechte. Altes und Neues zu Art. 8 EMRK’ in Werner Hauser and Andreas Thomasser (eds), *Bildung, Wissenschaft, Politik. Instrumente zur Gestaltung der Gesellschaft* (Böhlau Verlag 2014) 647; European Court of Human Rights Press Unit, ‘Environment and the European Convention on Human Rights’ (*ECtHR*, January 2021) <www.echr.coe.int/Documents/FS_Environment_ENG.pdf> accessed 25 January 2022; Ole W Pedersen, ‘The European Convention of Human Rights and climate change – finally!’ (2020) EJIL <www.ejiltalk.org/the-european-convention-of-human-rights-and-climate-change-finally/> accessed 25 January 2022; Heta Heiskanen, ‘Climate change and the European Court of Human Rights’ in Sébastien Duyck et al. (eds), *Routledge handbook of human rights and climate governance* (Routledge 2018); Therese Karlsson Niska, ‘Climate change litigation and the European Court of Human Rights – A strategic next step?’ (2020) 13 *The Journal of World Energy Law & Business* 331.

33 See Stephan Meyer, ‘Grundrechtsschutz in Sachen Klimawandel?’ (2020) *NJW* 894, 898ff; Miriam Hofer, *Die Staatliche Verantwortung für den Umwelt- und Klimaschutz* (in preparation).

rights under the ECHR is not undisputed.³⁴ On the one hand, it is questioned whether there are already concrete violations of individuals' rights that would make lawsuits based on these violations admissible.³⁵ On the other hand, the ECtHR regularly affords states a great deal of discretion in fulfilling their duties to protect fundamental rights, especially in the environmental sphere,³⁶ and this discretion is likely to be particularly wide in the case of climate change. After all, there is a broad spectrum of measures available for combating the climate crisis and adapting to climate change, many of which entail drastic changes in the lifestyles of large parts of the population and, not least, raise questions of fairness and social equity.

In any case, it remains to be seen how the ECtHR will rule on climate lawsuits: There is already the opportunity since currently three such climate cases are pending before the court.³⁷ One of them comes from Austria and is based on a constitutional complaint against climate-harming tax benefits for air transport that put rail transport at a competitive disadvantage. Due to narrow admissibility requirements, which raise concerns regarding the effectiveness of the legal remedy required by the ECHR, the

34 Critically, e.g., Bernhard Wegener, 'Urgenda – Weltrettung per Gerichtsbeschluss?' (2019) ZUR 3, 10ff.

35 With regard to German jurisprudence see Meyer (n 33) 898ff; in the German *Neubauer* judgment, the German Constitutional Court held that certain provisions of the Federal Climate Protection Act 2019 had an 'advance interference-like effect' on future freedom and therefore it declared them unconstitutional; however, the decision was not based on the ECHR but on national fundamental rights and not positive obligations but freedom rights were at stake; for the decision see: Bundesverfassungsgericht 24 March 2021, 1 BvR 2656/18, 1 BvR 78/20, 1 BvR 96/20, 1 BvR 288/20 (*Neubauer et al. v Germany*), for an English translation see <<https://bit.ly/3JPNqy6>> accessed 29 March 2022; on the judgement see, e.g., Jelena Bäumler, 'Sustainable development made justiciable: The German Constitutional Court's climate ruling on intra- and inter-generational equity' (2021) EJIL <<https://bit.ly/3wKz1Q1>> accessed 29 March 2022; Andreas Buser, 'Die Freiheit der Zukunft' (2021) Verfassungsblog <<https://verfassungsblog.de/die-freiheit-der-zukunft/>> accessed 25 January 2022; Anna-Julia Saiger, 'The Constitution speaks in the future tense. On the constitutional complaints against the Federal Climate Change Act' (2021) Verfassungsblog <<https://verfassungsblog.de/the-constitution-speaks-in-the-future-tense/>> accessed 25 January 2022; Felix Ekardt, 'Climate revolution with weakness' (2021) Verfassungsblog <<https://verfassungsblog.de/climate-revolution-with-weaknesses/>> accessed 25 January 2022.

36 Critical on this matter: Hana Müllerová, 'Environment playing short-handed: Margin of appreciation in environmental jurisprudence of the European Court of Human Rights' (2014) 24 RECIEL 83.

37 *Klimaseniorinnen v Switzerland* App. no. 536000/20 (ECtHR, pending), see: <<https://bit.ly/3HF8DIY>> accessed 25 January 2022; the application is based on the decision of the Swiss Federal Supreme Court, Bundesgericht, 05.05.2020, 1C_37/2019; *Duarte Agostinho and Others v Portugal and Others* App. no. 39371/20 (ECtHR, pending), see: <<https://bit.ly/3sFvobS>> accessed 25 January 2022; the application is directed against 33 European states and was accepted by the ECtHR without prior exhaustion of domestic remedies; *Mex M. v Austria* (ECtHR, pending) at <<http://www.klimaklage.at/>> accessed 25 January 2022.

complaint had been dismissed.³⁸ A fate that so far has often been met by climate lawsuits, however.³⁹

3 The precautionary principle

The precautionary principle, a guiding principle of environmental law, is prominently featured in the Oslo Principles. Principle 1 states that ‘there is clear and convincing evidence’ of man-made climate change and its great risks for humanity, environment and the global economy and thus provides that

GHG emissions [must] be reduced to the extent, and at a pace, necessary to protect against the threats of climate change that can still be avoided; and [that] the level of reductions of GHG emissions required to achieve this, should be based on any credible and realistic worst-case scenario accepted by a substantial number of eminent climate change experts.⁴⁰

Further,

the measures required by the Precautionary Principle should be adopted without regard to the cost, unless the cost is completely disproportionate to the reduction in emissions that will be brought about by expending it.⁴¹

Reading this, it is clear that the Oslo Principles’ understanding of the precautionary principle slightly departs from the traditional understanding of this principle by emphasising well-established scientific knowledge about climate change. This is because the precautionary principle is generally understood to follow a ‘better safe than sorry’ approach⁴²: It enables policymakers to take preventive actions when scientific evidence relating to a risk to the environment or human health is not clear, but inaction could have serious consequences.⁴³ Hence, the Principle aims at striking a fair balance between conflicting interests in situations of scientific uncertainty.

38 VfGH 30 September 2020, G 144-145/2020-13, V 332/2020-13, the decision (in German) is available at <<https://bit.ly/3pzYabD>> accessed 25 January 2022; on this decision: Schulev-Steindl (n 21) 17 and the contribution by Julia Wallner in this book.

39 E.g., Case C-565/19 *P Armando Carvalho and Others v European Parliament and Council of the European Union* (2021) ECLI:EU:C:2021:252 (based on Case T-330/18, ECLI:EU:T:2019:324).

40 OP 1.

41 OP 1.

42 Gary E Marchant and Kenneth L Mossman, *Arbitrary and capricious: The precautionary principle in the European Union courts* (The AEI Press 2005) 1.

43 Didier Bourguignon, ‘The precautionary principle. Definitions, applications and governance’ (European Parliamentary Research Service 2015) <<https://bit.ly/36EtBLE>> accessed 28 March 2022.

Originally stemming from domestic legal orders⁴⁴, the precautionary principle has made its way into various international agreements and documents, a prominent example being the Rio Declaration.⁴⁵ Its Article 15 stipulates that

where there are threats of serious and irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.⁴⁶

Similarly, Article 3 (3) UNFCCC puts the Parties in charge of taking ‘precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects’. Although the Paris Agreement does not specifically address the precautionary principle, it does emphasise the importance of comprehensive mitigation measures in order to reduce the need for additional adaptation measures and the resulting costs (see, e.g., Article 7 (4)); thus addressing a central aspect of precaution in the context of climate change.

With the Maastricht treaty, the precautionary principle also became part of EU law:⁴⁷ Article 191 TFEU⁴⁸ stipulates that the Union’s environmental policy ‘shall be based on the precautionary principle’ without, however, defining its scope. A Commission Communication from 2000 clarifies that the principle is to be invoked

where scientific information is insufficient, inconclusive, or uncertain and where there are indications that the possible effects on the environment, or human, animal or plant health may be potentially dangerous and inconsistent with the chosen level of protection.⁴⁹

There is no universal definition of the precautionary principle; the conceptions differ, amongst other things, in the degree of scientific uncertainty leading to intervention by the authorities.⁵⁰

According to Article 4 (2) lit e TFEU, environmental protection is a shared competence of the EU and its Member States. As a cross-cutting issue, it must be considered not only in the areas mentioned in Articles 191-193 TFEU but in all policies and activities of the Union (Article 11 TFEU). The same is true for the precautionary principle, which is, according to the European Court of Justice (ECJ), a fundamental

44 Especially from German law (*Vorsorgeprinzip*), see Bourguignon (n 43) 4; Nicolas de Sadeleer, *Environmental law principles – from political slogans to legal rules* (2nd edn, Oxford University Press 2020) 137.

45 Philippe Sands and Jacqueline Peel, *Principles of international environmental law* (4th edn, Cambridge University Press 2018).

46 ‘Rio Declaration on Environment and Development’ UN Conference on Environment and Development (Rio de Janeiro, 3-14 June 1992) Un Doc. A/CONF.151/26 (Vol 1).

47 Kenisha Garnett and David J Parsons, ‘Multi-case review of the application of the precautionary principle in European Union law and case law’ (2017) 37 Risk Analysis 502.

48 Consolidated Version of the Treaty on the Functioning of the European Union (2012) OJ C 326/47 (TFEU).

49 Commission, ‘Communication from the Commission on the precautionary principle’ COM (2000) 1 final, 7.

50 Bourguignon (n 43) 7.

principle of European (environmental) law⁵¹ and the most relevant of the principles enshrined in Article 191 TFEU⁵². Its application is part of risk management,

when scientific uncertainty precludes a full assessment of the risk and when decision makers consider that the chosen level of environmental protection or of human, animal and plant health may be in jeopardy.⁵³

This means that EU institutions might take environmental action despite little scientific evidence for risks and that the principle might justify national restrictions to economic freedom by the Member States in the absence of scientific certainty about particular risks.⁵⁴ On the other hand, the precautionary principle also imposes duties on the EU to prevent such risks to human health and the environment,⁵⁵ and the Member States arguably have the same duties within the scope of application of EU law.⁵⁶ In any case: When applying the precautionary principle, the principle of proportionality must be respected – the potential damage, the possibilities for its mitigation, and the chosen measure, as well as the severity of the intervention, are to be weighed against each other.⁵⁷ Ultimately, this also implies a, rather strict, cost limit: as also anchored in Oslo Principle 1.b, the costs of precautionary measures must not be completely disproportionate to the benefit they bring about.⁵⁸

The precautionary principle is reflected in many EU secondary legislative acts, for example, in the Environmental Impact Assessment (EIA) Directive⁵⁹ and the Industrial Emissions Directive⁶⁰; it further shapes various areas of law, such as nature conservation law or the regulations on hazardous substances and genetically modi-

51 Case C-2/00 *Cartagena Protocol* (2002) ECR I-09713, ECLI:EU:C:2001:664, para 29.

52 Caroline Récey, 'Principles of European environmental law Article 191 (2) TFEU' in Erika Wagner and Maria Pree (eds), *European environmental law* (vol. 1, Trauner Verlag 2012) 77.

53 Communication from the Commission on the precautionary principle (n 49) 12.

54 Récey (n 52) 77.

55 De Sadeleer (n 44) 143; Christoph Sobotta, 'Recent applications of the precautionary principle in the jurisprudence of the CJEU – a new yardstick in EU environmental decision making?' (2020) 21 ERA Forum 723-735 <<https://doi.org/10.1007/s12027-020-00628-4>> accessed 14 February 2022; see recently, e.g., Case C-437/19 *État du Grand-duché de Luxembourg v L* (2021) ECLI:EU:C:2021:953, marginal 60; Case C-629/19 *Sappi Austria Produktions-GmbH & Co. KG, Wasserverband 'Region Gratkorn-Gratwein' v Landeshauptmann von Steiermark* (2020) ECLI:EU:C:2020:824, marginal 43.

56 See, e.g., Nicolas De Sadeleer, 'The precautionary principle as a device for greater environmental protection: Lessons from EC courts' (2009) 18 RECIEL 3-10 <<https://doi.org/10.1111/j.1467-9388.2009.00616.x>> accessed 14 February 2022.

57 Astrid Epiney, *Umweltrecht der Europäischen Union* (4th edn, Nomos 2019) 162.

58 See Communication from the Commission on the precautionary principle (n 49) 6.3.4.

59 Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment OJ L 2012/26 (Environmental Impact Assessment Directive).

60 Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control) OJ L 2010/334.

fied organisms.⁶¹ EU climate legislation too can be seen as an expression of the precautionary principle. Thus, the recitals of the ‘European Climate Law’⁶², adopted in 2021, state that the EU’s climate action and that of its Member States should be guided by the precautionary principle. The precautionary principle is also part of Austrian law and is a governing principle in numerous areas of environmental law,⁶³ such as chemicals law,⁶⁴ waste law⁶⁵ or air pollution control law regarding industrial installations⁶⁶. Although it is not anchored in the constitution itself, it is nevertheless binding for the legislator via higher-ranking EU law and thus, at least within the scope of application of Union law, also a yardstick for Austrian climate law. Consequently, the Austrian Strategy for Adaptation to Climate Change, for example, mentions the precautionary principle in its objectives, stating that it aims to provide a basis for decision-making regarding future climate impacts and to promote successful implementation.⁶⁷

Coming back to the Oslo Principles’ understanding of the precautionary principle and to fully grasp its meaning in EU law context, it seems essential to understand the difference between the precautionary principle and the preventive principle, also laid down in Article 191 TFEU, even though the ECJ usually mentions both principles in the same breath.⁶⁸ The precautionary principle aims to anticipate and prevent the emergence of environmental risk, whereas the preventive principle aims to eliminate existing hazards and impairments by taking appropriate measures before environmental damage occurs or becomes more serious.⁶⁹ With regard to climate change, both aspects are relevant. After all, climate change and the fact that it is man-made is now scientifically secured knowledge. Thus, the current 6th Assessment Report of the IPCC states: ‘It is unequivocal that human influence has warmed the atmosphere,

61 For more details see in selected areas: De Sadeleer (n 44) 184 (nature conservation), 192 (hazardous substances), 235 (GMOs).

62 Regulation (EU) 2021/1119 of the European Parliament and of the Council of 30 June 2021 establishing the framework for achieving climate neutrality (‘European Climate Law’) (2021) OJ L 243/1.

63 Gerhard Schnedl, *Umweltrecht* (facultas 2020) 64f.

64 § 1(1) Chemicals Act (*Chemikaliengesetz*), Federal Law Gazette I 1997/53, last change I 2020/140.

65 § 1(1) Waste Management Act (*Abfallwirtschaftsgesetz*), Federal Law Gazette I 2002/102, last change I 2021/200.

66 Pursuant to Section 77(3) of the Industrial Code (*Gewerbeordnung*), Federal Law Gazette 1994/194 (last change I 2020/65), the authority may only approve the operation of a plant if air pollutants are reduced ‘in accordance with the state of the art’, irrespective of any known hazards to life and health, in line with the precautionary principle.

67 Federal Ministry for Sustainability and Tourism, ‘The Austrian strategy for adaptation to climate change, Part 1 – context’ (Federal Ministry for Sustainability and Tourism 2017) 25, 65 <<https://bit.ly/3Ce4ASX>> accessed 25 January 2022.

68 Epiney (n 57) 159.

69 Christian Piska, ‘Article 191 AEUV’ in Thomas Jäger and Karl Stöger (eds), *EUV/AEUV* (Manz 2021) 31.

ocean and land. Widespread and rapid changes in the atmosphere, ocean, cryosphere and biosphere have occurred.⁷⁰ Nevertheless, there are still uncertainties, e.g., with regard to the extent and timing of the specific impacts. For example, the intensity and frequency of heavy precipitation and associated flooding, as well as of droughts, will depend on the actual extent of global warming reached in future.⁷¹ This is where the Oslo Principles set in when their authors state ‘that the precautionary principle does *not* come into play in relation to the question *whether* the climate is changing, nor whether this change is human induced.’⁷² Rather, as they note, the difficulty lies in the uncertainty about the remaining time frame and the actions needed to combat climate change. Only in this view the precautionary principle in the strict sense is relevant, while climate change itself is beyond dispute and thus subject to the preventive principle.

Anyway, when it comes to taking concrete measures, states are left with a certain margin of appreciation, according to the ECJ’s jurisprudence.⁷³ Nevertheless, the precautionary principle is a yardstick for assessing governments’ climate protection measures and has already been used in climate lawsuits to claim a lack of ambition in climate policy.⁷⁴ Such an approach can be particularly successful in combination with human rights arguments.⁷⁵ This is shown by the *Urgenda* case, where the Dutch Supreme Court, citing Article 2 and Article 8 ECHR in conjunction with the precautionary principle,⁷⁶ held that the government’s target to reduce GHG emissions by 20% by 2020 (compared to 1990 levels) did not comply with the precautionary principle. Rather, according to the scientific opinion expressed in the IPCC’s 4th Assessment Report and the consensus of the international community, a reduction of between 25 and 45% would be appropriate.⁷⁷ The court held that, in general, it would

70 IPCC, ‘Summary for policymakers (SPM)’ in Valérie Masson-Delmotte et al. (eds), *Climate change 2021: The physical science basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press, in Press) A.1., available at <www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Full_Report.pdf> accessed 25 January 2022.

71 See for the differences between 1.5 degrees and 2 degrees Celsius global warming: IPCC, SPM 2021 (n 70) C.2.

72 Expert Group on Global Climate Change Obligations (n 1) 48 (emphasis in the original).

73 De Sadeleer (n 44) 144; see also, e.g., Sabrina Röttger-Wirtz, ‘Case C-616/17 *Blaise and Others*: The precautionary principle and its role in judicial review – Glyphosate and the regulatory framework for pesticide’ (2020) 27 *Maastricht Journal of European and Comparative Law* 529-542 <<https://doi.org/10.1177/1023263X20949424>> accessed 10 February 2022.

74 See the cases *Carvalho* (n 39), *Klimaseniorinnen* (n 37) and *Urgenda* (n 20).

75 Felix Ekardt et al., ‘Paris Agreement, precautionary principle and human rights: Zero emissions in two decades?’ (2018) 10(8) *Sustainability* 7, <<https://doi.org/10.3390/su10082812>> accessed 10 February 2022.

76 *Urgenda* (n 20) para 5.3.2 with reference to *Tătar v Romania* App. no. 67021/01 (ECtHR 20 January 2001) para 120.

77 *Urgenda* (n 20) para 7.2.1., 7.2.7., 7.2.11.

be consistent with the precautionary principle if more far-reaching measures would be taken to reduce GHG emissions, rather than less far-reaching measures.⁷⁸

4 Reduction obligations for states and enterprises

4.1 Reduction obligations under the Oslo Principles

Based on the precautionary principle, the Oslo Principles set out the obligations that states and enterprises have to reduce greenhouse gases (GHG). Thereby, they distinguish between obligations that apply to both states and enterprises (Principles 6-12) and obligations that are binding only to states (Principles 13-26) or only to enterprises (Principles 27-30) – hereinafter, the focus is on state-related obligations. For individuals, the Oslo Principles do not set emission reduction commitments, especially as it is almost impossible to enforce such commitments against individuals.⁷⁹

Principle 6 requires states and enterprises to take measures to ensure that the global average surface temperature increase never exceeds pre-industrial temperature by more than 2 degrees Celsius. The 2-degree target has now also found expression in the Paris Agreement. Article 2 (1) lit a states that the increase in the global average temperature should be kept well below 2 degrees Celsius compared to the pre-industrial level (1880-1920), and efforts should even be made to limit global warming to 1.5 degrees Celsius. In the second half of the twenty-first century, CO₂ neutrality is targeted, meaning that the global net emission of GHG is to be reduced to zero.

The permissible quantum of GHG emissions that a state or enterprise may produce in a specific year must be determined in accordance with the 2-degree target (Principle 6 lit b OP).⁸⁰ In this context, the Oslo Principles do not determine a single state's or the global carbon budget; instead, they limit themselves to outline necessary emissions reductions in abstract terms and highlight means to accomplish them. Nevertheless, a calculation of the global and Austrian carbon budget already exists – it was carried out by Lukas Meyer and Karl Steininger⁸¹ within the Wegener Center for Climate and Global Change at the University of Graz: The scientists referred to the 2-degree target as a starting point and, on this basis, first calculated the global and then the Austrian carbon budget until 2050, when climate neutrality should be the reality. Based on a per capita approach, Austria's carbon budget for the period 2017-

78 Ibid para 7.2.10.

79 Expert Group on Global Climate Change Obligations (n 1) 65.

80 On the importance of the 2-degree limit see Will Frank, 'Anmerkungen zu den "Oslo Principles on Global Climate Change Obligations"' (2015) NVwZ 1499, 1500ff.

81 Lukas Meyer and Karl Steininger, *Das Treibhausgas-Budget für Österreich* (Wegener Center Verlag 2017) <<https://wegcwww.uni-graz.at/publ/wegcreports/2017/WCV-WissBer-Nr72-LMeyerKSteininger-Okt2017.pdf>> accessed 1 December 2021.

2050 amounts to about 1,000 million tons of CO₂ equivalent. In comparison, 1,924 million tons of CO₂ equivalent were emitted in Austria in the years 1990-2015, that is, in only 25 years – if this emission level is maintained – Austria’s carbon budget will already be exhausted in 2030.⁸² This, once again, highlights the need for swift and decisive action as envisaged in the Oslo Principles.

Principles 7-12 specify how and by which measures emission reductions are to be achieved. The choice of specific emission reductions is left to the discretion of the states, provided the total permissible quantum is not exceeded. Principle 7 lists examples of relevant measures: Elimination of excessive power consumption, promotion of measures to reduce the need for consuming energy, elimination of broad fossil-fuel subsidies, including tax exemptions for certain industries.

According to the Oslo Principles, states and enterprises are not only required to reduce their emissions as much as possible without significant additional cost (Principle 7), they also have to refrain from starting any activities that entail excessive GHG emissions, such as the erection of coal-fired power plants (Principle 8). Further, the Principles clarify that all countries must implement reduction measures; however, there is an exemption for least developed countries – they only have to take such measures if financial and technical means are provided to them (Principle 9).

Remarkably, the Oslo Principles are conceptualised as the highest-ranking climate protection ‘law’ – according to Principle 12, compliance with the Principles is required even in case of contradictions with national or international law. However, this higher rank only applies if the respective national or international law is not suitable for achieving the 2-degree target. As mentioned at the beginning, an academic initiative, of course, cannot create binding law – the Oslo Principles themselves do not constitute a legal act and therefore do not take precedence over existing law.

4.2 Reduction obligations in EU Law

In line with the Oslo Principles, the European Union committed itself to the 2-degree target by becoming a party to the Paris Agreement. The fight against climate change is also explicitly one of the objectives of EU environmental policy, set out in Article 191(1) TFEU. The EU’s climate policy essentially pursues three strategies: reducing GHG emissions, increasing energy efficiency and increasing the share of renewable energies.⁸³ On the basis of Article 192, Article 114 or Article 194 TFEU, the Europe-

82 Meyer and Steininger (n 81) 5.

83 For detailed information on EU climate law and policy, see for example Florian Stangl and Romain Mauger, ‘EU climate policy’ in Edwin Woerdman, Martha Roggenkamp and Marijn Holwerda (eds), *Essential EU climate law* (2nd edn, Edward Elgar Publishing Ltd 2021) ch 2; Stuart Bell et al., *Environmental law* (9th edn, Oxford University Press 2017) 528, 548; Sanja Bogojevic, ‘Climate change law and policy in the European Union’ in Cinnamon P Carlarne et

an Parliament and the Council are also empowered to adopt concrete climate protection measures. The EU has made use of this option and adopted a wide range of secondary legislation on climate protection. Before presenting the EU's concrete climate protection measures, their climate targets, in particular their targets for reducing GHG emissions, should be outlined.

4.2.1 EU climate targets

The European Union's climate targets have a long tradition. In contrast to the Paris Agreement with its 2-degree target, the EU imposed concrete reduction targets on its own very early on. First, there was the target of reducing GHG emissions by 8% up to 2012 compared to 1990 levels by 2012, as set out in the 6th Environmental Action Programme of July 2002⁸⁴ and then in the Kyoto Protocol.⁸⁵ According to calculations by the European Environment Agency, total emissions in the former 15 EU Member States fell by an average of 11.7% compared with 1990 levels during the period from 2008 to 2012. The EU thus clearly exceeded its eight-percent target.⁸⁶

In March 2007, the European Council agreed to set legally binding targets for the reduction of GHG emissions for the period up to 2020.⁸⁷ It was decided to reduce GHG emissions by 20% compared to 1990 levels. Furthermore, it was determined to increase energy efficiency by 20% and to increase the share of renewable energies in the EU's total energy consumption to 20%. In early 2008, the Commission finally developed a blueprint for achieving these so-called 20-20-20 targets.⁸⁸ The EU has significantly exceeded its target of reducing GHG emissions by 20% up to 2020 compared to 1990 levels. In 2020, EU-27 GHG emissions, including international aviation, were 31% below 1990 levels.⁸⁹

al. (eds), *The Oxford handbook of international climate change law* (Oxford University Press 2016) 670; David Langlet and Said Mahmoudi, *EU environmental law and policy* (Oxford University Press 2016) 253.

84 Decision 1600/2002/EC of the European Parliament and of the Council of 22 July 2002 laying down the Sixth Community Environment Action Programme (2002) OJ L 242/1, Article 5.

85 Council Decision 2002/358/EC of 25 April 2002 concerning the approval, on behalf of the European Community, of the Kyoto Protocol to the United Nations Framework Convention on Climate Change and the joint fulfilment of commitments thereunder (2002) OJ L 130/1.

86 Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection, 'First Commitment Period (2008 to 2012)' <<https://bit.ly/31RjeRM>> accessed 29 March 2022.

87 This was based on the Commission Communication, 'Limiting global climate change to 2 degrees Celsius – the way ahead for 2020 and beyond' COM (2007) 2 final.

88 Commission Communication, '20 20 by 2020. Europe's climate change opportunity' COM (2008) 30 final.

89 Commission's report, 'Speeding up European climate action towards a green, fair and prosperous future. EU Climate Action Progress Report 2021' COM (2021) 950 final.

In October 2014, the European Council adopted the Framework for Climate and Energy Policy up to 2030.⁹⁰ In this process, the 20-20-20 targets were increased. Thus, GHG emissions are to be reduced by at least 40% (compared to 1990 levels) by 2030. Further targets by 2030 are to increase the share of renewable energies to at least 27% and to increase energy efficiency by at least 27%. The new climate targets were often considered too unambitious, and the European Parliament also repeatedly called for more ambitious targets.⁹¹ In 2018, the targets for renewable energies and energy efficiency were then raised to 32% and 32.5%, respectively, through the recast of the Renewable Energy Directive⁹² and an amendment to the Energy Efficiency Directive.⁹³ Finally, the Governance Regulation,⁹⁴ adopted at the end of 2018, aims to ensure that the Union's 2030 energy and climate targets and long-term commitments are met in line with the Paris Agreement. The central element of the regulation is the development of National Energy and Climate Plans (NECPs) by the Member States.

In 2019, several important milestones in EU climate policy were set. First, in November, the European Parliament declared a climate and environmental emergency, reaffirming the urgency of tackling climate change.⁹⁵ In December, the Commission presented the European Green Deal⁹⁶ aimed at launching the transition to a green

90 This was based on the Commission Communication, 'A policy framework for climate and energy in the period from 2020 to 2030' COM (2014) 15 final.

91 For example, Judith Fitz and Daniel Ennöckl, 'Klimaschutzrecht' in Daniel Ennöckl, Nicolas Raschauer and Wolfgang Wessely (eds), *Handbuch Umweltrecht* (3rd edn, facultas 2019) 757, 771.

92 Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources (recast) (2018) OJ L 328/82 (RED II).

93 Directive (EU) 2018/2002 of the European Parliament and of the Council of 11 December 2018 amending Directive 2012/27/EU on energy efficiency (2018) OJ L 328/210.

94 Regulation (EU) 2018/1999 of the European Parliament and of the Council of 11 December 2018 on the Governance of the Energy Union and Climate Action (2018) OJ L 328/1; for more details see for example Sabine Schlacke and Michele Knodt, 'Das Governance-System für die Europäische Energieunion und für den Klimaschutz' (2019) ZUR 404; Hans-Georg Dederer, 'Die Governance-Verordnung der Union. Klimapolitische Steuerung der EU-Mitgliedstaaten in Richtung Nachhaltigkeit' (2021) NR 25.

95 European Parliament Resolution of 28 November 2019 on the climate and environment emergency, 2019/2930(RSP).

96 Commission's communication, 'The European Green Deal' COM (2019) 640 final; for more details see for example Isabel Staudinger, 'The European Green Deal – what is in a name?' in Eva Schulev-Steindl, Oliver C Ruppel and Ferdinand Kerschner (eds), *Climate law – current opportunities and challenges. Essays from the official opening of ClimLaw: Graz* (Eleven International Publishing 2021) 115; Sarah Wolf et al., 'The European Green Deal – more than climate neutrality' (2021) 2 *Intereconomics* 99; Alicja Sikora, 'European Green Deal – legal and financial challenges of the climate change' (2021) 21 *ERA Forum* 681; Marco Siddi, 'The European Green Deal: Assessing its current state and future implementation' (2020) FIIA Working Paper 114; Ruven C Fleming and Romain Mauger, 'Green and just? An update on the "European Green Deal"' (2021) 18 *Journal for European Environmental & Planning Law*

economy. In addition, climate protection is to be strengthened at the European level and CO₂ neutrality to be achieved by 2050. Specifically, net emissions of GHG are to be reduced to zero by 2050. The Green Deal furthermore provides for a tightening of the EU's climate targets for 2030. In December 2020, the European Council finally agreed to reduce GHG emissions by at least 55% by 2030 compared to 1990 levels.⁹⁷

The new political climate targets outlined previously were made legally binding at the end of June 2021 with the 'European Climate Law'.⁹⁸ This European Climate Law – in legal terms it is a regulation within the meaning of Article 288 (2) TFEU – raises the EU's GHG reduction target from 40% to 55% by 2030 and commits the EU to climate neutrality by 2050. The Law also includes a process for setting a climate target for 2040. These binding climate targets – they are addressed to the institutions of the Union and the Member States – are intended to achieve the 2-degree target set out in the Oslo Principles and in the Paris Agreement. The Commission presented concrete proposals for implementing the EU's 2030 climate target in July 2021 with the climate legislative package 'Fit for 55'.⁹⁹

4.2.2 EU climate protection measures

Based on the EU climate strategy and the climate targets outlined above, the EU's climate protection measures can be divided into the already familiar three areas:

-
- 164-180. The Green Deal builds on the Commission's Communication, 'A clean planet for all. A European strategic long-term vision for a prosperous, modern, competitive and climate neutral economy' COM (2018) 773 final.
- 97 The Council based this on the Commission's communication, 'Stepping up Europe's 2030 climate ambition. Investing in a climate-neutral future for the benefit of our people' COM (2020) 562 final.
- 98 European climate law (n 62); for more details see for example Tobias Schuelken and Benedikt Sichla, 'Das Europäische Klimagesetz – Inhalt, Rechtsfragen und Ausblick' (2021) UPR 1; Florian Stangl, 'Zur Genese des Europäischen Klimagesetzes. Wegbereiter für die Klimaneutralität 2050' (2021) NR 14; Sabine Schlacke, Miriam Köster and Eva-Maria Thierjung, 'Das „Europäische Klimagesetz“ und seine Konsequenzen' (2021) EuZW 620; Sabine Schlacke et al., 'Implementing the EU climate law via the 'Fit for 55' package' (2022) 1 Oxford Open Energy 1; Giorgio Monti, 'The European climate law: Making the social market economy fit for 55?' (2021) 58(5) Common Market Law Review 1321; Beatriz Pérez de las Heras, 'European climate law(s): Assessing the legal path to climate neutrality' (2021) 21(2) Romanian Journal of European Affairs 19; Carlos Abreu Amorim and Ana Cardoso, 'European climate law – real changes or postponed future?' (2021) 7(1) UNIO – EU Law Journal 138.
- 99 Commission's communication, 'Fit for 55: Delivering the EU's 2030 climate target on the way to climate neutrality' COM (2021) 550 final; see for example Walter Frenz, 'EU-Klimapakete Fit for 55' (2021) UPR 338; Walter Frenz, 'Nachhaltige Wirtschaftswende nach dem EU-Klimapakete "Fit for 55"' (2021) EWS 241; Schlacke et al. (n 98); Monti (n 98).

Reducing GHG emissions, increasing the share of renewable energies and increasing energy efficiency.¹⁰⁰ They will be briefly described in the following.

4.2.2.1 Legal framework for reducing GHG emissions

The main instrument for reducing GHG emissions in the European Union is the EU Emissions Trading System (ETS), which became operational in 2005.¹⁰¹ The EU ETS, the flagship of European climate policy, created the world's first and largest carbon market. The system covers around 40% of GHG emissions in the EU.¹⁰² The Emissions Trading System works according to the principle of 'cap and trade'.¹⁰³ First, an upper limit is set for the emission of certain GHGs ('cap'). In order to be allowed to emit these GHGs, the installations obliged to participate in the Emissions Trading System must have the corresponding certificates, which they have previously received free of charge or for a fee (e.g., through auctioning). Emission certificates can be freely traded on the market ('trade'). The formation of the price is determined by the market. The higher the price, the greater the financial incentive to reduce GHG emissions. But it is precisely this circumstance that has been the major problem of the European Emissions Trading System in recent years. Due to a massive oversupply of certificates on the market, the price for one ton of CO₂ fell to below 3 euros. This, of course, created little or no incentive to reduce emissions, so that for a long time, the EU ETS was unable to achieve the desired economic effect. Thus, in order to increase the price, the EU removed emission certificates from the market (so-called backloading).¹⁰⁴ In 2018, the certificates withdrawn from the market were transferred to the Market Stability Reserve (MSR), which has been set up in the meantime¹⁰⁵ and allows the number of certificates available each year to be reduced or increased as required.¹⁰⁶ This measure was effective: The price for one ton of CO₂

100 See for example Alina Lengauer, 'Die Energiepolitik der Europäischen Union im Angesicht des Klimawandels. Ein Überblick über Kompetenzen, Maßnahmen und Problemfelder' (2020) ZfRV 196, 198; Fitz and Ennöckl (n 91) 771.

101 See for example Edwin Woerdman, 'EU emissions trading system' in Edwin Woerdman, Martha Roggenkamp and Marijn Holwerda (eds), *Essential EU climate law* (2nd edn, Edward Elgar Publishing Ltd 2021) ch 3.

102 European Commission, 'EU emissions trading system (EU ETS)' <https://ec.europa.eu/clima/eu-action/eu-emissions-trading-system-eu-ets_en> accessed 1 December 2021.

103 See for example Schnedl (n 63) 136.

104 Commission Regulation (EU) No 176/2014 of 25 February 2014 amending Regulation (EU) No 1031/2010 in particular to determine the volumes of greenhouse gas emission allowances to be auctioned in 2013-20 (2014) OJ L 56/11.

105 Decision (EU) 2015/1814 of the European Parliament and of the Council of 6 October 2015 concerning the establishment and operation of a market stability reserve for the Union greenhouse gas emission trading scheme (2015) OJ L 264/1.

106 Poland's lawsuit against the Market Stability Reserve was dismissed by the ECJ; Case C-5/16 *Poland v Parliament and Council* (2018) ECLI:EU:C:2018:483.

has risen continuously in recent years and is currently (15 December 2021) over 80 euros.¹⁰⁷

The legal framework of the EU ETS is set by the Emissions Trading Directive 2003/87/EC.¹⁰⁸ The system applies to the energy and industry sectors (around 11,000 – mostly particularly energy-intensive – installations are currently subject to emissions trading throughout the EU¹⁰⁹) and, since 2012, also to aviation¹¹⁰ (only flights between airports in the European Union are covered). The EU ETS is now in its fourth trading period (2021 - 2030).¹¹¹ It supports the EU's 2030 emissions reduction target (-40% compared to 1990 levels). To reach this target, sectors covered by the EU ETS will have to reduce their emissions by 43% compared to 2005 levels. In order to increase the pace of emission reductions, the total number of emission certificates will be reduced by 2.2% per year from 2021. Auctioning remains the central allocation mechanism. However, sectors with a significant risk of migration to countries outside the EU ('carbon leakage') will continue to receive limited free allowances. In view of the legally binding reduction target of 55% for 2030 set out in the European Climate Law 2021, a further adjustment of the EU ETS is necessary. The EU has already made concrete proposals in this regard within the framework of the 'Fit for 55' legislative package.¹¹² For example, the EU ETS is to be expanded to include emissions from shipping. In addition, the Commission is striving for a separate new emissions trading system for road transport and the building sector, that is, for fuels and combustibles in these sectors.

For sectors not included in the present EU ETS, such as transport, buildings, agriculture, waste or small industrial installations (the so-called non-ETS sectors), the emission reduction targets of the EU are distributed among the Member States.¹¹³ As

107 <<https://www.wallstreet-online.de/rohstoffe/kohlendioxid-preis>> accessed 16 December 2021.

108 Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community (2003) OJ L 275/32.

109 Daniel Ennöckl, 'Wie kann das Recht das Klima schützen?' (2020) ÖJZ 302, 304.

110 Directive 2008/101/EC of the European Parliament and of the Council of 19 November 2008 amending Directive 2003/87/EC so as to include aviation activities in the scheme for greenhouse gas emission allowance trading within the Community (2009) OJ L 8/3.

111 The basis for this is the Directive (EU) 2018/410 of the European Parliament and of the Council of 14 March 2018 amending Directive 2003/87/EC to enhance cost-effective emission reductions and low-carbon investments, and Decision (EU) 2015/1814 (2018) OJ L 76/3.

112 Commission, 'Proposal for a Directive of the European Parliament and of the Council amending Directive 2003/87/EC establishing a system for greenhouse gas emission allowance trading within the Union, Decision (EU) 2015/1814 concerning the establishment and operation of a market stability reserve for the Union greenhouse gas emission trading scheme and Regulation (EU) 2015/757' COM(2021) 551 final.

113 See for example Lorenzo Squintani, 'Regulation of emissions from non-ETS sectors' in Edwin Woerdman, Martha Roggenkamp and Marijn Holwerda (eds), *Essential EU climate law* (2nd edn, Edward Elgar Publishing Ltd 2021) ch 4.

a first step, the Effort Sharing Decision of 2009¹¹⁴ set national emission reduction targets for 2020 compared to 2005. Austria had to reduce its GHG emissions in the non-ETS sectors by 16%.¹¹⁵ The Effort Sharing Regulation 2018¹¹⁶ (also called Climate Action Regulation), now in force, sets individually binding targets for the Member States up to 2030. In the EU as a whole, a 30% reduction of GHG emissions in the non-ETS sectors is to be achieved. The targets of the Member States range from 0% (Bulgaria) to 40% (Sweden). Austria's target for the reduction of GHG emissions in the non-ETS sectors lies at 36%.¹¹⁷ In view of the legally binding reduction target of 55% for 2030 set out in the European Climate Law 2021, an adjustment of the non-ETS sector will be necessary, too. Thus, there is already a concrete proposal for a 40% reduction within the framework of the 'Fit for 55' legislative package.¹¹⁸

In line with the Paris Agreement, the European Union has determined that all relevant economic sectors must contribute to the achievement of climate targets, including the sector 'Land Use, Land-Use Change and Forestry' (LULUCF). LULUCF exists as a separate sector alongside the two other major climate protection instruments of EU climate policy, namely the Emissions Trading Directive for industry and energy production and the Effort Sharing Regulation for the transport, buildings, agricultural and waste sectors. The legal framework for land use is found in the LULUCF Regulation (EU) 2018/841.¹¹⁹ The regulation provides a binding obligation for each Member State to ensure that GHG emissions from land use, land use change or forestry that occur between 2021 and 2030 are offset by at least an equivalent removal of CO₂ from the atmosphere (so-called GHG sinks) ('no debit' rule). As a result, this sector is therefore emission-free. Land use and forestry involve the use of soils, trees, plants, biomass, and wood, with forests and plant populations being the most

114 Decision No 406/2009/EC of the European Parliament and of the Council of 23 April 2009 on the effort of Member States to reduce their greenhouse gas emissions to meet the Community's greenhouse gas emission reduction commitments up to 2020 (2009) OJ L 140/136.

115 Annex II to the EU Effort Sharing Decision No 406/2009/EC.

116 Regulation (EU) 2018/842 of the European Parliament and of the Council of 30 May 2018 on binding annual greenhouse gas emission reductions by Member States from 2021 to 2030 contributing to climate action to meet commitments under the Paris Agreement and amending Regulation (EU) No 525/2013 (2018) OJ L 156/26.

117 Annex I to the EU Effort Sharing Regulation (EU) 2018/842.

118 Commission, 'Proposal for a Regulation of the European Parliament and of the Council amending Regulation (EU) 2018/842 on binding annual greenhouse gas emission reductions by Member States from 2021 to 2030 contributing to climate action to meet commitments under the Paris Agreement' COM (2021) 555 final.

119 Regulation (EU) 2018/841 of the European Parliament and of the Council of 30 May 2018 on the inclusion of greenhouse gas emissions and removals from land use, land use change and forestry in the 2030 climate and energy framework (2018) OJ L 156/1.

important CO₂ sinks. In particular, forests in the EU absorb the equivalent of almost 10% of total EU greenhouse gas emissions each year.¹²⁰

4.2.2.2 Legal framework for the expansion of renewable energies and the increase of energy efficiency

Three quarters of GHG emissions in the EU are caused by production and consumption of energy.¹²¹ Saving energy through energy efficiency measures and the massive promotion of renewable energies is therefore central to achieving the climate targets for 2030 and climate neutrality by 2050 – objectives that are also those of the Union’s energy policy under Article 194 (1) TFEU.

The legal framework for the expansion of renewable energies across all sectors of the EU economy (electricity, heating and cooling as well as transport) is the RED II¹²², which replaced the previous Directive 2009/28/EC (RED I) at the end of 2018. The directive is part of the winter package ‘Clean Energy for all Europeans’¹²³, which came into force in 2018 and 2019.¹²⁴ Building on the 20% target for 2020, it set a new binding target for renewables in the EU for 2030 of at least 32%, with a clause for a possible upward revision by 2023. In contrast to the previous RED I, Member States are no longer assigned separate national reduction targets. Instead, Member States independently determine their national contributions to the overall binding Union target within the framework of their National Energy and Climate Plans, which they must prepare on the basis of the Governance Regulation (EU)

120 European Commission, ‘Land use and forestry regulation for 2021-2030’ <https://ec.europa.eu/clima/eu-action/forests-and-agriculture/land-use-and-forestry-regulation-2021-2030_en> accessed 1 December 2021.

121 European Council, Council of the European Union, ‘Latest EU policy actions on climate change’ <www.consilium.europa.eu/en/policies/climate-change/eu-climate-action/> accessed 1 December 2021.

122 Directive (EU) 2018/2001 (n 92).

123 Commission’s communication, ‘Energy for all Europeans’ COM (2016) 860 final; for more details see for example Fabian Pause, ‘“Saubere Energie für alle Europäer” – Was bringt das Legislativpaket der EU?’ (2019) ZUR 387; Alexander Proelß, ‘Europäische Energieunion und internationaler Klimaschutz: Konkurrenz oder Konvergenz?’ (2019) EurUP 72, 78ff; Lanka Horstink, Julia M Wittmayer and Kiat Ng, ‘Pluralising the European energy landscape: Collective renewable energy prosumers and the EU’s clean energy vision’ (2021) 153 Energy Policy <<https://doi.org/10.1016/j.enpol.2021.112262>> accessed 14 February 2022; Joshua Roberts, ‘Power to the people? Implications of the clean energy package for the role of community ownership in Europe’s energy transition’ (2020) 29 RECIEL 232.

124 European Commission, ‘Clean energy for all Europeans package’ <<https://bit.ly/3IHIdHe>> accessed 29 March 2022.

2018/1999.¹²⁵ As part of the climate legislative package ‘Fit for 55’, the EU presented a proposal to amend the Renewable Energies Directive in July 2021.¹²⁶ The Commission wants to increase the expansion of renewable energies to 40% by 2030.

The European Union’s most important piece of legislation to increase energy efficiency is the Energy Efficiency Directive 2012/27/EU.¹²⁷ While the EU originally committed to reducing energy efficiency in energy consumption by 20% up to 2020, the amending Directive (EU) 2018/2002¹²⁸, which is also part of the winter package ‘Clean Energy for all Europeans’, aims to reduce primary energy consumption in the Union by 32.5% up to 2030. There is a possibility to revise this target upwards for 2023. Similar to renewable energies, the Member States have to determine their national contributions to achieving the overall European target for energy efficiency. This is done through their NECPs, which are integrated into the monitoring process of the Governance Regulation (EU) 2018/1999¹²⁹. In July 2021, the EU proposed a recast of the Energy Efficiency Directive with the climate legislation package ‘Fit for 55’.¹³⁰ The energy efficiency target is to be increased to 36% to 37%.

The Energy Efficiency Directive is flanked by a number of other energy efficiency measures, for example, in the areas of buildings¹³¹, products¹³² and road transport¹³³. In July 2020, the Commission presented an EU Strategy for Energy System Integra-

125 For further information, see for example Olivia Woolley, ‘Renewable energy consumption’ in Edwin Woerdman, Martha Roggenkamp and Marijn Holwerda (eds), *Essential EU climate law* (2nd edn, Edward Elgar Publishing Ltd 2021) ch 5.

126 Commission, ‘Proposal for a Directive of the European Parliament and of the Council amending Directive (EU) 2018/2001 of the European Parliament and of the Council, Regulation (EU) 2018/1999 of the European Parliament and of the Council and Directive 98/70/EC of the European Parliament and of the Council as regards the promotion of energy from renewable sources, and repealing Council Directive (EU) 2015/652’ COM (2021) 557 final <https://ec.europa.eu/info/news/commission-presents-renewable-energy-directive-revision-2021-jul-14_en> accessed 1 December 2021.

127 Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency (2012) OJ L 315/1.

128 Directive (EU) 2018/2002 (n 93).

129 For further information, see for example Hans Vedder, ‘Energy efficiency’ in Edwin Woerdman, Martha Roggenkamp and Marijn Holwerda (eds), *Essential EU climate law* (2nd edn, Edward Elgar Publishing Ltd 2021) ch 6.

130 Commission, ‘Proposal for a Directive of the European Parliament and of the Council on energy efficiency (recast)’ COM (2021) 558 final.

131 Directive 2010/31/EU of the European Parliament and of the Council of 19 May 2010 on the energy performance of buildings (2010) OJ L 153/13. Under the second part of the ‘Fit for 55’ package, the Commission has recently presented a proposal for a new buildings directive, see ‘Proposal for a Directive of the European Parliament and of the Council on the energy performance of buildings (recast)’ COM (2021) 802 final.

132 Directive 2009/125/EC of the European Parliament and of the Council of 21 October 2009 establishing a framework for the setting of ecodesign requirements for energy-related products (2009) OJ L 285/10.

133 Directive 2009/33/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of clean and energy-efficient road transport vehicles (2009) OJ L 120/5.

tion as a framework for a European energy transition.¹³⁴ Energy system integration, i.e., the coordinated planning and operation of the energy system ‘as a whole’, across multiple energy carriers, infrastructures, and consumption sectors, is considered necessary to achieve the European Green Deal target of climate neutrality by 2050. In September 2021, the Commission published (non-binding) guidelines on energy efficiency,¹³⁵ the focus being on the principle of ‘Energy Efficiency First (EE1st)’.

4.2.3 EU climate financing

The Oslo Principles specify in Principle 9 that developed and developing countries must provide financial and technical resources to enable least developed countries for taking action on greenhouse gas emissions reductions. The European Union meets this commitment to financial support, also enshrined in Article 9 of the Paris Agreement. For example, the EU has pledged at least 14 billion euros (or an average of 2 billion euros per year) to support climate protection measures in developing countries over the period 2014–2020. Thus, in 2019, the European Commission supported developing countries with 2.5 billion euros. In addition, the European Investment Bank, being the largest contributor to public climate finance, has earmarked 3.1 billion euros for climate protection measures in developing countries in 2019. Among other things, the bank finances energy efficiency and renewable energy projects in Africa and other regions. Overall, the European Union, its Member States and the European Investment Bank are the largest donor contributor of public climate finance in the world. The support for developing countries amounted to 23.2 billion euros in 2019.¹³⁶ Nevertheless, the EU should increase its funding for climate protection measures abroad in the near future. At the UN Climate Change Conference in Copenhagen in 2009, the industrialised countries promised to mobilise a total of 100 billion US dollars per year in climate financing (climate protection investments in developing countries) by 2020. However, according to recent reports, this financial promise has not been kept.¹³⁷

In addition to providing financial assistance to developing countries in the area of climate protection, the EU goes one step further in climate financing: it strives for

134 Commission’s communication ‘Powering a climate-neutral economy: An EU Strategy for Energy System Integration’ COM (2020) 299 final.

135 Commission Recommendation (EU) 2021/1749 of 28 September 2021 on Energy Efficiency First: From principles to practice – Guidelines and examples for its implementation in decision-making in the energy sector and beyond (2021) OJ L 350/9.

136 European Commission, ‘International climate finance’ <https://ec.europa.eu/clima/eu-action/international-action-climate-change/international-climate-finance_en> accessed 1 December 2021.

137 Klimareporter, ‘Reiche Länder haben 100-Milliarden-Versprechen gebrochen’ <<https://bit.ly/31OaR9B>> accessed 29 March 2022.

sustainable financing.¹³⁸ In this context, the EU has launched an ambitious Action Plan on Financing Sustainable Growth,¹³⁹ comprising measures such as: standards and labels for environmentally friendly financial products, promotion of investments in sustainable projects, development of sustainability benchmarks. The EU also supports developing countries in improving their conditions for mobilising low-carbon finance.¹⁴⁰ In October 2019, the EU, together with the competent authorities of Argentina, Canada, Chile, China, India, Kenya and Morocco, launched the International Platform on Sustainable Finance,¹⁴¹ aimed at improving the mobilisation of private capital for environmentally sustainable investments.¹⁴²

4.3 Reduction obligations in Austrian law

As a Member State of the European Union and a signatory to the Paris Agreement, Austria has incorporated various measures to reduce GHG emissions into its legal system. The aim of Austria's climate protection measures is to limit global warming compared to pre-industrial levels to well below 2 degrees Celsius, if possible to below 1.5 degrees Celsius. Austria's climate policy is thus in line with Principle 6 of the Oslo Principles. With the Climate and Energy Strategy '#mission2030'¹⁴³ adopted by the Austrian Federal Government in 2018, Austria has also explicitly committed itself at the political level to the international climate targets and to an active climate protection and energy policy. At the legal level, the Republic of Austria is committed to the principles of sustainability and comprehensive environmental protection in a special Federal Constitutional Act.¹⁴⁴ Climate protection measures are not explicitly mentioned in this Act. Nevertheless, the commitment to comprehensive

138 European Commission, 'Overview of sustainable finance' <https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance/overview-sustainable-finance_en> accessed 1 December 2021.

139 Commission's communication, 'Action Plan: Financing Sustainable Growth' COM (2018) 97 final.

140 European Commission, 'International climate finance' <https://ec.europa.eu/clima/eu-action/international-action-climate-change/international-climate-finance_en> accessed 1 December 2021.

141 European Commission, 'International Platform on Sustainable Finance' <<https://bit.ly/3JQU1sa>> accessed 29 March 2021.

142 European Commission, 'International climate finance' <https://ec.europa.eu/clima/eu-action/international-action-climate-change/international-climate-finance_en> accessed 1 December 2021.

143 Available at <<https://bit.ly/36Uua3J>> accessed 28 March 2022.

144 Federal Constitutional Act on Sustainability, Animal Protection, Comprehensive Environmental Protection, on Water and Food Security as well as Research (*Bundesverfassungsgesetz über die Nachhaltigkeit, den Tierschutz, den umfassenden Umweltschutz, die Sicherstellung der Wasser- und Lebensmittelversorgung und die Forschung*), Federal Law Gazette I 2013/111, last change I 2019/82.

environmental protection also includes climate protection measures, especially since specific environmental protection measures are only mentioned by way of example in the wording of the law. Explicit commitments to climate protection are, however, provided for in the constitutions of some Austrian Federal States.¹⁴⁵

4.3.1 Austrian climate targets and their legal basis

The Kyoto Protocol, which came into force in 2005, set binding climate targets for Austria for the first time. The European Commission's burden-sharing decision¹⁴⁶ obliged Austria to reduce its GHG emissions by 13% up to 2012 compared to the reference year 1990. However, there was no binding national legal basis for Austria's 2012 Kyoto climate target. Ultimately, Austria was able to meet the Kyoto targets only by purchasing credits from emission-reducing measures abroad; GHG emissions themselves were even higher than the 1990 level.¹⁴⁷

From 2013 onwards, Austria's climate targets must be viewed differently: Until 2012, there was a national target for all GHG emissions, but since then, a distinction has been made at the European level between emissions under the Emissions Trading System (ETS) and emissions in the non-ETS sector, which is also reflected in Austrian law. For GHG emissions subject to the EU ETS, there is only an EU-wide reduction target of -21% by 2020 and -43% by 2030.¹⁴⁸ These reduction obligations result from the EU Emissions Trading Directive¹⁴⁹, which was implemented in Austria by the Emission Certificate Act¹⁵⁰ with the fourth trading period running from 2021 until 2030.

For GHGs not covered by the EU ETS, there are individual binding targets for each EU Member State. According to the EU Effort Sharing Decision 2009¹⁵¹, Austria had to reduce its GHG emissions in the non-ETS sectors by 16% up to 2020

145 For more details see for example Schnedl (n 63) 104ff.

146 Commission Decision 2006/944/EC of 14 December 2006 determining the respective emission levels allocated to the Community and each of its Member States under the Kyoto Protocol pursuant to Council Decision 2002/358/EC (2006) OJ L 358/87.

147 Schnedl (n 63) 63, 79.

148 Compared to 2005; European Commission, 'Climate action' <https://ec.europa.eu/clima/eu-action/eu-emissions-trading-system-eu-ets/revision-phase-4-2021-2030_en> accessed 1 December 2021.

149 Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community (2003) OJ L 275/ 32.

150 *Emissionszertifikatengesetz* 2011 (EZG 2011), Federal Law Gazette I 2011/118, last change I 2020/142.

151 Decision No 406/2009/EC of the European Parliament and of the Council of 23 April 2009 on the effort of Member States to reduce their greenhouse gas emissions to meet the Community's greenhouse gas emission reduction commitments up to 2020 (2009) OJ L 140/136.

compared to 2005 levels. These targets have been transferred to national law through the Austrian Climate Protection Act¹⁵², which came into force in 2011. The Act sets emission ceilings for a total of six sectors (energy and industry outside the EU ETS, transport, buildings, agriculture, waste management and fluorinated gases) and defines rules for the development and implementation of effective climate protection measures outside the EU ETS. This makes the Climate Protection Act one of the most important pillars of Austria's climate protection policy until 2020. According to the current Climate Protection Report¹⁵³, it is very likely that the 2020 targets in the non-ETS sectors could be achieved. This is not the least due to the collapse in the economy and transport caused by the Corona pandemic. By 2030, the present EU Effort Sharing Regulation¹⁵⁴ stipulates a 36% reduction of GHG emissions in the non-ETS sectors for Austria. However, this target is not compatible with the updated 2030 target of an EU-wide GHG reduction of at least 55% and is, therefore, to be increased to -48%.¹⁵⁵

To achieve the 2030 climate targets in the non-ETS sector, the Austrian Federal Government prepared a NECP¹⁵⁶ at the end of 2019, based on the Climate and Energy Strategy 2018 '#mission2030'¹⁵⁷ and in line with the EU Governance Regulation.¹⁵⁸ However, the 2030 targets have not yet been incorporated into the Austrian Climate Protection Act. An amendment aiming at implementing them as well as remediating existing deficiencies of the Act is in the final vote between the two governing parties.¹⁵⁹

In addition, the amendment to the Climate Protection Act aims to make Austria's climate neutrality by 2040, which is set out in the current government program,¹⁶⁰ legally binding. This Austrian target is very ambitious compared to the European

152 *Klimaschutzgesetz (KSG)*, Federal Law Gazette I 2011/106, last change I 2017/58.

153 Federal Environment Agency, *Climate protection report 2021* (Umweltbundesamt 2021) 15 <www.umweltbundesamt.at/fileadmin/site/publikationen/rep0776.pdf> accessed 1 December 2021.

154 Regulation (EU) 2018/842 (n 116).

155 Commission, 'Proposal for a Regulation of the European Parliament and of the Council amending Regulation (EU) 2018/842 on binding annual greenhouse gas emission reductions by Member States from 2021 to 2030 contributing to climate action to meet commitments under the Paris Agreement' COM (2021) 555 final; Federal Environment Agency (n 153) 17.

156 Federal Ministry for Sustainability and Tourism, 'Integrated National Energy and Climate Plan for Austria' (2019) <<https://bit.ly/3wDpXMS>> accessed 28 March 2022.

157 See <<https://bit.ly/36Uua3J>> accessed 28 March 2022.

158 Regulation (EU) 2018/1999 (n 94). For the Commission's criticism on the Austrian NECP, see below.

159 For further details on shortcomings of the current Climate Protection Act see Eva Schulev-Steindl, Miriam Hofer and Lena Franke, 'Evaluierung des Klimaschutzgesetzes' (2020), available at <<https://bit.ly/3utZmzf>> accessed 10 February 2022.

160 Republic of Austria, 'Out of a sense of responsibility for Austria. Government Programme 2020-2024' (2020) 72ff <www.bundeskanzleramt.gv.at/en/federal-chancellery/the-austrian-federal-government/government-documents.html> accessed 25 January 2022.

Climate Act's EU target (climate neutrality by 2050). However, to achieve it, more effective climate protection measures are needed than before, because in the current Climate Change Performance Index (CCPI) 2022,¹⁶¹ Austria ranks only 36th and the index classifies its climate action as 'low'. By comparison, the European Union is ranked 22nd – and thus shows a medium climate performance.

To achieve the climate goals, the energy sector and the corresponding targets are of particular importance: In the field of renewables, Austria was obliged by the RED I to increase the share of renewable energies in gross final energy consumption to 34% by 2020. In 2019, a 33.6% increase was reached, and due to the corona-induced economic downturn in 2020, the target was expected to be met.¹⁶² The RED II only provides an overall target for the EU, but no separate national reduction targets are assigned to the Member States. Instead, they must submit concrete national targets as part of their Integrated National Energy and Climate Plans. Austria has set a target of 46-50% for 2030 in its NECP¹⁶³. Another target is to cover 100% of total domestic electricity consumption from renewable energy sources by 2030 (2019: 75.1%).¹⁶⁴ Finally, the share of renewable energies in the transport sector should be at least 14% in 2030 (2019: 9.8%). This is to be achieved through an increasing share of e-mobility as well as through the increased use of biofuels in the petrol and diesel sector.

The legal basis for the expansion of renewable energies in Austria is primarily the Green Electricity Act¹⁶⁵ and the recently adopted Renewable Energy Expansion Act¹⁶⁶. The object of the Green Electricity Act – it transposes the RED I into national law – is to promote the generation of electrical energy from renewable energy sources. It aims to foster the production of green electricity by plants in Austria, to increase the share of green electricity generation, to ensure the energy-efficient production of green electricity and to end the dependence on nuclear power imports. Thereby, quantitative expansion targets are set for the individual energy sources (hydropower, wind power, biomass and biogas as well as photovoltaics) until 2020. Funding is provided through a feed-in tariff model and investment subsidies.¹⁶⁷ The Renewable Energy Expansion Act implements RED II and will replace the Green

161 Jan Bruck et al., 'Results. Monitoring climate mitigation efforts of 60 countries plus the EU – covering 92% of the global greenhouse gas emissions' (Climate Change Performance Index 2022) <https://ccpi.org/wp-content/uploads/CCPI-2022-Results_2021-11-10_A4.pdf> accessed 1 December 2021.

162 Federal Environment Agency (n 153) 38.

163 Integrated National Energy and Climate Plan for Austria (n 156).

164 Bundesministerium für Klimaschutz, Umwelt, Energie Mobilität, Innovation und Technologie (BMK), 'Energie in Österreich 2021. Zahlen, Daten, Fakten' (BMK 2021) 26 <<https://bit.ly/3iDKRTX>> accessed 28 March 2022; for more information see Renate Pirstner-Ebner, *Energierrecht* (facultas 2020) 128 f.

165 *Ökostromgesetz 2012 (ÖSG 2012)*, Federal Law Gazette I 2011/75, last change I 2021/150.

166 *Erneuerbaren-Ausbau-Gesetz (EAG)*, Federal Law Gazette I 2021/150, last change I 2022/13.

167 See for example Schnedl (n 63) 258; Pirstner-Ebner (n 164) 40.

Electricity Act over time. The new Act aims to achieve Austria's energy targets for 2030, namely to cover 100% of national electricity consumption from renewable energy sources. Two types of subsidies are envisaged, on the one hand investment subsidies for construction and expansion of generation plants (photovoltaic, hydro-power and wind power plants, electricity storages) and on the other hand market premiums for operating generation plants, i.e., for producing green electricity, the latter representing a new support model in Austria.¹⁶⁸

In this context, it should be noted that Austria does not use nuclear energy to generate electricity, unlike other Member States of the European Union, which are increasingly relying on nuclear energy in the fight against climate change. Together with Germany, Luxembourg, Portugal and Denmark, Austria has vehemently opposed the recognition of nuclear energy as 'sustainable' at the UN Climate Conference in Glasgow in November 2021 (COP26). Although Austria had built a nuclear power plant in the 1970s (Zwentendorf), it never went into operation. In a referendum held in 1978, a narrow majority of Austrians (50.5%) voted against generating energy through nuclear fission. In the meantime, the ban on energy production through nuclear fission has been elevated to constitutional status by the Federal Constitutional Act for a Nonnuclear Austria¹⁶⁹.

In the field of energy efficiency, the EU Member States have to set autonomous national energy efficiency targets in order to achieve the EU-wide targets specified in the Energy Efficiency Directive (reduction of energy consumption by 20% by 2020 and by 32.5% by 2030). In Austria, these are laid down in the Federal Energy Efficiency Act¹⁷⁰ of 2014. According to this law, energy efficiency in Austria is to be increased so that final energy consumption in 2020 should not exceed the level of 1050 petajoules (energy efficiency benchmark); this corresponds to a savings objective of around 21%.¹⁷¹ This target value could not be achieved.¹⁷² To reach the climate and energy goals by 2030 and 2040 (climate neutrality), a new energy efficiency law is currently being drafted.

168 See for example Benedikt Ennser, 'Das Erneuerbaren-Ausbau-Gesetz. Ein neuer Rechtsrahmen für die Energiewende' (2021) RdU-U&T 82 ff; Benjamin Schlatter, 'Alles neu bei den Erneuerbaren' (2021) *ecolex* 8 ff.

169 *Bundesverfassungsgesetz für ein atomfreies Österreich*, Federal Law Gazette I 1999/149.

170 *Bundes-Energieeffizienzgesetz (EEffG)*, Federal Law Gazette I 2014/72, last change I 2020/68.

171 See for example Schnedl (n 63) 260ff; Nicolas Raschauer and Thomas Riesz, 'Grundsätzliches und Spezielles zum neuen Energieeffizienzgesetz des Bundes' (2014) *ZÖR* 365 ff.

172 *BMK* (n 164) 29.

4.3.2 Climate protection measures according to Oslo Principles 7 and 8 in Austrian law – selected topics

As can be seen, measures to reduce GHG emissions as required by Oslo Principle 7 and 8 have been implemented, at least in part, mainly due to the requirements of European law. Frequently, however, the reduction targets have not been achieved. Reforms are therefore still necessary, as will be shown below using selected examples.

4.3.2.1 Elimination of fossil-fuel subsidies, including tax exemptions for certain industries

Reforms are necessary in Austria, for example, with regard to the elimination of broad subsidies for fossil fuels, including tax exemptions for certain industries such as aviation, as called for in Principle 7. While direct subsidies practically no longer play a role in Austria, there are various tax concessions and tax exemptions.¹⁷³ The government bill for an eco-social Tax Reform Act 2022¹⁷⁴, introduced by the Austrian Federal Government in December 2021, only constitutes a minor progress. From 2022 on, drastic greening measures are planned for the Austrian tax system, combined with various compensation and relief measures. The centrepiece of the reform is the introduction of carbon pricing starting with 1 July 2022. The introductory price will initially be only 30 euros per ton (the low carbon price has been heavily criticised in expert communities) and is to rise to 55 euros per ton by 2025.¹⁷⁵ Secondly, not least to cushion social inequalities, there will be a regionally differentiated climate bonus for the population based on a separate Climate Bonus Act.¹⁷⁶

In addition to the new carbon pricing, further ecological tax changes are planned with the 2022 tax reform. For example, the costs for replacing fossil heating systems and comprehensive thermal renovation will be tax deductible from 1 July 2022. However, there was no agreement on the abolition of the existing ‘diesel privilege’,

173 See in more detail Daniela Kletzan-Slamanig and Angela Köppl, ‘Umweltschädliche Subventionen in den Bereichen Energie und Verkehr’ (2016) WIFO-Monatsberichte 605, 610 <<https://bit.ly/37WMQAs>> accessed 28 March 2021.

174 1293 BlgNR XXVII. GP, Ökosoziales Steuerreformgesetz 2022 Teil I; the government bill has meanwhile become law, see Federal Law Gazette I 2022/10.

175 In the run-up there were numerous discussions concerning the introduction of CO₂ pricing in Austria; see for example Robin Damberger, ‘Österreich auf dem Weg zur CO₂-Bepreisung?’ (2021) RdU 149; Hedwig Unger, ‘Verfassungsrechtliche Vorgaben für CO₂- und Umweltsteuern in Österreich’ in Gottfried Kirchengast et al. (eds), *CO₂- und Umweltsteuern. Wege zu einer umwelt-, sozial- und wirtschaftsgerechten Steuerreform* (Böhlau Verlag 2020) 172.

176 *Bundesgesetz über den regionalen Klimabonus (Klimabonusgesetz – KliBG)*, Federal Law Gazette I 2022/11.

which will thus remain in place: According to the Austrian Mineral Oil Tax Act¹⁷⁷, the mineral oil tax on diesel is 8.5 cents per litre lower than on petrol¹⁷⁸, which, in view of the global climate crisis, constitutes a tax advantage that can no longer be justified today and violates the Oslo Principles. The diesel privilege still dates back to a time when the aim was to promote economic recovery with cheap fuel for commercial vehicles.

The same applies to tax exemptions in favour of aviation, which still exist despite the sector's large environmental footprint. For example, the Austrian Mineral Oil Tax Act provides a tax exemption for kerosene,¹⁷⁹ and there is a VAT exemption for international flights.¹⁸⁰ To compensate for the latter, however, a tax is levied on airline tickets in Austria, which is regulated by the Federal Aviation Tax Act¹⁸¹. This levy was halved in 2018 to strengthen Austria's competitiveness but increased again in 2020 for reasons of climate protection.

The outlined preferential tax treatment of aviation (compared to rail transport) was recently subject of Austria's first climate lawsuit before the Constitutional Court.¹⁸² However, the Court dismissed the action for the plaintiffs' lack of direct concern and thus for formal reasons. The case therefore did not fail on substantive arguments and has meanwhile been referred to the European Court of Human Rights.¹⁸³

Finally, the Oil Boiler Installation Prohibition Act¹⁸⁴ passed in 2019 should be mentioned as a positive step towards decarbonisation of the building sector in Austria. The Act prohibits the installation of central heating boilers for liquid or solid fossil fuels and thus for coal, oil and natural gas in new buildings nationwide.¹⁸⁵ Because the Act affects the building law competence of the Federal States (some of them already established similar bans before), the aforementioned ban was established in the rank of a constitutional provision. The general phase-out of oil and coal heating systems is envisaged until 2035.¹⁸⁶ With regard to this, the Austrian Climate Protection Ministry is currently promoting the voluntary replacement of old coal, oil

177 *Mineralölsteuergesetz 2022* (MinStG 2022), Federal Law Gazette 1994/630, last change I 2021/227.

178 § 3 Mineral Oil Tax Act 2022.

179 § 4(1) no 1 Mineral Oil Tax Act 2022.

180 § 6(1) no 3 lit d Value Added Tax Act 1994 (*Umsatzsteuergesetz 1994*), Federal Law Gazette 1994/663, last change I 2022/10.

181 *Flugabgabegesetz*, Federal Law Gazette I 2010/111, last change I 2020/96.

182 VfGH 30. 9. 2020, G-144-145/2020-13, V 332/2020-13; Eva Schulev-Steindl, 'Klimaklage: VfGH weist Individualantrag gegen steuerliche Begünstigung der Luftfahrt zurück' (2020) 142 RdU 251; Dominik Geringer, 'Zur (fehlenden) Antragslegitimation einer "Klimaklage"' (2021) 16 JAP 160; Franz A M Koppensteiner and Stephanie Zolles, "'Über den Wolken muss die Freiheit wohl grenzenlos sein (...)'" (2021) 295 ÖStZ 231.

183 See above, section 2, and below, section 5.

184 *Ölkesselbauverbotsgesetz* (ÖKEVG), Federal Law Gazette I 2020/6.

185 For more information see Peter Bußjäger and Friederike Bundschuh-Rieseneder, 'Praxisfragen des Verbots der Errichtung von Ölheizungen' (2020) ÖZW 79.

186 Out of a sense of responsibility for Austria. Government Programme 2020-2024 (n 160) 77f.

and gas heating systems.¹⁸⁷ The switch to local or district heating, heat pumps or biomass heating is subsidised by the ministry with up to 7,500 euros. Coal also no longer plays a role in energy generation in Austria. The last Austrian coal-fired power plant (Mellach in Styria) was closed in 2020.¹⁸⁸ This is a decisive step towards a complete phase-out of fossil fuels and in line with the Oslo Principles: Principle 8 obliges states to refrain from erecting or expanding coal-fired power plants. At the EU level, however, the situation is different. According to Article 192(2) TFEU, a unanimous decision is required for a coal phase-out, which makes such a step unlikely in the short term, as some Member States are still heavily dependent on coal.

4.3.2.2 Promotion of measures to reduce energy consumption

In Austria, there are numerous laws at both the federal and federal state levels that promote measures for reducing energy consumption. At the federal level, the Environmental Promotion Act¹⁸⁹ and the Climate and Energy Fund Act¹⁹⁰ are the most important acts for fostering energy-saving measures. At the Federal States level, energy efficiency measures are promoted based on various environmental or eco-energy funds. In the building sector, the Housing Construction Subsidy Acts, the Building Acts and the Heating and Firing Systems Acts provide measures to improve the thermal quality of buildings. These Acts were issued to implement Directive 2010/31/EU on the energy performance of buildings.¹⁹¹ Hence, in Austria, there are not only strict legal measures to increase energy efficiency based on the Federal Energy Efficiency Act¹⁹², but also financial incentives to reduce energy consumption, as required by OP 7.

5 Procedural obligations and enforcement

One of the crucial points of climate action and climate law is the lack of sanctions for non-compliance with climate targets. This also applies to the Paris Agreement, where

187 <<https://kesseltausch.at/>> accessed 1 December 2021.

188 Die Presse, 'Letztes Kohlekraftwerk in Österreich geschlossen' (*Die Presse*, 14 April 2020) <www.diepresse.com/5801455/letztes-kohlekraftwerk-in-osterreich-geschlossen> accessed 1 December 2021.

189 *Umweltförderungsgesetz* (UFG), Federal Law Gazette 1993/185, last change I 2022/26.

190 *Klima- und Energiefondsgesetz* (KLI.EN-FondsG), Federal Law Gazette I 2007/40, last change I 2018/37.

191 Directive 2010/31/EU of the European Parliament and of the Council of 19 May 2010 on the energy performance of buildings (2010) OJ L 153/13.

192 See section 4.3.1 above.

the Parties could only agree on a rather soft compliance mechanism.¹⁹³ The Oslo Principles already adopted in the run-up to the agreement postulate no strict legal sanctions in case climate targets are missed – instead, they rely on economic consequences. Thus Principle 20 holds: ‘States must make their best efforts to bring about lawful and appropriate trade consequences for States that fail to comply with the obligations set out in [the] Principles.’

This may certainly be an efficient and reasonably practicable form of sanctioning ‘climate sinners’, but, as the authors of the Oslo Principles themselves point out, it entails problems with WTO law.¹⁹⁴ With respect to the EU, imposing economic sanctions would be a matter for the Union itself, since it has the foreign trade competence according to Article 3(1) lit e TEU. Even if this is not an issue at present, the EU is aware of the topic’s sensitivity and the tensions between international trade and environmental and climate protection. For example, in connection with the CETA trade agreement concluded between the EU and Canada, a ‘climate clause’ was adopted, according to which the two contracting parties intend to make joint and increasingly intensive efforts to meet the Paris climate targets.¹⁹⁵

Within the EU, i.e., in the relationship between Member States, imposing economic sanctions for reasons of climate protection would certainly be ruled out. This is because such national sanctions would constitute a violation of fundamental freedoms, particularly the freedom of goods and services,¹⁹⁶ and could hardly be justified in view of the very narrow rules on exceptions and the strict case law of the ECJ.¹⁹⁷

However, Member States’ climate obligations within the Union are subject to a monitoring and compliance system. As already mentioned, a ‘governance system for the Energy Union’ was implemented by a regulation.¹⁹⁸ This ‘governance mechanism’¹⁹⁹ is intended to encourage compliance with the climate targets by means of close-meshed, structured, transparent and repetitive notification, reporting and con-

193 See Paris Agreement, Article 15; on this issue see the contribution by Birgit Hollaus in this book.

194 Expert Group on Global Climate Change Obligations (n 1) 77; see in this context also Harro van Asselt, ‘Trade and climate disputes before the WTO: Blocking or driving climate action?’ in Ivano Alagna et al. (eds), *Climate change litigation: Global perspectives* (Brill 2021) 433–461, available at <https://doi.org/10.1163/9789004447615_020> accessed 10 February 2022.

195 Recommendation 001/2018 of 26 September 2018 of the CETA joint Committee <https://trade.ec.europa.eu/doclib/docs/2018/september/tradoc_157415.pdf> accessed 25 January 2022.

196 TFEU, Article 28 ff.

197 See TFEU, Article 36; Janja Hojnik, ‘Article 36’ in Hermann-Josef Blanke and Stelio Mangiameli (eds), *Treaty on the functioning of the European Union – a commentary* (Vol 1, Springer 2021) 787–812.

198 Governance Regulation (EU) 2018/1999 (n 94).

199 For the Austrian perspective see: Eva Schulev-Steindl, Miriam Hofer and Lena Franke, ‘Gutachten: Evaluierung des Klimaschutzgesetzes’ (ClimLaw: Graz 2020) <<https://bit.ly/3NroT10>> accessed 28 March 2022.

sultation processes as well as monitoring measures between the Member States and the Commission.

The central instrument in this complex system are the ‘Integrated National Energy and Climate Plans’²⁰⁰, which Member States are to prepare every 10 years.²⁰¹ Member States must set national goals, guidelines and contributions, as well as include detailed descriptions of implementation strategies and measures, together with forecasts and impact assessments.²⁰² This is to be done with public participation and involvement of neighbouring countries.²⁰³ Drafts of the NECPs²⁰⁴ must be submitted to the Commission, which subjects them to a review process that examines, among other things, their suitability for achieving the objectives at the EU level, the ambition of the Member State, but also the appropriateness of the measures.²⁰⁵ Finally, the Commission makes recommendations to the Member States, which may only be deviated from with good reason.²⁰⁶ The NECPs must also be updated regularly during their period of validity and progress in implementation must be reported to the Commission.²⁰⁷ With regard to Austria, it can be noted that the first draft of such a plan in 2019 was criticised by the Commission as deficient²⁰⁸ and a more ambitious ‘reference NECP’ was presented as a model by the scientific community.²⁰⁹ Yet the Commission still saw room for improvement in Austria’s final NECP, especially with regard to the level of ambition.²¹⁰

The second important steering instrument of the Governance Regulation are long-term strategies at the national and EU level.²¹¹ These are also required by the Paris

200 See Governance Regulation (n 94), Article 3ff.

201 Ibid Article 3(1) and 9(1).

202 Ibid Article 3(2).

203 Ibid Article 10ff.

204 For all Member States available at <<https://bit.ly/35oNKFz>> accessed 29 March 2022.

205 Governance Regulation (n 94), Article 9, 13.

206 Article 9(3) of the Governance Regulation reads as follows: ‘Each Member State shall take due account of any recommendations from the Commission in its integrated national energy and climate plan. If the Member State concerned does not address a recommendation or a substantial part thereof, that Member State shall provide and make public its reasons.’

207 Governance Regulation (n 94), Article 14, 17ff.

208 EU Umweltbüro, ‘EU-Kommission: Österreichs Klimapläne höchst unzureichend’ (*EU Umweltbüro* 21 June 2019) at <www.eu-umweltbuero.at/inhalt/eu-kommission-oesterreichs-klima-plaene-hoechst-unzureichend> accessed 25 January 2022.

209 Gottfried Kirchengast et al., *Referenzplan als Grundlage für einen wissenschaftlich fundierten und mit den Pariser Klimazielen in Einklang stehenden Nationalen Energie- und Klimaplan für Österreich* (Ref-NEKP) (Verlag der Österreichischen Akademie der Wissenschaften 2019), available at <https://epub.oeww.ac.at/0xc1aa5576_0x003b2d00.pdf> accessed 25 January 2022.

210 Europäische Kommission, ‘Arbeitsunterlage der Kommissionsdienststellen: Bewertung des endgültigen nationalen Energie- und Klimaplan Österreichs’ SWD (2020) 919 final, available at <<https://bit.ly/3MrBm84>> accessed 5 March 2022.

211 Governance Regulation (n 94), Article 15.

Agreement²¹² and are intended to show the development of GHG reductions in the respective Member State and across the EU for at least 30 years, i.e., initially in the time horizon up to 2050.²¹³ Other instruments of the Governance Regulation include rules for GHG inventory systems,²¹⁴ assessment of progress towards targets,²¹⁵ and annual reports by the Commission on the state of the Energy Union.²¹⁶ In addition, gap-filling mechanisms by the Commission are foreseen to address missing ambition levels in NECPs (so-called ‘ambition gaps’)²¹⁷ or insufficient progress of implementation measures (‘delivery gaps’).²¹⁸

The Effort Sharing Regulation, which provides for linear emission reduction targets²¹⁹ with annual emission allocations and certain flexibilities for Member States, also contains a compliance mechanism for the event of failure to meet emission levels by a member state.²²⁰ Finally, the new European Climate Law contains governance requirements for both the Union and the Member States: Starting with the goal of EU climate neutrality by 2050 and 55% GHG reduction by 2030 (compared to 1990), the European Commission is required to propose an interim target for 2040, to be accompanied by indicative GHG budgets as well as indicative and voluntary sectoral reduction pathways.²²¹ The Commission is to use five-yearly reviews to monitor progress at EU and Member State level towards the shared target.²²²

The final word on compliance will, of course, come from the European Court of Justice. If the governance mechanisms outlined are not effective and the Member States fail to meet their climate targets, which are to be understood as minimum targets,²²³ they would have to expect infringement proceedings.²²⁴ The climate policy

212 Paris Agreement, Article 4(19).

213 See Governance Regulation (n 94), Article 15(2).

214 Ibid Article 37.

215 Ibid Article 29.

216 Ibid Article 35.

217 Ibid Article 31.

218 Ibid Article 32.

219 See Regulation (EU) 2018/842 (n 116); Article 4(2) mentions a ‘linear trajectory’.

220 Effort Sharing Regulation (n 116), Article 8; on the possible resulting costs for Austria see Karl W Steininger et al., ‘Klimapolitik in Österreich: Innovationschance Coronakrise und die Kosten des Nicht-Handelns’ (2020) Wegener Center Research Briefs 32, available at <https://wegcwww.uni-graz.at/publ/wegercb/2020/WEGC-RB1-2020_Steininger-et-al_Klima-politik-InnovationschanceCorona-KostenNichthandeln.pdf> accessed 25 January 2022.

221 European Climate Law (n 62), Article 4(3)-(6).

222 European Climate Law (n 62), Article 6; Alison McDonnell et al., ‘Editorial comments. The European climate law: Making the social market economy fit for 55?’ (2021) 58 Common Market Law Review 1321 <<https://bit.ly/3wJu61H>> accessed 28 March 2022.

223 See Effort Sharing Regulation, Article 1 (n 116), that speaks of ‘minimum contributions’ – accordingly, it is possible and desirable for the Member States to aim for more ambitious reduction targets; cf. recital 26 to the Effort Sharing Regulation according to which (within the framework of the implementation of a safety reserve) ‘incentives for Member States’ actions beyond the minimum contributions under this Regulation’ should be maintained.

224 TFEU, Article 258.

of the EU itself can also be put to test before the ECJ. This is because the Court can examine secondary legislation on climate protection for compliance with primary law. In the so-called *People's Climate Case*²²⁵, several people already strongly affected by climate change, such as farmers, foresters, or hotel operators from various European countries, but also from Kenya and Fiji, tried to fight the so-called 'Climate Package' 2018²²⁶ for being too unambitious by filing an action for annulment.²²⁷ They claimed a violation of fundamental rights of the CFR (right to life, health, and property) and the TFEU (Article 191 – high level of protection in EU environmental policy, precautionary principle), but also of the Paris Agreement and argued that the target to reduce GHG emissions by 40% (compared to 1990) until 2030 was insufficient and had to be increased to at least 50-60%. The claim was dismissed in 2019 at first instance due to lack of legal standing: The 'fact that the effects of climate change may be different for one person than they are for another', the General Court²²⁸ stated, 'does not mean that, for that reason, there exists standing to bring an action against a measure of general application'. In 2021 the decision was upheld by the ECJ ruling that the mere allegation of an EU legal act violating fundamental rights would not lead to the admissibility of an individual action.²²⁹

As can be seen, both the Member States and the EU itself have thus subjected themselves to an independent jurisdiction before which – as required by the Oslo Principles (OP 25) – compliance with their climate protection commitments can be reviewed. At least in principle. As just outlined, the narrow admissibility requirements have already caused the first climate lawsuit against the EU to fail even before a substantive review of the EU's compliance could take place. Therefore, it can be doubted whether the underlying action for annulment is an effective legal remedy, as required by Article 47 CFR. A similar situation applies partly to the review of government climate action or its omission before the national courts of the Member States. It is true that in 2021 the German Federal Constitutional Court – widely granting *locus standi* and even extending it to citizens of other countries – declared parts of Germany's Climate Protection Act unconstitutional because it did not set GHG reduction targets beyond 2030. The Act thus had an 'encroachment-like pre-effect' on the plaintiffs' constitutional liberties and endangered the freedom of future gener-

225 <<https://peoplesclimatecase.caneurope.org/>> accessed 12 March 2022.

226 Emissions Trading Amendment Directive (EU) 2018/410, Effort Sharing Regulation (EU) 2018/842 and LULUCF Regulation (EU) 2018/841; see chapter 4.2.2.1.

227 TFEU, Article 263.

228 Case T-330/18 *Carvalho and Others v Parliament and Council* (2019) ECLI:EU:T:2019:324, para 50; see for example Gerd Winter, 'Armando Carvalho et al. versus Europäische Union: Rechtsdogmatische und staatstheoretische Probleme einer Klimaklage vor dem Europäischen Gericht' (2019) ZUR 259.

229 Case *Carvalho* (n 39) para 48.

ations.²³⁰ The first Austrian climate lawsuit, on the other hand, was rejected in 2020, with the somewhat cynical argument that the plaintiffs, as rail passengers, and thus not directly affected, were not entitled to challenge tax privileges for aviation before the Constitutional Court.²³¹ It remains to be seen whether the ECtHR in Strasbourg, where this case is now pending,²³² will see the strict requirements of Austrian law on standing as a violation of the right to an effective remedy under Article 13 ECHR. These and similar climate lawsuits do, however, have one effect: In the sense of strategic litigation, they attract public attention and thus generate political momentum. For example, the more ambitious climate target of a 55% GHG reduction by 2030 (compared to 1990), which was sought in vain before the ECJ, is now set out in Article 4 of the new European Climate Law.

As outlined, active citizens and environmental organisations have helped to raise public awareness for the importance of climate policy in recent years through climate lawsuits, and, in many cases, governments have tightened up their measures. An essential prerequisite is, of course, the availability and accessibility of relevant information. This is what Principle 26 addresses when it requires states to make available all relevant information to enable people within their jurisdiction to assess the risk that climate change poses to their lives and health. The provision reminds of the first pillar of the Aarhus Convention,²³³ which obliges the contracting states to grant the public effective access to environmental information. This, in turn, is necessary for effective public participation and access to justice, as provided for in the second and third pillars of the Convention. Both Austria and the EU are parties to the Aarhus Convention and have adopted regulations to this effect: On the one hand, the Environmental Information Directive²³⁴ obliges EU institutions and Member States to give their citizens access to environmental information; on the other hand, in Austria, there are federal and federal state environmental information laws.²³⁵ In contrast, the implementation of the second and third pillars of the Convention is fragmented at the

230 *Neubauer et al. v Germany* (n 35) para 96ff, 184, 186, 266. The Court declared the German Climate Protection Act partially unconstitutional because it violates the fundamental rights of future generations; see for example Felix Ekardt and Franziska Heß, 'Bundesverfassungsgericht, neues EU-Klimaschutzrecht und das Klima-Ziel des Paris-Abkommens' (2021) NVwZ 1421; Kurt Faßbender, 'Der Klima-Beschluss des BVerfG – Inhalte, Folgen und offene Fragen' (2021) NJW 2085; for further reference see above (n 35).

231 VfGH 30 September 2020, G 144-145/2020-13, V 332/2020-13 (n 38).

232 *Mex M v Austria* (n 37).

233 Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (adopted 25 June 1988, entered into force 30 October 2001) 2161 UNTS 447.

234 Directive 2003/4/EC of the European Parliament and of the Council of 28 January 2003 on public access to environmental information and repealing Council Directive 90/313/EEC OJ L 2003/41.

235 For federal law see the Environmental Information Act (*UIG*), Federal Law Gazette 1993/495, last change I 2018/74.

national level, as the legislator has decided against a uniform law.²³⁶ It should be noted that the right to (environmental) information also plays a central role in the jurisprudence of the ECtHR – this has been repeatedly underlined by the court, especially in context with the right to private and family life.²³⁷

6 Obligations for enterprises

In seeking to combat climate change quickly and comprehensively, the Oslo Principles do not only address states but also commit enterprises to reduce their GHG emissions. Thus Principle 27 obliges enterprises to

assess their facilities and property to evaluate their vulnerability to future climate change; the financial effect that future climate change will have on the enterprises; and the enterprises' efforts to increase their resilience to future climate change.

According to Principle 28, enterprises from the fossil-fuel industry must furthermore assess the impact that any limitations imposed on future extraction or use of fossil fuels will have on their financial situation. Relevant information should then be reported to the public, especially to investors, clients and securities regulators.

In short, company-specific climate risks should be assessed and disclosed, and carbon footprints should be relevant for investments. In recent years, the EU has increasingly taken legal steps in this direction.²³⁸ For example, with the NFR-Directive,²³⁹ issued in 2014, larger capital market-oriented companies have been obliged to 'non-financial reporting' and must now give information on environmental factors in addition to social issues and 'aspects of good corporate governance'. To specify these requirements, the Commission *inter alia* issued (non-binding) guidelines on reporting climate-related information²⁴⁰ in 2019. This 'green reporting',

236 Dieter Altenburger, 'Die Aarhus Konvention' in Daniel Ennöckl, Nicolas Raschauer and Wolfgang Wessely (eds), *Handbuch Umweltrecht* (3rd edn, facultas 2019) 390.

237 For example: *Tătar v Romania* App. no. 67021/01 (ECtHR 20 January 2001), *McGinley and Egan v the United Kingdom* App. no. 21825/93 and 23414/94 (ECtHR 9 June 1998).

238 Panagiotis Dimitropoulos and Konstantinos Koronios, 'Corporate environmental responsibility in the EU' in Panagiotis Dimitropoulos and Konstantinos Koronios (eds), *Corporate environmental responsibility, accounting and corporate finance in the EU. A quantitative analyses approach* (Springer 2021) 17-49; available at <<https://link.springer.com/book/10.1007/978-3-030-72773-4>> accessed 10 February 2022; see also recently Rolf H Weber and Andreas Hösl, 'Corporate climate responsibility – the rise of a new governance issue' (2021) *sui generis* 83, available at <<https://doi.org/10.21257/sg.171>> accessed 10 February 2022.

239 Directive 2014/95/EU of 22 October 2014 amending Directive 2013/34/EU as regards disclosure of non-financial and diversity information by certain large undertakings and groups OJ L 330/1.

240 Commission Communication C/2019/4490 of 20 June 2019 Guidelines on non-financial reporting: Supplement on reporting climate-related information OJ C 209/1, 1-30.

which has been implemented in Austria in the Corporate Code,²⁴¹ is to be further expanded and intensified with the Draft Corporate Sustainability Reporting Directive²⁴² presented by the Commission in 2021. Specifically for financial market participants and financial advisors, the Sustainable Finance Disclosure Regulation from 2019²⁴³ sets out transparency obligations as to the consideration of sustainability risks and adverse sustainability impacts in their business processes as well as information obligations regarding the sustainability of financial products.

To promote the financing of sustainable investments – which is important for implementing the ‘Green Deal’ – the so-called Taxonomy Regulation²⁴⁴ was issued in 2020. In addition to disclosure requirements for companies, it contains criteria to assess the sustainability of economic activities, particularly regarding climate protection and adaptation to climate change. The Climate Benchmark Regulation²⁴⁵ also serves to avoid ‘greenwashing’ and to promote sustainable investments. It defines criteria for reference values to assess low-carbon investments and investment portfolios in relation to climate change in general and the Paris climate targets in particular.

Finally, the Oslo Principles (OP 29) provide that enterprises must conduct environmental impact assessments before building major new facilities. Such assessments have to include an analysis of the carbon footprint and ways to reduce it as well as possible impacts of future climate change on the planned facility. The instrument of environmental impact assessment thus addressed is well established in law. Under international law, the Espoo Convention²⁴⁶ lays down rules on environmental impact assessment for projects with significant transboundary effects. And at the European level, the EIA Directive,²⁴⁷ implemented in Austria through the Federal EIA Act,²⁴⁸ ensures that the environmental impacts of certain, larger projects are

241 § 243b *Unternehmensgesetzbuch* – UGB (Federal Corporate Code), dRGBI 1897/219, last change Federal Law Gazette I 2021/86.

242 Proposal for a Directive of the European Parliament and of the Council amending Directive 2013/34/EU, Directive 2004/109/EC, Directive 2006/43/EC and Regulation (EU) No 537/2014, as regards corporate sustainability reporting, COM/2021/189 final.

243 Regulation (EU) 2019/2088 of the European Parliament and of the Council of 27 November 2019 on sustainability-related disclosures in the financial services sector OJ L 317/1.

244 Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the establishment of a framework to facilitate sustainable investment, and amending Regulation (EU) 2019/2088 OJ L 198/13.

245 Regulation (EU) 2019/2089 of the European Parliament and of the Council of 27 November 2019 amending Regulation (EU) 2016/1011 as regards EU Climate Transition Benchmarks, EU Paris-aligned Benchmarks and sustainability-related disclosures for benchmarks OJ L 317/17.

246 Convention on Environmental Impact Assessment in a Transboundary Context (adopted 25 February 1991, entered into force 10 September 1997) 1989 UNTS 309 (Espoo Convention).

247 Environmental Impact Assessment Directive (n 59).

248 *Umweltverträglichkeitsprüfungsgesetz 2000 (UVP-G)*, Federal Law Gazette 1993/697, last change I 2018/80. See in more detail: Daniel Ennöckl and Nicolas Raschauer, ‘Umweltverträglichkeitsprüfung (UVP)’ in Daniel Ennöckl, Nicolas Raschauer and Wolfgang Wessely (eds), *Handbuch Umweltrecht* (3rd edn, facultas 2019) 297.

identified and reviewed prior to their implementation. Yet, aspects of climate protection only play a limited role in this context. While information on the project's GHG emissions must be provided by the applicant in the environmental impact statement, the amount of emissions is not a criterion for approval; the project's impact on the climate is only to be considered as part of the overall weighing of interests. This in turn can only result in a reason for rejecting the project in very exceptional cases.²⁴⁹

Austrian judges, however, took a courageous step in a 2017 decision: Following an EIA review, they denied approval for the expansion of Vienna Airport.²⁵⁰ The construction of a 3rd runway, they argued, would increase Austria's GHG emissions by about 2%, calling into question compliance with national and international GHG emission reduction commitments. This ruling of the Federal Administrative Court caused quite a stir in the media but was ultimately overturned by the Constitutional Court.²⁵¹ In any case, it was one of the first decisions worldwide to deny approval to a project on climate protection grounds – meanwhile there are numerous such cases.²⁵²

7 Conclusion

The Oslo Principles have made career: Over recent years, a more or less visionary initiative by a group of experts has become a legal reality in many areas. Based on international climate treaties, above all, the Paris Agreement, legislators and courts have created an increasingly dense network of climate protection-related obligations for states (or communities of states such as the EU) and enterprises. This has been shown above for the European Union and – on behalf of its Member States – for Austria.

249 Peter Sander, 'Die Rolle des Klimaschutzes im Genehmigungsverfahren – Eine Untersuchung aus Anlass des Genehmigungsverfahrens zur "3. Piste" des Flughafen Wien/Schwechat' (2019) ZTR 8.

250 BVwG 02.02.2017, W109 2000179-1; see on the judgment: Gottfried Kirchengast et al., 'Flughafen Wien: Untersagung der dritten Piste durch das BVwG' (2017) 3 RdU 121.

251 VfGH 29.06.2017, E 875/2017, E 886/2017; see e.g., Birgit Hollaus, 'Austrian Constitutional Court: Considering climate change as a public interest is arbitrary – refusal of third runway permit annulled' (2017) ICL Journal 467; Verena Madner and Eva Schulev-Steindl, 'Dritte Piste – Klimaschutz als Willkür? Anmerkungen zu VfGH 29.06.2017, E 875/2017, E 886/2017' (2017) ZÖR 589.

252 See *R (on the application of Friends of the Earth Ltd and Others) v Heathrow Airport Ltd* UKSC 2020/0042 at <www.supremecourt.uk/cases/docs/uksc-2020-0042-judgment.pdf> accessed 25 January 2022; similarly concerning the airport of Prague: Prague Regional Court 24 June 2020, 54 A 68/2019; for further comments on the airport judgments see Eva Balounová, 'BLOG: Climate change and the expansion of airports in court: Are there any arguments at all?' (*GNHRE*, 29 April 2021) <<https://bit.ly/3fTiQy9>> accessed 30 March 2022.

As the Principles already envisaged in 2015, this legal framework is strongly ‘fundamental rights-based’, i.e., finds its legitimacy and constitutional justification in fundamental and human rights. Positive obligations, as enshrined in the ECHR and in many national constitutions, thereby play a central part. These duties of states, but also of the EU itself, to protect citizens from the effects of climate change on life, health and property are, as also indicated by the Oslo Principles, based on the so-called precautionary principle. Climate policy must, therefore, also take into account scenarios that are less likely to occur, but whose impacts would be all the more serious. Consequently, as required by the Principles, the climate policy of the EU and its Member States should be geared to the 1.5 or 2°C target, which was also anchored in the Paris Agreement shortly after the Principles were issued. Member States for themselves can set more ambitious targets that go beyond the EU requirements: Austria, for example, is aiming for climate neutrality by 2040, 10 years earlier than the EU. This, at least in theory – in practice, there are still deficits, especially in the non-ETS sector, where Austria regularly has failed to meet its climate targets.

In recent years, civil society has proven to be a driving force for climate policy and law – Fridays for Future is just one example. Courts have also set milestones when called upon to join the fight for a more ambitious climate policy through climate lawsuits. Just as the Oslo Principles predicted, it will take the courage of individuals and the commitment of all if we are to achieve the climate goals – the Principles certainly point the way!

Bibliography

- Abreu Amorim C and Cardoso A, ‘European climate law – real changes or postponed future?’ (2021) 7(1) UNIO – EU Law Journal 138.
- Akandji-Kombe JF, *Positive obligations under the European Convention on Human Rights. A guide to the implementation of the European Convention of Human Rights* (Council of Europe Human Rights Handbooks Series 7, Council of Europe 2007) <<https://rm.coe.int/168007ff4d>> accessed 25 January 2022.
- Altenburger D, ‘Die Aarhus Konvention’ in Ennöckl D, Raschauer N and Wessely W (eds), *Handbuch Umweltrecht* (3rd edn, facultas 2019) 390.
- Bäumler J, ‘Sustainable development made justiciable: The German Constitutional Court’s climate ruling on intra- and inter-generational equity’ (2021) EJIL <www.ejiltalk.org/sustainable-development-made-justiciable-the-german-constitutional-courts-climate-ruling-on-intra-and-inter-generational-equity/> accessed 25 January 2022.
- Beaugard C et al., ‘Climate justice and rights-based litigation in a post-Paris world’ (2021) 21 Climate Policy 652 <<https://doi.org/10.1080/14693062.2020.1867047>> accessed 3 March 2022.
- Bell S et al., *Environmental law* (9th edn, Oxford University Press 2017).
- Bogojevic S, ‘Climate change law and policy in the European Union’ in Carlarne CP et al. (eds), *The Oxford handbook of international climate change law* (Oxford University Press 2016) 670.

- Bourguignon D, 'The precautionary principle. Definitions, applications and governance' (European Parliamentary Research Service 2015) <<https://bit.ly/36EtBLE>> accessed 28 March 2022.
- Braig KF, 'Reichweite und Grenzen der umweltrechtlichen Schutzpflichten' (2017) 39 NuR 100.
- and Panov S, 'The doctrine of positive obligations as a starting point for climate litigation in strasbourg: The European Court of Human Rights as *Hilfssheriff* in combating climate change?' (2020) 35 Journal of Environmental Law and Litigation 261.
- Bruck J et al., 'Results. Monitoring climate mitigation efforts of 60 countries plus the EU – covering 92% of the global greenhouse gas emissions' (Climate Change Performance Index 2022) <https://ccpi.org/wp-content/uploads/CCPI-2022-Results_2021-11-10_A4.pdf> accessed 1 December 2021.
- Bundesministerium für Klimaschutz, Umwelt, Energie Mobilität, Innovation und Technologie, 'Energie in Österreich 2021. Zahlen, Daten, Fakten' (BMK 2021) <<https://bit.ly/3iDKRTX>> accessed 28 March 2022.
- Buser A, 'Die Freiheit der Zukunft' (2021) Verfassungsblog <<https://verfassungsblog.de/die-freiheit-der-zukunft/>> accessed 25 January 2022.
- Bußjäger P and Bundschuh-Rieseneder F, 'Praxisfragen des Verbots der Errichtung von Ölheizungen' (2020) ÖZW 79.
- Damberger R, 'Österreich auf dem Weg zur CO₂-Bepreisung?' (2021) RdU 149.
- De Sadeleer N, 'The precautionary principle as a device for greater environmental protection: Lessons from EC courts' (2009) 18 RECIEL 3-10 <<https://doi.org/10.1111/j.1467-9388.2009.00616.x>> accessed 14 February 2022.
- , *Environmental law principles – from political slogans to legal rules* (2nd edn, Oxford University Press 2020).
- Dederer HG, 'Die Governance-Verordnung der Union. Klimapolitische Steuerung der EU-Mitgliedstaaten in Richtung Nachhaltigkeit' (2021) NR 25.
- Die Presse, 'Letztes Kohlekraftwerk in Österreich geschlossen' (*Die Presse*, 14 April 2020) <www.diepresse.com/5801455/letztes-kohlekraftwerk-in-osterreich-geschlossen> accessed 1 December 2021.
- Dimitropoulos P and Koronios K, 'Corporate environmental responsibility in the EU' in Dimitropoulos P and Koronios K (eds), *Corporate environmental responsibility, accounting and corporate finance in the EU. A quantitative analyses approach* (Springer 2021) 17-49 <<https://link.springer.com/book/10.1007/978-3-030-72773-4>> accessed 10 February 2022.
- Ekardt F, 'Climate revolution with weakness' (2021) Verfassungsblog <<https://verfassungsblog.de/climate-revolution-with-weaknesses/>> accessed 25 January 2022.
- and Heß F, 'Bundesverfassungsgericht, neues EU-Klimaschutzrecht und das Klima-Ziel des Paris-Abkommens' (2021) NVwZ 1421.
- et al., 'Paris Agreement, precautionary principle and human rights: Zero emissions in two decades?' (2018) 10(8) Sustainability <<https://doi.org/10.3390/su10082812>> accessed 15 March 2022.
- Ennöckl D, 'Wie kann das Recht das Klima schützen?' (2020) ÖJZ 302.
- and Raschauer N, 'Umweltverträglichkeitsprüfung 'UVP'' in Ennöckl D, Raschauer N and Wessely W (eds), *Handbuch Umweltrecht* (3rd edn, facultas 2019) 297.
- Ennsner B, 'Das Erneuerbaren-Ausbau-Gesetz. Ein neuer Rechtsrahmen für die Energiewende' (2021) RdU-U&T 82.
- Epiney A, *Umweltrecht der Europäischen Union* (4th edn, Nomos 2019).

- Epstein C, ‘Common but differentiated responsibilities’ (*Britannica*, 29 December 2015) <www.britannica.com/topic/common-but-differentiated-responsibilities> accessed 26 February 2022.
- EU Umweltbüro, ‘EU-Kommission: Österreichs Klimapläne höchst unzureichend’ (EU Umweltbüro 21 June 2019) <www.eu-umweltbuero.at/inhalt/eu-kommission-oesterreichs-klimaplaene-hoechst-unzureichend> accessed 25 January 2022.
- Europäische Kommission, ‘Arbeitsunterlage der Kommissionsdienststellen: Bewertung des endgültigen nationalen Energie- und Klimaplan Österreichs’ SWD (2020) 919 final <https://ec.europa.eu/energy/sites/default/files/documents/staff_working_document_assessment_necp_austria_de.pdf> accessed 25 January 2022.
- European Commission, ‘Climate action’ <https://ec.europa.eu/clima/eu-action/eu-emissions-trading-system-eu-ets/revision-phase-4-2021-2030_en> accessed 1 December 2021.
- , ‘EU Emissions Trading System (EU ETS)’ <https://ec.europa.eu/clima/eu-action/eu-emissions-trading-system-eu-ets_en> accessed 1 December 2021.
- , ‘International climate finance’ <https://ec.europa.eu/clima/eu-action/international-action-climate-change/international-climate-finance_en> accessed 1 December 2021.
- , ‘International platform on sustainable finance’ <https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance/international-platform-sustainable-finance_en> accessed 1 December 2021.
- , ‘Land use and forestry regulation for 2021-2030’ <https://ec.europa.eu/clima/eu-action/forests-and-agriculture/land-use-and-forestry-regulation-2021-2030_en> accessed 1 December 2021.
- , ‘Overview of sustainable finance’ <https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance/overview-sustainable-finance_en> accessed 1 December 2021.
- European Council, Council of the European Union, ‘Latest EU policy actions on climate change’ <www.consilium.europa.eu/en/policies/climate-change/eu-climate-action/> accessed 1 December 2021.
- European Court of Human Rights Press Unit, ‘Environment and the European Convention on Human Rights’ (ECTHR, January 2021) <<https://bit.ly/3LlwK1P>> accessed 28 March 2022.
- Expert Group on Global Climate Obligations (ed), *Oslo Principles on Global Climate Change* (Eleven International Publishing 2015) <<https://bit.ly/3Mo7hX0>> accessed 28 March 2022.
- Expert Group on Climate Obligations of Enterprises, *Principles on Climate Obligations of Enterprises* (Eleven International Publishing 2018) <<https://bit.ly/3NqbABn>> accessed 28 March 2022.
- (ed), *Principles on Climate Obligations of Enterprises* (2nd edn, Eleven 2020) <<https://climateprinciplesforenterprises.org/>> accessed 10 February 2022.
- Farkas B et al., ‘Human rights and climate obligations, draft memorandum for the Experts’ Group on Global Climate Change’ (Yale Law School, April 2013) <<https://bit.ly/37WJGg4>> accessed 24 January 2022.
- Faßbender K, ‘Der Klima-Beschluss des BVerfG – Inhalte, Folgen und offene Fragen’ (2021) NJW 2085.
- Federal Environment Agency, *Climate protection report 2021* (Umweltbundesamt 2021) <www.umweltbundesamt.at/fileadmin/site/publikationen/rep0776.pdf> accessed 1 December 2021.
- Federal Ministry for Sustainability and Tourism, ‘The Austrian strategy for adaptation to climate change, Part 1 – context’ (Federal Ministry for Sustainability and Tourism 2017) 25, 65 <<https://bit.ly/3Ce4ASX>> accessed 25 January 2022.

- , ‘Integrated national energy and climate plan for Austria’ (2019) <<https://bit.ly/3wDpXMS>> accessed 28 March 2022.
- Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection, ‘First Commitment Period (2008 to 2012)’ <www.bmu.de/en/topics/climate-adaptation/climate-protection/international-climate-policy/kyoto-protocol/commitment-periods> accessed 1 December 2021.
- Fitz J and Ennöckl D, ‘Klimaschutzrecht’ in Ennöckl D, Raschauer N and Wessely W (eds), *Handbuch Umweltrecht* (3rd edn, facultas 2019) 757.
- Fleming R and Mauger R, ‘Green and just? An update on the “European Green Deal”’ (2021) 18 *Journal for European Environmental & Planning Law* 164-180.
- Frank W, ‘Anmerkungen zu den “Oslo Principles on Global Climate Change Obligations”’ (2015) *NVwZ* 1499.
- Frenz W, ‘EU-Klimapaket Fit for 55’ (2021) *UPR* 338.
- , ‘Nachhaltige Wirtschaftswende nach dem EU-Klimapaket “Fit for 55”’ (2021) *EWS* 241.
- Garnett K and Parsons DJ, ‘Multi-case review of the application of the precautionary principle in European Union law and case law’ (2017) 37 *Risk Analysis* 502.
- Geringer D, ‘Zur (fehlenden) Antragslegitimation einer “Klimaklage”’ (2021) 16 *JAP* 160.
- Heiskanen H, ‘Climate change and the European Court of Human Rights’ in Duyck S et al. (eds), *Routledge handbook of human rights and climate governance* (Routledge 2018).
- Hofer M, *Die Staatliche Verantwortung für den Umwelt- und Klimaschutz* (in preparation).
- Hojnik J, ‘Art 36’ in Blanke H-J and Mangiameli S (eds), *Treaty on the Functioning of the European Union – A commentary* (Vol 1, Springer 2021) 787-812.
- Hollaus B, ‘Austrian Constitutional Court: Considering climate change as a public interest is arbitrary – refusal of third runway permit annulled’ (2017) *ICL Journal* 467.
- Horstink L, Wittmayer J and Ng K, ‘Pluralising the European energy landscape: Collective renewable energy prosumers and the EU’s clean energy vision’ (2021) 153 *Energy Policy* <<https://doi.org/10.1016/j.enpol.2021.112262>> accessed 14 February 2022.
- IPCC, *Climate change 2014: Synthesis report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (IPCC 2014).
- , *Climate change 2021: The physical science basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press in Press).
- , ‘Summary for policymakers (SPM)’ in Masson-Delmotte V et al. (eds), *Climate change 2021: The physical science basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press in Press) <www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Full_Report.pdf> accessed 25 January 2022.
- Karlsson Niska T, ‘Climate change litigation and the European Court of Human Rights – a strategic next step?’ (2020) 13 *The Journal of World Energy Law & Business* 331.
- Kirchengast G et al., ‘Flughafen Wien: Untersagung der dritten Piste durch das BVwG’ (2017) 3 *RdU* 121.
- , *Referenzplan als Grundlage für einen wissenschaftlich fundierten und mit den Pariser Klimazielen in Einklang stehenden Nationalen Energie- und Klimaplan für Österreich (Ref-NEKP)* (Verlag der Österreichischen Akademie der Wissenschaften 2019) <https://epub.oeaw.ac.at/0xc1aa5576_0x003b2d00.pdf> accessed 25 January 2022.

- Kletzan-Slamanig D and Köppl A, 'Umweltschädliche Subventionen in den Bereichen Energie und Verkehr' (2016) WIFO-Monatsberichte 605, 610 <<https://bit.ly/3s2ckUp>> accessed 29 April 2021.
- Klimareporter, 'Reiche Länder haben 100-Milliarden-Versprechen gebrochen' <<https://bit.ly/3yigvzt>> accessed 29 April 2022.
- Koppensteiner FAM and Zolles S, "'Über den Wolken muss die Freiheit wohl grenzenlos sein [...]'" (2021) 295 ÖStZ 231.
- Langlet D and Mahmoudi S, *EU environmental law and policy* (Oxford University Press 2016).
- Lengauer A, 'Die Energiepolitik der Europäischen Union im Angesicht des Klimawandels. Ein Überblick über Kompetenzen, Maßnahmen und Problemfelder' (2020) ZfRV 196.
- Madner V and Schulev-Steindl E, 'Dritte Piste – Klimaschutz als Willkür? Anmerkungen zu VfGH 29.06.2017, E 875/2017, E 886/2017' (2017) ZÖR 589.
- Maguire R, 'The role of common but differentiated responsibility in the 2020 climate regime: Evolving a new understanding of differential commitments' (2013) 7 CCLR 260.
- Marchant GE and Mossman KL, *Arbitrary and capricious: The precautionary principle in the European Union courts* (The AEI Press 2005).
- Matthews HD, 'Quantifying historical carbon and climate debts among nations' (2016) 6 Nature Climate Change 60.
- McDonnell A et al., 'Editorial comments. The European Climate Law: Making the social market economy fit for 55?' (2021) 58 Common Market Law Review 1321 <<https://kluwerlawonline.com/journalarticle/Common+Market+Law+Review/58.3/COLA2021084>> accessed 25 January 2022.
- Meyer LH and Roser D, 'Climate justice and historical emissions' (2010) 13 Critical Review of International Social and Political Philosophy 229.
- Meyer L and Steininger K, *Das Treibhausgas-Budget für Österreich* (Wegener Center Verlag 2017) <<https://wegcwww.uni-graz.at/publ/wegcreports/2017/WCV-WissBer-Nr72-LMeyerKSteininger-Okt2017.pdf>> accessed 1 December 2021.
- Meyer S, 'Grundrechtsschutz in Sachen Klimawandel' (2020) NJW 894.
- Monti G, 'The European Climate Law: Making the social market economy fit for 55?' (2021) 58(5) Common Market Law Review 1321.
- Müllerova H, 'Environment playing short-handed: Margin of appreciation in environmental jurisprudence of the European Court of Human Rights' (2014) 24 RECIEL 83.
- Nagra S, 'The Oslo Principles and climate change displacement: Missed opportunity or misplaced expectations?' (2017) 11 Carbon & Climate Law Review 120.
- Pause F, "'Saubere Energie für alle Europäer" – Was bringt das Legislativpaket der EU?' (2019) ZUR 387.
- Pedersen OW, 'The European Convention of Human Rights and Climate Change – finally!' (2020) EJIL <www.ejiltalk.org/the-european-convention-of-human-rights-and-climate-change-finally/> accessed 25 January 2022.
- Peel J and Lin J, 'Transnational climate litigation: The contribution of the global South' (2019) 113 The American Journal of International Law <<https://doi.org/10.1017/ajil.2019.48>> accessed 12 March 2022.
- and Osofsky HM, 'A rights turn in climate litigation' (2018) 7 Transnational Environmental Law 47 <<https://doi.org/10.1017/S2047102517000292>> accessed 15 March 2022.
- Pérez de las Heras B, 'European climate law(s): Assessing the legal path to climate neutrality' (2021) 21(2) Romanian Journal of European Affairs 19.

- Pirstner-Ebner R, *Energierrecht* (facultas 2020).
- Piska C, 'Art 191 AEUV' in Jäger T and Stöger K (eds), *EUV/AEUV* (Manz 2021) 31.
- Prickartz AC, 'Man muss mit den Riemen rudern, die man hat: Umweltschutz als Menschenrecht vor dem Europäischen Gerichtshof für Menschenrechte' (2015) 5 NLMR 386.
- Proelß A, 'Europäische Energieunion und internationaler Klimaschutz: Konkurrenz oder Konvergenz?' (2019) EurUP 72.
- Raible L, 'Expanding human rights obligations to facilitate climate justice? A note on shortcomings and risks' (2021) EJLT <www.ejltalk.org/expanding-human-rights-obligations-to-facilitate-climate-justice-a-note-on-shortcomings-and-risks/> accessed 25 January 2022.
- Rajamani L, 'The principle of common but differentiated responsibility and the balance of commitments under the climate regime' (2000) 9 RECIEL 120.
- Raschauer N and Riesz T, 'Grundsätzliches und Spezielles zum neuen Energieeffizienzgesetz des Bundes' (2014) ZÖR 365.
- Récsey C, 'Principles of European environmental law Art 191 (2) TFEU' in Wagner E and Pree M (eds), *European environmental law* (vol. 1, Trauner Verlag 2012) 77.
- Republic of Austria, 'Out of a sense of responsibility for Austria. Government programme 2020-2024' (2020) <<https://bit.ly/3INmUUK>> accessed 29 March 2022.
- Röttger-Wirtz S, 'Case C-616/17 *Blaise and Others*: The precautionary principle and its role in judicial review – Glyphosate and the regulatory framework for pesticide' (2020) 27 Maastricht Journal of European and Comparative Law 529-542 <<https://doi.org/10.1177/1023263X20949424>> accessed 10 February 2022.
- Saiger AJ, 'The Constitution speaks in the future tense. On the constitutional complaints against the Federal Climate Change Act' (2021) Verfassungsblog <<https://verfassungsblog.de/the-constitution-speaks-in-the-future-tense/>> accessed 25 January 2022.
- Sander P, 'Die Rolle des Klimaschutzes im Genehmigungsverfahren - Eine Untersuchung aus Anlass des Genehmigungsverfahrens zur "3. Piste" des Flughafens Wien/Schwechat' (2019) ZTR 8.
- Sands P and Peel J, *Principles of international environmental law* (4th edn, Cambridge University Press 2018).
- Schlacke S and Knodt M, 'Das Governance-System für die Europäische Energieunion und für den Klimaschutz' (2019) ZUR 404.
- , Köster M and Thierjung EM, 'Das „Europäische Klimagesetz“ und seine Konsequenzen' (2021) EuZW 620.
- et al., 'Implementing the EU climate law via the 'fit for 55' package' (2022) 1 Oxford Open Energy 1.
- Schlatter B, 'Alles neu bei den Erneuerbaren' (2021) ecolex 8.
- Schnedl G, 'Grundrechtsschutz gegenüber Umweltbeeinträchtigungen in der Rechtsprechung des Europäischen Gerichtshofs für Menschenrechte. Altes und Neues zu Art. 8 EMRK' in Hauser W and Thomasser A (eds), *Bildung, Wissenschaft, Politik. Instrumente zur Gestaltung der Gesellschaft* (Böhlau Verlag 2014) 647.
- , *Umweltrecht* (facultas 2020).
- Schuelken T and Sichla B, 'Das Europäische Klimagesetz – Inhalt, Rechtsfragen und Ausblick' (2021) UPR 1.
- Schulev-Steindl E, 'Klimaklage: VfGH weist Individualantrag gegen steuerliche Begünstigung der Luftfahrt zurück' (2020) 142 RdU 251.
- , 'Klimaklagen: Ein Trend erreicht Österreich' (2021) ecolex 17.

- , Hofer M and Franke L, ‘Gutachten: Evaluierung des Klimaschutzgesetzes’ (ClimLaw: Graz 2020) <<https://bit.ly/3NroTI0>> accessed 28 March 2022.
- Siddi M, ‘The European Green Deal: Assessing its current state and future implementation’ (2020) FIIA Working Paper 114.
- Sikora A, ‘European Green Deal – legal and financial challenges of the climate change’ (2021) 21 ERA Forum 681.
- Sobotta C, ‘Recent applications of the precautionary principle in the jurisprudence of the CJEU – a new yardstick in EU environmental decision making?’ (2020) 21 ERA Forum 723-735.
- Spier J, ‘The “strongest” climate ruling yet: The Dutch Supreme Court’s *Urgenda* judgment’ (2020) 67 Netherlands International Law Review 320.
- Squintani L, ‘Regulation of emissions from non-ETS sectors’ in Woerdman E, Roggenkamp M and Holwerda M (eds), *Essential EU climate law* (2nd edn, Edward Elgar Publishing Ltd 2021).
- Stangl F, ‘Zur Genese des Europäischen Klimagesetzes. Wegbereiter für die Klimaneutralität 2050’ (2021) NR 14.
- and Mauger R, ‘EU climate policy’ in Woerdman E, Roggenkamp M and Holwerda M (eds), *Essential EU climate law* (2nd edn, Edward Elgar Publishing Ltd 2021).
- Staudinger I, ‘The European Green Deal – what is in a name?’ in Schulev-Steindl E, Ruppel OC and Kerschner F (eds), *Climate law – current opportunities and challenges. Essays from the official opening of ClimLaw: Graz* (Eleven International Publishing 2021) 115.
- Steininger KW et al., ‘Klimapolitik in Österreich: Innovationschance Coronakrise und die Kosten des Nicht-Handelns’ (2020) Wegener Center Research Briefs 32 <https://wegcwww.uni-graz.at/publ/wegcwb/2020/WEGC-RB1-2020_Steininger-et-al_Klimapolitik-InnoChanceCorona-KostenNichthandeln.pdf> accessed 25 January 2022.
- UNEP, ‘Climate change and human rights’ (UNEP 2015) <<https://bit.ly/3817vU1>> accessed 28 March 2022.
- Unger H, ‘Verfassungsrechtliche Vorgaben für CO₂- und Umweltsteuern in Österreich’ in Kirchengast G et al. (eds), *CO₂- und Umweltsteuern. Wege zu einer umwelt-, sozial- und wirtschaftsge-rechten Steuerreform* (Böhlau Verlag 2020) 172.
- Van Asselt H, ‘Trade and climate disputes before the WTO: Blocking or driving climate action?’ in Alogna I et al. (eds), *Climate change litigation: Global perspectives* (Brill 2021) 433-461 <https://doi.org/10.1163/9789004447615_020> accessed 10 February 2022.
- Vedder H, ‘Energy efficiency’ in Woerdman E, Roggenkamp M and Holwerda M (eds), *Essential EU climate law* (2nd edn, Edward Elgar Publishing Ltd 2021).
- Wagner G, ‘Klimaschutz durch Gerichte’ (2021) NJW 2256.
- Weber R and Hösli A, ‘Corporate climate responsibility – the rise of a new governance issue’ (2021) *sui generis* 83 <<https://doi.org/10.21257/sg.171>> accessed 10 February 2022.
- Wegener B, ‘*Urgenda* – Weltrettung per Gerichtsbeschluss?’ (2019) ZUR 3, 10ff.
- Wewerinke-Singh M, ‘State responsibility for human rights violations associated with climate change’ in Jodoin S, Duyck S and Johl A (eds), *Routledge handbook of human rights and climate governance* (Routledge 2018).
- Winter G, ‘Armando Carvalho et alii versus Europäische Union: Rechtsdogmatische und staatstheoretische Probleme einer Klimaklage vor dem Europäischen Gericht’ (2019) ZUR 259.
- Woerdman E, ‘EU emissions trading system’ in Woerdman E, Roggenkamp M and Holwerda M (eds), *Essential EU climate law* (2nd edn, Edward Elgar Publishing Ltd 2021).
- Wolf S et al., ‘The European Green Deal – more than climate neutrality’ (2021) 2 *Intereconomics* 99.

Woolley O, 'Renewable energy consumption' in Woerdman E, Roggenkamp M and Holwerda M (eds), *Essential EU climate law* (2nd edn, Edward Elgar Publishing Ltd 2021).

Yoshida K and Setzer J, 'The trends and challenges of climate litigation and human rights' (2020) 2 *European Human Rights Law Review* 140.

Cases

Austria

Greenpeace et al. v Austria, VfGH 30.09.2020, G 144-145/2020-13, V 332/2020-13, the decision (in German) is available at <<http://climatecasechart.com/climate-change-litigation/non-us-case/greenpeace-v-austria/>> accessed 25 January 2022.

Vienna-Schwechat Airport Expansion, BVwG 02.02.2017, W109 2000179-1, the decision (in German) is available at <<http://climatecasechart.com/climate-change-litigation/non-us-case/in-re-vienna-schwachat-airport-expansion/>> accessed 25 January 2022; VfGH 29.06.2017, E 875/2017, E 886/2017, the decision (unofficial English translation) is available at <<http://climatecasechart.com/climate-change-litigation/non-us-case/in-re-vienna-schwachat-airport-expansion/>> accessed 25 January 2022.

Germany

Neubauer et al. v Germany, Bundesverfassungsgericht 24.03.2021, 1 BvR 2656/18, 1 BvR 78/20, 1 BvR 96/20, 1 BvR 288/20, for an English translation see <<http://climatecasechart.com/climate-change-litigation/non-us-case/neubauer-et-al-v-germany/>> accessed 25 January 2022.

Switzerland

Union of Swiss Senior Women for Climate Protection v Swiss Federal Council and Others, Bundesgericht 05.05.2020, 1C_37/2019 (*Klimasenioren v Switzerland*), the decision (unofficial English translation) is available at <<http://climatecasechart.com/climate-change-litigation/non-us-case/union-of-swiss-senior-women-for-climate-protection-v-swiss-federal-parliament/>> accessed 25 January 2022.

The Netherlands

Urgenda Foundations v State of the Netherlands, Hoge Raad 20.12.2019, 19/00135, ECLI:NL:HR:2019:2007, an English translation is available at <<https://bit.ly/3KcQ9RT>> accessed 28 March 2022.

United Kingdom

Friends of the Earth Ltd and Others v Heathrow Airport, R (on the application of Friends of the Earth Ltd and Others) v Heathrow Airport Ltd UKSC 2020/0042, available at <www.supremecourt.uk/cases/docs/uksc-2020-0042-judgment.pdf> accessed 25 January 2022.

European Court of Human Rights

Budayeva et al. v Russia App. no. 15339/02 (ECtHR 20 March 2008).

Duarte Agosthino and Others v Portugal and Others App. no. 39371/20 (ECtHR, pending), see: <<https://youth4climatejustice.org/wp-content/uploads/2020/11/GLAN-ECtHR-Application.pdf>> accessed 25 January 2022.

Klimaseniorinnen v Switzerland App. no. 536000/20 (ECtHR, pending) <<https://bit.ly/3LsH1cN>> accessed 25 January 2022.

Kolyadenko et al. v Russia App. no. 17423/05 (ECtHR 28 February 2012).

McGinley and Egan v the United Kingdom App. no. 21825/93 and 23414/94 (ECtHR 9 June 1998).

Mex M. v Austria (pending), the application is available at <<http://climatecasechart.com/climate-change-litigation/non-us-case/mex-m-v-austria/>> accessed 29 April 2022.

Öneryildiz v Turkey App. no. 48939/99 (ECtHR 30 November 2004).

Özel et al. v Turkey App. no. 14350/05 (ECtHR 17 November 2015).

Tătar v Romania App. no. 67021/01 (ECtHR 20 January 2001).

European Court of Justice

Armando Carvalho and Others v European Parliament and Council of the European Union, Case T-330/18 *Carvalho and Others v Parliament and Council* (2019) ECLI:EU:T:2019:324; Case C-565/19 *P Armando Carvalho and Others v European Parliament and Council of the European Union* (2021) ECLI:EU:C:2021:252.

Case C-2/00 *Cartagena Protocol* (2002) ECR I-09713, ECLI:EU:C:2001:664, Rn 29.

Case C-5/16 *Poland v Parliament and Council* (2018) ECLI:EU:C:2018:483.

Opinion 2/13 of the ECJ of 18 December 2014, ECLI:EU:C:2014:2454.

The first Austrian climate lawsuit

Julia Wallner

Abstract

Globally, climate litigants seek to hold governments and companies responsible for their contribution to climate change and try to enforce effective climate action while raising public awareness for climate change. In 2020, the trend of climate litigation reached Austria: Numerous plaintiffs, led by the environmental organisation Greenpeace, filed a human rights-based climate lawsuit before the Austrian Constitutional Court, alleging that the preferential tax treatment of air travel over train travel violated their fundamental rights. However, the application was dismissed for being inadmissible, and a corresponding procedure is now pending before the ECtHR. Against this background, this article seeks to understand the reasons for the lawsuit's rejection and thereby elaborates on the obstacles the Austrian Constitution presents to effective climate protection and its judicial enforcement. Further, the challenges climate lawsuits against states face will be examined with a particular focus on the specific issues arising in the context of human rights-based claims.

1 Introduction

The Austrian Panel on Climate Change (APCC) highlighted that Austria is particularly affected by climate change.¹ In 2018, the increase in average temperature amounted to more than 2°C compared to pre-industrial levels and was more than twice as high as the global average.² Climate change effects can already be felt in Austria: They include, *inter alia*, a higher number of hot days and tropical nights, heavy precipitation events and mudslides, the melting of glaciers and increased occurrence of parasites such as the bark beetle. Those effects will further intensify and proliferate in the future.³ Yet, climate protection measures taken in Austria were little

1 Austrian Panel on Climate Change, *Österreichischer Sachstandsbericht Klimawandel 2014 (AAR14)* (Verlag der Österreichischen Akademie der Wissenschaften 2014) 231, the report is available at <<https://ccca.ac.at/wissenstransfer/apcc/aar14>> accessed 20 October 2021.

2 Rechnungshof Österreich, 'Klimaschutz in Österreich – Maßnahmen und Zielerreichung 2020, Bericht des Rechnungshofes' (Rechnungshof Österreich 2021) 11 <<https://bit.ly/3NpPUWh>> accessed 29 March 2022.

3 Michael Anderl et al., *Klimaschutzbericht 2021* (Umweltbundesamt GmbH 2021) 27 and 28 <www.umweltbundesamt.at/fileadmin/site/publikationen/rep0776.pdf> accessed 20 October 2021.

ambitious and have, so far, not achieved any significant emission reduction. Quite the opposite is the case: national greenhouse gas (GHG) emissions have risen by roughly 5% throughout the last 30 years while they have decreased by 24% on average in all EU member states.⁴ Thereby, the transportation sector proves particularly problematic as transport emissions have risen by tremendous 74% since 1990 and in 2019, accounted for 30% of total Austrian GHG emissions.⁵

Against this background, the first Austrian climate lawsuit was raised before the Constitutional Court (*Verfassungsgerichtshof*) in February 2020.⁶ Therein, over 6,000 individuals, led by the environmental organisation Greenpeace, alleged that the preferential treatment of air traffic compared to train traffic, which is provided for in the Federal Value Added Tax Act (*Umsatzsteuergesetz*)⁷ and the Federal Mineral Oil Tax Act (*Mineralölsteuergesetz*)⁸, constituted a violation of their fundamental rights. These tax benefits lead to lower prices for airline tickets and thus promote climate-damaging behaviour; the effects of the climate crisis, in turn, violate the applicants' fundamental rights, in particular their right to life (Article 2 ECHR, Article 2 CFR), their right to respect for private and family life (Article 8 ECHR, Article 7 CFR) and their right to equality before the law (Article 7 B-VG, Article 2 StGG, Article 20 CRF). In the following, the background of the application and the reasons for its rejection for lack of standing by the Constitutional Court shall be examined in some detail.

2 Climate litigation as a global phenomenon

First, it has to be noted that the Austrian climate lawsuit does not constitute a stand-alone attempt to enforce climate protection measures but forms part of the global phenomenon of climate litigation: In light of the ever-intensifying climate crisis, plaintiffs around the world seek to hold states and companies accountable for their contribution to climate change and resulting damages.⁹ They demand that regulatory gaps between scientific recommendations and often little ambitious climate policies

4 Rechnungshof Österreich (n 2) 11, 12.

5 Michael Anderl et al. (n 3) 69.

6 The application is available at <www.klimaklage.at/wp-content/uploads/2020/09/Klimaklage-Individualantrag-Feb2020.pdf> accessed 1 October 2021; the Constitutional Court's decision is available at <<https://bit.ly/3qLaN4h>> accessed 29 March 2022.

7 *Umsatzsteuergesetz* 1994 Federal Gazette I 1994/663 (Federal Value Added Tax Act).

8 *Mineralölsteuergesetz* 1995 Federal Gazette 1994/630 (Federal Mineral Oil Tax Act).

9 Joana Setzer and Catherine Higham, 'Global trends in climate change litigation: 2021 snapshot' (Grantham Research Institute on Climate Change and the Environment, Columbia Law School Sabin Center for Climate Change Law, Centre for Climate Change Economics and Policy 2021) <www.lse.ac.uk/granthaminstitute/wp-content/uploads/2021/07/Global-trends-in-climate-change-litigation_2021-snapshot.pdf> accessed 24 October 2021.

are closed and thereby raise public awareness for the all-encompassing task of climate change.¹⁰ Despite the relatively low success-rate¹¹, some encouraging victories have been achieved: In 2019, the Dutch Supreme Court ordered the government to reduce national GHG emissions by 25% until 2020,¹² and in 2021, the German Constitutional Court ruled that the Federal Climate Protection Act violated future freedom protected by fundamental rights.¹³ A sensational success was also accomplished against the carbon major Royal Dutch Shell: In 2021, a Dutch court ordered RDS to reduce the GHG emissions of the Shell Group's entire supply chain (including suppliers and consumers) by 45% until 2030.¹⁴ With the first Austrian climate lawsuit in 2020, the trend of climate litigation has now reached Austria.¹⁵

3 Constitutional background in Austria

Austria is a party to the UN Framework Convention on Climate Change (UNFCCC)¹⁶ and the Paris Agreement¹⁷, and, by virtue of its EU membership, obliged to reduce its GHG emissions in sectors not covered by the EU Emission Trading System (ETS).¹⁸ The current Effort Sharing Regulation¹⁹ foresees a reduction in GHG emissions in the non-ETS sector of 36% until 2030 compared to 2005 levels²⁰ – a

10 Eva Schulev-Steindl, 'Klimaklagen: Ein Trend erreicht Österreich' (2021) *ecolex* 17.

11 Wilhelm Bergthaler, Ferdinand Kerschner and Eva Schulev-Steindl, 'Klimaklage nun auch in Österreich' (2019) *Recht der Umwelt* 178.

12 Supreme Court of the Netherlands 20 December 2019 19/00135, the judgment *Urgenda* is available at <www.urgenda.nl/wp-content/uploads/ENG-Dutch-Supreme-Court-Urgenda-v-Netherlands-20-12-2019.pdf> accessed 24 October 2021.

13 Federal Constitutional Court of Germany 24 March 2021 1 BvR 2656/18, 1 BvR 78/20, 1 BvR 96/20, 1 BvR 288/20, the judgment *Neubauer* is available at <<https://bit.ly/3JPNqy6>> accessed 29 March 2022.

14 The Hague District Court 26 May 2021 C/09/571932 / HA ZA 19-379, the judgment *Royal Dutch Shell* is available at <<http://climatecasechart.com/climate-change-litigation/non-us-case/milieudefensie-et-al-v-royal-dutch-shell-plc/>> accessed 24 October 2021.

15 Schulev-Steindl (n 10).

16 United Nations Framework Convention on Climate Change (adopted 9 May 1992, entered into force 21 March 1994) 1771 UNTS 107 (UNFCCC).

17 Paris Agreement (adopted 12 December 2015, entered into force 4 November 2016) UNTC No 54113.

18 The Emissions Trading System puts a cap on total GHG emissions permissible in certain sectors and allows for the trading of respective emission permits; the ETS covers about 40% of total EU GHG emissions; for further details see, e.g. <https://ec.europa.eu/clima/eu-action/eu-emissions-trading-system-eu-ets_en> accessed 27 October 2021.

19 Regulation (EU) on binding annual greenhouse gas emission reductions by Member States from 2021 to 2030 contributing to climate action to meet commitments under the Paris Agreement and amending Regulation (EU) No 525/2013 (EU Effort Sharing Regulation) (2018) OJ L 156/26.

20 In 2021, the European Commission proposed to amend the Effort Sharing Regulation: the proposal foresees GHG emission reduction of 40% in relation to 2005 levels until 2030 in the

target that is to be achieved particularly through appropriate legislative and administrative measures. However, current projections show that Austria is likely to miss its 2030 EU emission reduction targets in the non-ETS sector.²¹ According to calculations by the Austrian Court of Audit, this may result in compensation payments (purchase of emission certificates) of up to 9.2 billion Euro.²²

In part, this alarming trend may be traced back to the constitutional framework, which is, so to say, not originally dedicated to climate protection: To begin with, the Austrian constitution does not (yet) contain a fundamental right to a healthy environment.²³ Plaintiffs who want to challenge the constitutionality of climate protection measures perceived as insufficient thus may rely on other fundamental rights, in particular the right to life and the right to private and family life (Articles 2 and 8 ECHR), which are considered to have a climate-relevant scope of protection.²⁴ However, one has to bear in mind that the Constitutional Court has not yet handed down any decision on positive obligations in the climate change context – prospects of success of respective claims are thus uncertain.

Nonetheless, climate protection is a constitutional concern: According to the Federal Constitutional Act on Sustainability (*BVG Nachhaltigkeitt*)²⁵, Austria is committed to comprehensive environmental protection and sustainability.²⁶ This state objective is binding for all public authorities (legislative, executive, judiciary) and, according to academia, causes the unconstitutionality of conflicting ‘simple’ law.²⁷ The

non-ETS sector and requires Austria to reduce GHG emissions by 48% until 2030, see: Commission, ‘Proposal for a Regulation of the European Parliament and of the Council amending Regulation (EU) 2018/842 on binding annual greenhouse gas emission reductions by Member States from 2021 to 2030 contributing to climate action to meet commitments under the Paris Agreement’ COM (2021) 555 final, 14 July 2021.

- 21 International Energy Agency, ‘Austria 2020 Energy Policy Review’ (International Energy Agency, May 2020) 81 <www.iea.org/reports/austria-2020> accessed 27 October 2021.
- 22 Rechnungshof Österreich, ‘Climate protection is not centrally coordinated in Austria’ (Rechnungshof Österreich, 16 April 2021) <<https://bit.ly/3iOT3k0>> accessed 29 March 2022.
- 23 The anchoring of a fundamental right to climate protection was requested in the course of the 2020 climate referendum <<https://klimavolksbegehren.at/forderungen/>> accessed 20 October 2021; a respective study, commissioned by the National Parliament, recently confirmed that the inclusion of a fundamental right to climate protection would be feasible: Daniel Ennöckl, ‘Kurzstudie Möglichkeiten einer verfassungsrechtlichen Verankerung eines Grundrechts auf Klimaschutz’ (Parliament 2021), the study is available at <<https://bit.ly/3qK6MNC>> accessed 29 March 2022.
- 24 The Dutch Supreme Court in its much-cited *Urgenda* decision (n 12) recently confirmed that a duty to protect against the climate crisis and its disastrous impacts arises from said provisions.
- 25 Federal Constitutional Act on Sustainability, Animal Protection, Comprehensive Environmental Protection, on Water and Food Security as well as Research, Federal Gazette I 2013/111, an English translation is available at <<https://bit.ly/3uBzvFt>> accessed 29 March 2022.
- 26 §§ 1, 3 Federal Constitutional Act on Sustainability.
- 27 Ferdinand Kerschner, ‘Klimaschutz aus umweltrechtlicher, insbesondere auch aus völkerrechtskonformer Sicht’ (2019) *Recht der Umwelt* 49, 50.

BVG does not, however, create any subjective rights.²⁸ Further, its scope has been called into question by the controversially discussed judgement of the Constitutional Court regarding the expansion of Vienna Airport by a third runway.²⁹ Therein, the Court suggested that the state objective only is to be considered in the balancing of interest if there is a respective reference in simple law.³⁰ It does not, however, constitute an independent public interest that requires consideration in balancing decisions.³¹ This view challenged prevailing scholarly opinion and caused considerable and lasting uncertainty as to the legal relevance of the BVG Sustainability.³²

In addition, the special characteristics of the Austrian Constitutional Court and its limited competence to review climate protection measures have to be considered: The Austrian Constitution does not allow the contesting of legislative inaction before the Constitutional Court; instead, only existing laws may be reviewed as to their constitutionality.³³ Thereby, the court acts as a ‘negative legislator’. Thus, it may repeal laws or legal provisions it finds to be unconstitutional but may not give concrete orders to the legislator (as, for example, the Dutch Supreme Court has done in the *Urgenda* decision).³⁴ For this reason, the plaintiffs were compelled to only challenge specific legal provisions – presumably with the aim of establishing climate change-related positive obligations at the national level that in turn lead to stricter climate protection measures and enable future climate lawsuits.

28 Eduard Christian Schöpfer, ‘Gedanken zur Verankerung eines Grund- bzw. Menschenrechts auf eine gesunde Umwelt’ (2019) Newsletter Menschenrechte 183, 184.

29 Austrian Constitutional Court 29 June 2017 E 875/2017-32, E 886/2017-31, the judgment is available at <<https://bit.ly/3uA7hL9>> accessed 29 March 2022.

30 Gottfried Kirchengast et al., ‘Flughafen Wien: VfGH behebt Untersagung der dritten Piste durch das BVwG wegen Willkür’ (2017) *Recht der Umwelt* 252, 258.

31 Gerhard Schnedl, ‘Die Rolle der Gerichte im Klimaschutz’ in Gottfried Kirchengast et al. (eds), *Klimaschutzrecht zwischen Wunsch und Wirklichkeit* (Studien zu Politik und Verwaltung Bd. 112, Böhlau Verlag Wien 2018) 139, 140.

32 Schnedl (n 31) 140.

33 Peter Oberndorfer and Britta Wagner, ‘Gesetzgeberisches Unterlassen als Problem Verfassungsgerichtlicher Kontrolle’ (Landesbericht Österreich für den XIV. Kongress der Konferenz der Europäischen Verfassungsgerichte in Vilnius, Litauen vom 2. bis 7. Juni 2008) <www.confueuconstco.org/reports/rep-xiv/report_Austria_de.pdf> accessed 26 October 2021.

34 Walter Berka, *Verfassungsrecht* (8th edn, Verlag Österreich 2021) 369.

4 The claim

4.1 Contested provisions

The need for a greening of the Austrian tax system has not only been acknowledged by the current government program³⁵, it is also evident from the tax provisions contested in the first Austrian climate lawsuit: In principle, the Federal Value Added Tax Act prescribes a (reduced) VAT rate of 10% for the domestic part of international passenger transport services, regardless of the means of transport chosen.³⁶ However, international air travel is exempt from this general rule and the VAT does not apply.³⁷ This means that consumers have to pay 10% more for a train ticket than for a plane ticket, provided that the net ticket price is the same and transport companies pass on the tax burden to the consumers via the ticket price. In addition, the Federal Mineral Oil Tax Act excludes the aviation fuel paraffin from the mineral oil tax.³⁸ Unlike railway companies, airlines thus do not have to pay taxes on propellants required for the transportation service. Consumption taxes for propellants are generally passed on to consumers via a higher net ticket price for train tickets. However, this net ticket price serves as the basis for calculating the VAT, making train tickets more expensive on two grounds: a higher calculation basis for the VAT + a tax rate of 10%. In fact, the applicants demonstrated that a plane ticket from Vienna to Munich and back only costs 119 Euro whereas a train ticket for the same trip amounts to 206 Euro. At the same time, a flight causes, on average, about 31 times more CO₂ than a train journey.

4.2 Admissibility

By means of an individual application for standard control (*Individualantrag auf Normenkontrolle*),³⁹ the applicants asserted the unconstitutionality of the tax provisions that result in preferential treatment of air traffic and thereby fuel the climate crisis: An individual application is a subsidiary means of legal protection and may only be raised if the applicant's legal position is directly affected by the contested norm ('direct concern') and obtaining a judgement or administrative decision is un-

35 'Out of a sense of responsibility for Austria. Government Programme 2020-2024' (Die neue Volkspartei, Die Grünen – Die Grüne Alternative, 2020) 12 <<https://bit.ly/3INmUUK>> accessed 29 March 2022.

36 § 10 para 2 no 6 *Umsatzsteuergesetz*.

37 § 6 para 1 no 2 lit d *Umsatzsteuergesetz*.

38 § 4 para 1 no 1 *Mineralölsteuergesetz*.

39 The individual application for standards control is anchored in Article 140 of the Federal Constitutional Law, an English translation is available at <<https://bit.ly/3Liiw1A>> accessed 29 March 2022.

reasonable ('no reasonable diversion').⁴⁰ In its case law, the Constitutional Court further elaborated the first criterion of 'direct concern' and held that the contested norm must affect the applicant's legal sphere; mere factual or economic effects do not suffice. Further, the applicant must (in general) be the addressee of the contested norm and allege its unconstitutionality. And finally, the interference with the legal sphere must be sufficiently determined by the contested norm as to its nature and extent and it must be actual, not merely potential. As to the second criterion, 'no reasonable diversion', the Constitutional Court held that unlawful conduct never constitutes a reasonable diversion, even if a judicial decision or a ruling could be obtained.⁴¹

The applicants acknowledged that the contested tax provisions are directed at businesses⁴² and that they were thus not norm addressees in the strict sense. However, they nonetheless considered themselves to be directly affected, as it is not always required to be a norm addressee: In fact, the Constitutional Court had repeatedly assumed that non-addressees are directly affected if the content and purpose of the provision in question affects their legal sphere.⁴³ Both the VAT and the mineral oil tax are consumption taxes which are designed to burden the consumers and, according to the applicants, are collected from businesses solely for reasons of practicability. The applicants thus concluded that the tax provisions directly affect their legal sphere: Their preferred means of transport is disadvantaged, and they have to pay higher prices for utilising it, which violates the right to equality before the law. Furthermore, the contested provisions violate positive obligations under the right to life (Article 2 ECHR) and the right to respect for private and family life (Article 8 ECHR). Pursuant to those provisions, the Austrian state is obliged to take effective measures against the climate crisis to protect its inhabitants' life, health and well-being. However, it disregards this obligation by not achieving its GHG reduction targets and even incentivises climate-damaging behaviour by providing subsidies to carbon-intensive airline companies, which in turn offer cheaper ticket prices. The applicants further held that the interference with their legal sphere is sufficiently determined and actual as the tax provisions are directly effective towards them: Tax benefits for aviation result in higher prices for train tickets and fuel the climate crisis. Also, there is no reasonable diversion to refer to the Constitutional Court for stand-

40 Peter Bußjäger, 'Art 140 B-VG' in Arno Kahl et al. (eds), *Kommentar zum Bundesverfassungsrecht, B-VG und Grundrechte* (Jan Sramek Verlag 2021) 1471.

41 Berka (n 34) 376ff.

42 Businesses are responsible for paying the VAT according to § 19 *Umsatzsteuergesetz*; the holder of the tax warehouse is responsible for paying the mineral oil tax according to § 22 *Mineralölsteuergesetz*.

43 For example, the Constitutional Court's decision on data retention, see: Austrian Constitutional Court 27 June 2014 G 47/2012-49, G 59/2012-38, G 62/2012-46, G 70/2012, G 81/2012-36, available at <<https://bit.ly/3wLDoKH>> accessed 29 March 2022.

ards review. The applicants, therefore, concluded that the claim was admissible and continued to outline their constitutional concerns.

4.3 Merits

On the merits, the applicants argued that the contested tax provisions violated the right to life, the right to private and family life and the right to equality before the law:

First, the applicants asserted a violation of the right to equality before the law. This fundamental right requires the legislator to treat equal matters equally and unequal matters unequally and prohibits objectively unjustifiable differentiations.⁴⁴ In addition, the principle of equality is understood to contain a general requirement of objectivity, prohibiting the enacting of regulations that cannot be objectively justified.⁴⁵ In their claim, the applicants first asserted that railways and planes constitute equivalent means of transportation: a well-established highspeed train network spans Europe, railway and airline companies thus compete with regard to short- and medium-distance transportation. Yet, airline companies and their customers enjoy a decisive advantage: ticket prices are lower as obtaining fuels is tax-free, and no VAT is due for the national part of cross-border air travel. According to the applicants, this exemption is unsystematic for granting benefits exclusively to airline companies and not objectively justified. It is clearly not in the public interest: Not only does the transport sector raise serious concerns due to the significant rise in GHG emissions and great deviations from sectoral targets. Incentivising climate-damaging behaviour also contradicts Austria's EU and international law commitments and reinforces the risk of already looming penalty payments. Further, behavioural changes may only be achieved if climate-damaging behaviour is not promoted by a state-subsidised penalty for environmentally conscious consumers. The applicants held that respective tax provisions thus violate the principle of equality before the law by burdening environmentally conscious customers who chose to travel per train.

Secondly, the applicants alleged a violation of their right to life. The right to life is understood to be the 'prerequisite of all fundamental rights' and obliges the state to comprehensively protect life from interference by public authorities or (private) third parties.⁴⁶ According to the ECtHR, the right to life further entails positive obligations

44 Berka (n 34) 587.

45 Lamiss Khakzadeh, 'Artikel 7 B-VG' in Arno Kahl et al. (eds), *Kommentar zum Bundesverfassungsrecht, B-VG und Grundrechte* (Jan Sramek Verlag 2021) 45.

46 Christoph Grabenwarter and Katharina Pabel, *Europäische Menschenrechtskonvention: Ein Studienbuch* (7th edn, C.H. Beck 2021) § 20 recital 1.

in case of external events such as environmental threats and natural disasters.⁴⁷ Such positive obligations also exist with regard to the climate crisis that poses severe threats to the applicants' lives. It is clear from the IPCC reports that many climate change-related dangers have already materialised, and that they will further intensify and broaden in the future.⁴⁸ Only immediate and drastic measures may prevent or at least limit the disastrous consequences of the climate crisis. Against this background, the applicants brought forward that state subsidies for emissions-intensive aviation are not only counterproductive but actively violate the obligation to protect under Article 2 ECHR. Positive obligations in the transportation sector oblige the state to promote climate-friendly behaviour, not the opposite. And due to the absolute character of the right to life, no justification exists – the contested tax provisions violate Article 2 ECHR.

Thirdly, two of the applicants alleged a violation of their right to respect for private and family life. This fundamental right comprehensively protects private and family life but also one's health, physical and mental integrity and general well-being.⁴⁹ According to the ECtHR, the fundamental right protects against environmental interferences, provided that they reach a minimum threshold. Thereby, the circumstances of the individual case, such as intensity and duration of the nuisance or its physical and mental effects, are decisive in determining the minimum threshold.⁵⁰ The ECtHR has further affirmed the applicability of Article 8 ECHR in the case of natural disasters.⁵¹ Against this background, the applicants alleged that the contested tax provisions violate Article 8 ECHR as they promote climate-damaging behaviour and are partly responsible for the health consequences of climate change-induced extreme weather events including heatwaves, floods and storms. One of the applicants (a 72-year-old female) argued that longer periods of hot weather result in greater and more frequent stress on her circulatory system. In this context, she alleged that people over 65 years are particularly affected by heatwaves, and 80% of heat-related deaths occur in people 75 years and older, with women being more affected than men. Another applicant, who suffers from a temperature-dependent form of multiple sclerosis, brought forward that the increased number of warm and hot days severely impair his health and well-being: at temperatures of 25°C or higher, he experiences signs of paralysis which worsen as temperature rises. Due to the warming caused by climate change, the applicant is thus more frequently dependent on a wheelchair. The

47 Reinhard Klaushofer, 'Artikel 2 EMRK' in Arno Kahl et al. (eds), *Kommentar zum Bundesverfassungsrecht, B-VG und Grundrechte* (Jan Sramek Verlag 2021) 1762.

48 See the IPCC reports available at <www.ipcc.ch/reports/> accessed 30 October 2021.

49 Berka (n 34) 487.

50 Alexander Forster, 'Artikel 8 EMRK' in Arno Kahl et al. (eds), *Kommentar zum Bundesverfassungsrecht, B-VG und Grundrechte* (Jan Sramek Verlag 2021) 1872f.

51 *Budayeva and Others v Russia* App no 15339/02, 21166/02, 20058/02, 11673/02 and 15343/02 (ECtHR 20 March 2008).

applicants further argued that the interference with their fundamental right to private and family life is not justified. The contested tax provisions are diametrically opposed to the public interest as the advancement of the climate crises entails serious consequences for life and health and is detrimental to the general economic well-being. They held that a violation of positive obligations under Article 8 ECHR was thus present.

5 The Constitutional Court's decision

In its decision of 30 September 2020, the Constitutional Court dismissed the application for being inadmissible.⁵² The Court held that the applicants were not affected in their legally protected sphere and were not the addressees of the relevant tax provisions:

Although the court recognised that the VAT and the mineral oil tax are consumption taxes, it determined that it depends on a multitude of factors whether and to what extent the tax burden is actually passed on to the consumer. It follows that consumers are not affected in their legal sphere, regardless of whether the tax burden is actually passed on to them or not.⁵³

In addition, the Court acknowledged that, in earlier decisions, it had recognised applicants as norm addressees even if the contested provisions were not directly addressed to them. The prerequisite for this recognition was that purpose and content of the norm in question not only affected the applicant's personal situation but interfered with his/her legally protected sphere. However, in the present case, a similar interference with the applicants' legal sphere is not present as the applicants stated that they do not make use of the services of air carriers.⁵⁴ The Court concluded that the applicants could therefore not be the addressees of the relevant tax provisions which only apply to air transportation. Consequently, it rejected the individual application for standard control for being inadmissible.

6 Application to the European Court of Human Rights

Following the Constitutional Court's rejection of the first Austrian climate lawsuit, one of the applicants filed a complaint with the European Court of Human Rights

52 Austrian Constitutional Court 29 June 2017 E 875/2017-32, E 886/2017-31.

53 Ibid recital 66f.

54 Ibid recital 68.

(ECtHR).⁵⁵ The applicant suffers from a temperature-sensitive form of multiple sclerosis: From a temperature of 25°C he shows signs of paralysis and is dependent on the wheelchair and from a temperature of 30°C he completely loses control over his muscular strength.

His claim might be summarised as follows: The recent increase in warm and hot days due to the climate crisis severely burdens the applicant and poses a serious risk to his physical and mental integrity and the quality of his private and family life. Austria thus violates its positive obligations pursuant to Article 8 ECHR, which requires it to take reasonable and appropriate measures to effectively protect the health and well-being of the applicant (and all its citizens). It follows from ECtHR case law that Austria is required to offer effective protection from the climate crisis with due diligence.⁵⁶ This obligation is informed by the best available science as expressed in the IPCC reports and the international consensus to reach the 1.5°C temperature target embodied in the Paris Agreement. Although the ECtHR recognised that the choice of means to fulfil positive obligations falls within the state's 'margin of appreciation', it found a violation of Article 8 ECHR in cases of 'manifest errors of appreciation'.⁵⁷ The applicant derives a respective error of appreciation from the fact that Austria failed to establish an appropriate administrative and legislative framework to achieve emission reductions. This is vividly exemplified by the fact that no emission reduction has been achieved in the period 1990-2019⁵⁸ and by the Federal Climate Protection Act (*Klimaschutzgesetz*),⁵⁹ which does not provide for reduction targets for the years 2021 onwards. A follow-up law for climate protection was announced but has not yet been passed.⁶⁰ According to the applicant, the absence of (ambitious) legal regulations on emission reduction, combined with the above-mentioned state subsidies for climate-damaging behaviour, amount to a violation of Article 8 ECHR.

Moreover, the Austrian legal system did not allow the applicant to assert his claim: As mentioned above, the Austrian Constitution does not offer a possibility for challenging legislative inaction before the Constitutional Court or any other court.⁶¹ Also, the current Federal Climate Protection Act does not contain a complaint mechanism if no or too unambitious emission reduction targets are set or if respective

55 The application is available at <http://climatecasechart.com/climate-change-litigation/wp-content/uploads/sites/16/non-us-case-documents/2021/20210325_13412_complaint.pdf> accessed 29 October 2021.

56 *Fadeyeva v Russia* App no 55723/00 (ECtHR, 30 November 2011) recital 128.

57 *Buckley v United Kingdom* App no 20348/92 (ECtHR, 29 September 1996).

58 Statista, 'Treibhausgas-Emissionen in Österreich von 1990 bis 2019' (Statista, 3 February 2021) <<https://bit.ly/3q1qMLk>> accessed 12 March 2021.

59 *Klimaschutzgesetz* Federal Gazette I 2011/106 (Federal Climate Protection Act).

60 Pressedienst der Parlamentsdirektion, 'Gewessler peilt Begutachtung für Klimaschutzgesetz ab Sommer an' (APA OTS, 9 June 2021) <<https://bit.ly/3iLnLEw>> accessed 29 March 2021.

61 Oberndorfer and Wagner (n 33).

targets are not met or at risk of not being met.⁶² And finally, there is also no general duty of care, non-compliance with which may be established in court. Accordingly, the applicant had resorted to the only option available, namely an individual application for standard control by the Constitutional Court according to Article 140 B-VG. This application is in turn subject to restrictions: Only individual provisions can be challenged on the grounds of their unconstitutionality, always provided that they directly affect the applicant who further needs to be the norm addressee. As shown above, the attempt to assert a right to more effective climate protection failed due to the narrow interpretation of the admissibility criteria by the Constitutional Court. Altogether, the applicant concluded, this amounts to a lack of legal protection against the climate crisis and a violation of the right to an effective remedy according to Article 13 ECHR. A respective decision by the ECtHR has not yet been issued.

7 Remarks

7.1 On the relationship between courts and legislators

It becomes clear from the above that climate lawsuits may be understood as a response to institutional failure⁶³: despite ever more alarming warnings from the scientific community about the disastrous consequences of the climate crisis and its incipient materialisation⁶⁴, global emissions have not yet peaked.⁶⁵ Arguably, the complexity of the climate crisis with its global nature, multiple causes and interrelated impacts make it a ‘super-wicked problem’⁶⁶, which existing institutions and legislators are not equipped to tackle effectively. Against this background, the novel instrument of climate litigation seeks to ‘debate, enforce, augment, or challenge climate legislation’.⁶⁷ Courts thus enter the discourse on climate protection and are called upon to review legislative and executive measures and policies. At the same time, concerns have been raised about the prominent role of courts in climate protection: Different scholars and courts suggested that the shaping of climate policies

62 Federal Climate Protection Act (n 59).

63 Joana Setzer and Lisa C Vanhala, ‘Climate change litigation: A review of research on courts and litigants in climate governance’ (2019) 10 (3) WIREs climate change, 7 <<https://wires.onlinelibrary.wiley.com/doi/epdf/10.1002/wcc.580>> accessed 27 October 2021.

64 IPCC (n 48).

65 Hannah Ritchie and Max Roser, ‘CO₂ and greenhouse gas emissions, global emissions have not yet peaked’ (Our World in Data, 2020) <<https://ourworldindata.org/co2-and-other-greenhouse-gas-emissions>> accessed 27 October 2021.

66 Anne Saab, ‘The super wicked problem of climate change action’ (Graduate Institute Geneva, 2 September 2019) <www.graduateinstitute.ch/communications/news/super-wicked-problem-climate-change-action> accessed 27 October 2021.

67 Setzer and Vanhala (n 63) 7.

constitutes a ‘political question’ courts are not mandated to answer according to the principles of separation of powers and representative democracy.⁶⁸

7.2 Lack of standing

In the present case, the Austrian Constitutional Court exercised what may be called ‘judicial self-restraint’⁶⁹ and evaded participating in the judicial discourse on climate protection by not allowing the first Austrian climate lawsuit due to a lack of standing. The Constitutional Court’s unwillingness to extend the narrow criteria for the admissibility of individual applications has met with little approval in literature: Scholars argued that the court had overestimated the businesses’ scope for decision-making and that entrepreneurs, as suggested by the applicants, merely serve as ‘pass-throughs’ for consumption taxes borne by consumers.⁷⁰ Moreover, the Constitutional Court’s suggestion that the applicants might be able to challenge the tax provisions if they purchased a flight ticket was perceived to be ‘cynical’ – after all, the applicants try to reduce individual GHG consumption and therefore choose to travel per train.⁷¹ However, it is not uncommon for climate lawsuits to not overcome the hurdle of admissibility⁷²: Legal standing, just as separation of powers, is a key challenge to justiciability that most climate litigants face.⁷³ Even though criteria for standing vary considerably in different legal systems, they generally require that parties raise a claim only if they have a ‘genuine and current stake in the outcome’ and the court is capable of resolving the dispute and granting effective remedy to the parties.⁷⁴ In the present case, the required but not established ‘direct concern’ arguably referred to the first criterion – the plaintiffs had not shown a sufficient level of concern by the contested tax provisions.

68 See, for example, Laura Burgers, ‘Should judges make climate change law?’ (2020) 9 (1) *Transnational Environmental Law* 55 <www.cambridge.org/core/services/aop-cambridge-core/content/view/D9B088113959571B24E97F5E976CA107/S2047102519000360a.pdf/should-judges-make-climate-change-law.pdf> accessed 26 October 2021.

69 Berka (n 34) 343; judicial restraint may be understood as judicial decision-making characterised by a deliberate restraint with regard to acts of legislature.

70 Simona Buss, ‘Der VfGH kann sich nicht für den Klimawandel erwärmen – Die “erste Klimaklage” Österreichs’ (2021) *Spektrum des Wirtschaftsrechts* 127, 130.

71 Eva Schulev-Steindl, ‘Klimaklage: VfGH weist Individualantrag gegen steuerliche Begünstigung der Luftfahrt zurück’ (2020) *Recht der Umwelt* 251, 256.

72 Schulev-Steindl (n 10) 17.

73 United Nations Environment Programme, *Global climate litigation report: 2020 Status review* (UNEP, Columbia Law School Sabin Center for Climate Change Law 2020) 37.

74 UNEP (n 73) 37.

7.3 The European Court of Human Rights as driver of innovation

In substantive terms, the claim aimed at challenging Austria's unambitious climate policy. This general intent is particularly clear from the application to the ECtHR, which, in contrast to the national claim, is not limited to challenging specific legal provisions. A respective ECtHR judgment could force Austrian courts to take a stand on the constitutionality and adequacy of national climate policies. And if the ECtHR finds a violation of Article 13 ECHR, legal protection mechanisms in climate matters will have to be modified or extended in some way.⁷⁵ A respective adjustment could be achieved by introducing a fundamental right to climate protection. Such an enforceable right might either entail an obligation to comply with international climate protection commitments, to achieve climate neutrality or to implement adequate climate protection measures.⁷⁶ Alternatively, the anchoring of a legal protection mechanism in the new Federal Climate Protection Law or facilitating the access to the Constitutional Court may close the existing gap in legal protection.

Apart from procedural changes, a decision by the ECtHR on state obligations to protect in the climate crisis could also have far-reaching substantive implications for Austria and other ECHR member states. Based on its case law on environmental hazards and natural disasters⁷⁷, and by limiting the states hitherto assumed wide margin of appreciation in fulfilling positive obligations⁷⁸, the ECtHR could derive concrete climate protection obligations from fundamental rights. This would, in turn, have a direct impact on Austrian jurisprudence as the ECHR is part of constitutional law and is interpreted by the Constitutional Court in accordance with the ECtHR's case law.⁷⁹ If, for example, the ECtHR suggests that fundamental rights require the reduction of GHG emissions to a certain extent, the Austrian Constitutional Court will most likely adhere to this interpretation. Moreover, a favourable judgment could give further impetus to the already observed rights turn in climate litigation⁸⁰ and

75 According to Article 46 ECHR, judgments are binding for the contracting parties; Grabenwarter and Pabel (n 52) § 16 recital I suggest that the contracting parties have to remedy a violation of the Convention – thereby, the choice of means is left to the state parties which only owe the desired result.

76 Ennöckl (n 23) 30.

77 For an overview see, Council of Europe, *Manual on human rights and the environment* (2nd edn, Council of Europe 2012), the report is available at <<https://bit.ly/3tPf8FL>> accessed 29 March 2022.

78 Hana Müllerová, 'Environment playing short-handed: Margin of appreciation in environmental jurisprudence of the European Court of Human Rights' (2014) *Review of European, Comparative & International Environmental Law* 83.

79 Edith Seeber, 'Die Bedeutung der Judikatur des Europäischen Gerichtshofs für Menschenrechte in der Judikatur der österreichischen Höchstgerichte über den entschiedenen Fall hinaus' (Dr. iur. thesis, University of Graz 2015) 110.

80 Jacqueline Peel and Hari M. Osofsky, 'A rights turn in climate change litigation?' (2017) 7 (1) *Transnational Environmental Law* <<https://bit.ly/36vekNr>> accessed 29 March 2022.

enable many more well-founded human rights-based claims across ECHR member states.

7.4 Human rights-based climate litigation

In fact, human rights increasingly serve as a legal basis for climate lawsuits.⁸¹ There are several reasons for this development: On the one hand, the link between human rights and climate change is nowadays beyond question – there is an overwhelming consensus that climate change threatens and violates a multitude of human rights.⁸² On the other hand, the human rights regime is relatively robust and opens up new avenues for enforcing environmental and climate protection before national and international fora.⁸³ Nonetheless, the perceived ‘human rights turn’⁸⁴ also comes with some challenges, in particular the reactive nature of fundamental rights and the territorial limitation of their application. Also, proving a causal link between a state’s inaction or emitting of GHGs and the resulting negative implications for human rights poses difficulties.⁸⁵

One of the characteristics of climate change is that the emission of greenhouse gases and the resulting violation of fundamental rights are often temporally distant: the emission of a certain amount of greenhouse gases today may lead to a violation of fundamental rights in a few decades’ time. However, a violation of human rights must generally have occurred to be established (reactive nature of human rights regime). It is, therefore, sometimes difficult to establish the human rights impacts of climate change.⁸⁶ In tackling this problem, the German Federal Constitutional Court, in its *Neubauer* decision⁸⁷, has adopted a novel approach: it held that the high emission levels legally permitted until 2030 have an ‘advance interference-like effect’ on the freedom of the applicants as emission possibilities after 2030 are considerably narrowed. Fundamental rights constitute ‘intertemporal guarantees of freedom’ and protect against the ‘offloading’ of GHG reduction burdens onto the future.⁸⁸ Greenhouse gas emissions permitted today thus already constitute a violation of fundamental rights, even if the actual restrictions of freedom will only occur in the future. With this approach, the Federal Constitutional Court elegantly circumvented the problem

81 Setzer and Vanhala (n 63) 10.

82 John H. Knox, ‘Climate change and human rights law’ (2009) 50 (1) *Virginia Journal of International Law* <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1480120#> accessed 30 October 2021.

83 Setzer and Vanhala (n 63) 11.

84 Peel and Osofsky (n 80).

85 Setzer and Vanhala (n 63) 10.

86 *Ibid* 10.

87 Federal Constitutional Court of Germany *Neubauer* (n 13).

88 *Ibid* recital 183.

of temporal distance. In terms of the extraterritorial applicability of fundamental rights, the Federal Constitutional Court has not expressed a conclusive opinion yet, it merely stated that the scope of protection of fundamental rights are not *a priori* restricted to Germany.⁸⁹

The first Austrian climate formed part of the increasing number of human rights-based climate lawsuits and addressed the above-mentioned challenge of establishing a causal link between Austria's unambitious climate policy (which manifests in particular in state subsidies for climate-damaging aviation) and a violation of human rights. Perhaps inspired by the successful *Urgenda* decision⁹⁰, the applicants alleged a violation of the state's positive obligations under Article 2 and 8 ECHR, as well as a violation of the right to equality before the law. Thereby, the claim referred to the Paris Agreement and the target of limiting the temperature increase to 'well below 2°C'. On a broader scale, the applicants presumably wanted to promote the Paris Agreement's implementation and to align national climate policies with its goals and the thereof derived carbon budget. For climate litigants in and beyond Austria, the Paris Agreement has clearly become an essential point of reference in evaluating national climate policies.⁹¹ The same holds for 'best available science' expressed in the IPCC reports: In climate lawsuits, plaintiffs typically seek to enforce decision-making and climate policies that are guided by scientific findings and the precautionary principle.⁹² However, science also plays an essential role in the proceedings: Establishing a causal link between the emissions of certain GHGs or the failure to take adaptation or mitigation measures and concrete damages requires recourse to scientific findings on long-term changes or extreme weather events triggered by climate change. Recently, attribution science has yielded promising results which could be used in future lawsuits to prove a causal link.⁹³ This development also increases chances of success of climate lawsuits against carbon majors, which mostly seek injunctive relief or damages and often require proof of a causal link between the polluter's behaviour (emission of GHGs) and concrete climate damage on the plaintiff's side.⁹⁴ With this development, it is to be hoped that science will play a greater role, not only in courts but in decision-making on climate policies in general.

89 Ibid recital 101.

90 Supreme Court of the Netherlands *Urgenda* (n 12).

91 Setzer and Vanhala (n 63) 7.

92 Rupert F Stuart-Smith et al., 'Filling the evidentiary gap in climate litigation' (2021) *Nature Climate Change* 651.

93 Michael Burger et al., 'The law and science of climate change attribution' (2020) 45 (1) *Columbia Journal of Environmental Law* <<https://doi.org/10.7916/cjel.v45i1.4730>> accessed 3 November 2021.

94 For climate lawsuits based on tort law, see the contribution by Monika Hinteregger to this volume.

8 Conclusion and outlook

It can be concluded that human rights-based climate lawsuits are on the rise globally. The Austrian climate lawsuit initiated by Greenpeace forms part of this trend: the applicants alleged a violation of their rights to life and respect for private and family life and a violation of the right to equality before the law. This violation results from Austria's unambitious climate policy, which becomes apparent, among other things, in the contested tax provisions: state subsidies for carbon-intensive aviation constitute an incentive for climate-damaging behaviour and thereby fuel the climate crisis. Despite not being successful before the Constitutional Court, the plaintiffs managed to draw considerable public attention to the global concern of climate change and highlighted the shortcomings of legal protection against the climate crisis in Austria. Also, one has to be aware of the fact that the proceedings have not yet come to an end. The ECtHR is still to decide whether unambitious climate policies violate the right to respect for private and family life under Article 8 ECHR or insufficient means of legal protection violate the right to an effective remedy pursuant to Article 13 ECHR. It is to be hoped that the ECtHR takes the chance to limit the states' wide margin of appreciation in fulfilling their positive obligations, which it had so far assumed in connection with natural disasters. Also, it remains open whether the ECtHR will follow climate plaintiffs' view and refer to the Paris Agreement as a 'landmark' for assessing national climate policies or requires the consideration of scientific findings. In any case, the court has the possibility to decide on fundamental rights obligations in climate change also in the context of another lawsuit: In 2020, six Portuguese youth alleged that Austria and 32 other states violated human rights by not taking sufficient action on climate change.⁹⁵ Promisingly, the ECtHR gave priority to the case according to Article 41 Court Regulations and thereby recognised the 'importance and urgency of the issues raised'.⁹⁶

Meanwhile, further efforts have also been undertaken at the national level: A second climate lawsuit, initiated by the environmental organisation Global 2000, seeks to enforce the phasing-out of fossil fuels.⁹⁷ The applicants therein require the Minister for Digital and Economic Affairs to issue an ordinance, which provides for a gradual ban on the sale of fossil fuels. The Minister is to issue this ordinance based on her competence to enact commercial police measures to prevent threats to life and health or to prevent environmental pollution. The applicants derived their respective subjective right to the enactment of an ordinance from EU law. However, in the first instance the Minister rejected the application in July 2021 as there was no federal

95 The application is available at <<http://climatecasechart.com/climate-change-litigation/non-us-case/youth-for-climate-justice-v-austria-et-al/>> accessed 31 October 2021.

96 Article 41 Rules of Court, available at <www.echr.coe.int/documents/rules_court_eng.pdf> accessed 1 November 2021.

97 The application is available at <<https://bit.ly/3LsbXtz>> accessed 29 March 2022.

competence for issuing the required ordinance. A complaint is now pending before an Administrative Court.⁹⁸

What is hopeful, however, is that the Austrian legal system's scepticism and rejection towards previous legal actions does not stop climate activists and non-state actors from breaking new ground to enforce their right to climate protection in Austria and beyond.

Bibliography

- Austrian Panel on Climate Change, *Österreichischer Sachstandsbericht Klimawandel 2014 (AAR14)* (Verlag der Österreichischen Akademie der Wissenschaften, 2014) <<https://ccca.ac.at/wissenstransfer/apcc/aar14>> accessed 20 October 2021.
- Anderl M et al., *Klimaschutzbericht 2021* (Umweltbundesamt GmbH 2021) <<https://www.umweltbundesamt.at/fileadmin/site/publikationen/rep0776.pdf>> accessed 20 October 2021.
- Bergthaler W et al., 'Klimaklage nun auch in Österreich' (2019) *Recht der Umwelt* 178.
- Berka W, *Verfassungsrecht* (8th edn, Verlag Österreich 2021).
- Burger M et al., 'The law and science of climate change attribution' (2020) 45 (1) *Columbia Journal of Environmental Law* <<https://doi.org/10.7916/cjel.v45i1.4730>> accessed 3 November 2021.
- Burgers L, 'Should judges make climate change law?' (2020) 9 (1) *Transnational Environmental Law* <<https://bit.ly/36zHH0o>> accessed 29 March 2022.
- Buss S, 'Der VfGH kann sich nicht für den Klimawandel erwärmen – Die "erste Klimaklage" Österreichs' (2021) *Spektrum des Wirtschaftsrechts* 127.
- Bußjäger P, 'Art 140 B-VG' in Kahl A et al. (eds), *Kommentar zum Bundesverfassungsrecht, B-VG und Grundrechte* (Jan Sramek Verlag 2021) 1471.
- Council of Europe, *Manual on human rights and the environment* (2nd edn, Council of Europe 2012) <https://www.echr.coe.int/Documents/Pub_coe_Environment_2012_ENG.pdf> accessed 26 October 2021.
- International Energy Agency, 'Austria 2020 energy policy review' (International Energy Agency, May 2020) 81 <www.iea.org/reports/austria-2020> accessed 27 October 2021.
- Ennöckl D, 'Kurzstudie „Möglichkeiten einer verfassungsrechtlichen Verankerung eines Grundrechts auf Klimaschutz' (Parliament 2021) <<https://bit.ly/3qK6MNC>> accessed 29 March 2022.
- Forster A, 'Art 8 EMRK' in Kahl A et al. (eds), *Kommentar zum Bundesverfassungsrecht, B-VG und Grundrechte* (Jan Sramek Verlag 2021) 1872.
- Grabenwarter C and Pabel K, *Europäische Menschenrechtskonvention: Ein Studienbuch* (7th edn, C.H. Beck 2021).
- Kerschner F, 'Klimaschutz aus umweltrechtlicher, insbesondere auch aus völkerrechtskonformer Sicht' (2019) *Recht der Umwelt* 49.
- Khakzadeh L, 'Art 7 B-VG' in Kahl A et al. (eds), *Kommentar zum Bundesverfassungsrecht, B-VG und Grundrechte* (Jan Sramek Verlag 2021) 45.

98 See, for example: ORF, 'Klimaklage: Global 2000 wehrt sich gegen Abweisung von Antrag' (ORF, 8 September 2021) <<https://orf.at/stories/3227825/>> accessed 31 October 2021.

- Kirchengast G et al., 'Flughafen Wien: VfGH behebt Untersagung der dritten Piste durch das BVwG wegen Willkür' (2017) *Recht der Umwelt* 2522.
- Klaushofer R, 'Art 2 EMRK' in Kahl A et al. (eds), *Kommentar zum Bundesverfassungsrecht, B-VG und Grundrechte* (Jan Sramek Verlag 2021) 1762.
- Knox J, 'Climate change and human rights law' (2009) 50(1) *Virginia Journal of International Law* <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1480120#> accessed 30 October 2021.
- Müllerová H, 'Environment playing short-handed: Margin of appreciation in environmental jurisprudence of the European Court of Human Rights' (2014) *Review of European, Comparative & International Environmental Law* 83.
- Oberndorfer P and Wagner B, 'Gesetzgeberisches Unterlassen als Problem Verfassungsgerichtlicher Kontrolle' (Landesbericht Österreich für den XIV. Kongress der Konferenz der Europäischen Verfassungsgerichte in Vilnius, Litauen vom 2. bis 7. Juni 2008) <https://www.confueuconstco.org/reports/rep-xiv/report_Austria_de.pdf> accessed 26 October 2021.
- ORF, 'Klimaklage: Global 2000 wehrt sich gegen Abweisung von Antrag' (ORF, 8 September 2021) <<https://orf.at/stories/3227825/>> accessed 31 October 2021.
- Peel J and Osofsky H, 'A rights turn in climate change litigation?' (2017) 7(1) *Transnational Environmental Law* <<https://bit.ly/36vekNr>> accessed 29 March 2022.
- Pressedienst der Parlamentsdirektion, 'Gewessler peilt Begutachtung für Klimaschutzgesetz ab Sommer an' (APA OTS, 9 June 2021) <<https://bit.ly/3iLnLEw>> accessed 29 March 2021.
- Rechnungshof Österreich, 'Climate protection is not centrally coordinated in Austria' (Rechnungshof Österreich, 16 April 2021) <<https://bit.ly/3iOT3k0>> accessed 29 March 2022.
- , 'Klimaschutz in Österreich – Maßnahmen und Zielerreichung 2020, Bericht des Rechnungshofes' (*Rechnungshof Österreich*, 2021) <<https://bit.ly/3NpPUWh>> accessed 29 March 2022.
- Republic of Austria, *Out of a sense of responsibility for Austria. Government programme 2020-2024* (Die neue Volkspartei, Die Grünen – Die Grüne Alternative, 2020) <<https://bit.ly/3INmUUK>> accessed 29 March 2022.
- Ritchie H and Roser M, 'CO₂ and Greenhouse Gas Emissions, Global Emissions have not yet peaked' (Our World in Data, 2020) <<https://ourworldindata.org/co2-and-other-greenhouse-gas-emissions>> accessed 27 October 2021.
- Saab A, 'The super wicked problem of climate change action' (Graduate Institute Geneva, 2 September 2019) <www.graduateinstitute.ch/communications/news/super-wicked-problem-climate-change-action> accessed 27 October 2021.
- Schnedl G, 'Die Rolle der Gerichte im Klimaschutz' in Kirchengast G et al. (eds), *Klimaschutzrecht zwischen Wunsch und Wirklichkeit* (Studien zu Politik und Verwaltung Bd. 112, Böhlau Verlag 2018) 1396.
- Schöpfer EC, 'Gedanken zur Verankerung eines Grund- bzw. Menschenrechts auf eine gesunde Umwelt' (2019) *Newsletter Menschenrechte* 183.
- Schulev-Steindl E, 'Klimaklage: VfGH weist Individualantrag gegen steuerliche Begünstigung der Luftfahrt zurück' (2020) *Recht der Umwelt* 251.
- , 'Klimaklagen: Ein Trend erreicht Österreich' (2021) *ecolox* 17.
- Seeber E, 'Die Bedeutung der Judikatur des Europäischen Gerichtshofs für Menschenrechte in der Judikatur der österreichischen Höchstgerichte über den entschiedenen Fall hinaus' (Dr.iur. thesis, University of Graz 2015).
- Setzer J and Higham C, 'Global trends in climate change litigation: 2021 snapshot' (Grantham Research Institute on Climate Change and the Environment, Columbia Law School Sabin Center for Climate Change Law, Centre for Climate Change Economics and Policy 2021)

<https://www.lse.ac.uk/granthaminstitute/wp-content/uploads/2021/07/Global-trends-in-climate-change-litigation_2021-snapshot.pdf> accessed 24 October 2021.

Setzer J and Vanhala L, 'Climate change litigation: A review of research on courts and litigants in climate governance' (2019) 10 (3) WIREs climate change <<https://bit.ly/3tLY3fG>> accessed 29 March 2022.

Statista, 'Treibhausgas-Emissionen in Österreich von 1990 bis 2019' (Statista, 3 February 2021) <<https://de.statista.com/statistik/daten/studie/961595/umfrage/treibhausgas-emissionen-in-oesterreich/>> accessed 30 October 2021.

Stuart-Smith RF et al., 'Filling the evidentiary gap in climate litigation' (2021) 11 Nature Climate Change 651.

United Nations Environment Programme, *Global climate litigation report: 2020 status review* (UNEP, Columbia Law School Sabin Center for Climate Change Law 2020).

Cases

Austria

Austrian Constitutional Court 27 June 2014 G 47/2012-49, G 59/2012-38, G 62/2012-46, G 70/2012, G 81/2012-36 <<https://bit.ly/3wLDoKH>> accessed 29 March 2022.

Austrian Constitutional Court 29 June 2017 E 875/2017-32, E 886/2017-31 <www.vfgh.gv.at/downloads/VfGH_Entscheidung_E_875-2017_Flughafen_dritte_Piste.pdf> accessed 27 October 2021.

Austrian Constitutional Court 30 September 2020 G 144-145/2020-13, V 332/2020-13 <www.vfgh.gv.at/downloads/VfGH_Beschluss_G_144_2020_vom_30_September_2020.pdf> accessed 21 March 2022.

European Court of Human Rights

Buckley v United Kingdom App no 20348/92 (ECtHR, 29 September 1996).

Budayeva and Others v Russia App no 15339/02, 21166/02, 20058/02, 11673/02 and 15343/02 (ECtHR 20 March 2008).

Fadeyeva v Russia App no 55723/00 (ECtHR, 30 November 2011).

Germany

Federal Constitutional Court of Germany 24 March 2021 1 BvR 2656/18, 1 BvR 78/20, 1 BvR 96/20, 1 BvR 288/20; the *Neubauer* judgment is available at <<https://bit.ly/3JPNqy6>> accessed 29 March 2021.

The Netherlands

Supreme Court of the Netherlands 20 December 2019 19/00135; the *Urgenda* judgement is available at <www.urgenda.nl/wp-content/uploads/ENG-Dutch-Supreme-Court-Urgenda-v-Netherlands-20-12-2019.pdf> accessed 24 October 2021.

The Hague District Court 26 May 2021 C/09/571932 / HA ZA 19-379; the *Royal Dutch Shell* judgment is available at <<http://climatecasechart.com/climate-change-litigation/non-us-case/milieu-defensie-et-al-v-royal-dutch-shell-plc/>> accessed 24 October 2021.

C. Private law and climate litigation

Climate change and tort law¹

Monika Hinteregger

Abstract

Globally, carbon majors are increasingly brought to court to hold them accountable for their contribution to climate change. Plaintiffs rely on tort law to obtain compensation for climate change-related damages while at the same time raising public awareness for climate change. However, such lawsuits raise complex issues and call into question the suitability of conventional tort law for the compensation of climate damages: Plaintiffs must prove that they have suffered (concrete) damage, whereby the defendant's conduct (emission of greenhouse gases) was causal for the occurrence of the damage and the defendant has acted culpably. In light of the fact that many emitters made minimal contributions to climate change and that climate damage often occurs time-delayed and distant, it is hardly surprising that many climate lawsuits have failed to prove the above-mentioned criteria, with causality posing a particular hurdle. Based on a comparative law approach and including relevant case law, this article examines the challenges that arise in asserting climate damages against private actors based on tort law and highlights possible solutions.

1 Introduction

During the last three decades climate litigation has evolved into a new field of law. All over the world individuals and NGOs bring governments and big companies that are responsible for considerable amounts of greenhouse gas emissions (the 'carbon majors') to court in order to force them to take adequate measures to reduce greenhouse gas emissions.² So far only few of these claims focus on compensation on the

1 This contribution contains parts of the following publications: Monika Hinteregger, 'Environmental liability' in Emma Lees and Jorge Viñuales (eds), *The Oxford handbook of comparative environmental law* (OUP 2019); Monika Hinteregger, 'Civil liability and the challenges of climate change: A functional analysis' (2017) 8 *Journal of European Tort Law* 238 and Monika Hinteregger, 'The causal link in tort-based climate change litigation: A challenge for the courts' in Chantal Mak and Betül Kas (eds), *Civil courts and the European polity: The constitutional role of private law adjudication in Europe* (Hart Publishing in print).

2 See the case charts provided by the Sabin Center for Climate Change Law of the Columbia Law School <www.climatecasechart.com> accessed 24 August 2021, the Urgenda Foundation <www.urgenda.nl/en/themas/climate-case/global-climate-litigation> accessed 24 August 2021 and the Grantham Research Institute on Climate Change and the Environment <<https://climate-laws.org>> accessed 24 August 2021.

basis of tort law. In 2007 the State of California sued the six major American car manufacturers for damages caused by the emissions of greenhouse gases by their manufactured cars, but dropped the lawsuit after losing the suit at the court of first instance.³ The claims in the cases *Comer v Murphy Oil*,⁴ and *Kivalina v ExxonMobil*,⁵ were dismissed by the courts holding *inter alia* that the claimants could not establish a sufficient causal link between their damage and the defendant's emissions.⁶ The inability to show causation was also the reason that the German Regional Court of Essen dismissed the damage claim of the Peruvian farmer and mountain guide *Saul Luciano Lliuya* against the German energy corporation *RWE*.⁷ Lliuya was claiming a share of the costs which are necessary to protect his village in the Peruvian Andes from flooding by the Lake Palcacocha which is constantly rising due to glacial meltdown. Lliuya sued RWE for 0.5% of the costs of a protective dam (€ 17,000), because RWE is responsible for about 0.5% of the worldwide greenhouse gas emissions from human activity since the beginning of industrialisation. The court of second instance, the Higher Regional Court of Hamm, however, recognised the complaint and decided to start the evidentiary procedure.

The role of tort law for the compensation of climate change damage has already triggered a considerable amount of legal writing.⁸ This high interest in tort law is

3 *California v General Motors Corp*, No C06-05755 MJJ, 2007 WL 2726871 (ND Cal 17 September 2007).

4 585 F.3d 855 (5th Cir 2009).

5 *Native Village of Kivalina v Exxon Mobil Corp*, 696 F.3d 849 (9th Cir 2012), cert denied, 133 Ct 2390 (20 May 2013). The Inuit village Kivalina in Alaska claimed monetary damages from the energy industry for the destruction of their village by flooding caused by climate change.

6 In the meantime, there are several further lawsuits against major oil companies pending in US courts, see <<http://climatecasechart.com/case-category/common-law-claims/>> accessed 24 August 2021.

7 For information on the case see <<https://germanwatch.org/en/huara>> accessed 24 August 2021; Anne Kling, 'Die Klimaklage gegen RWE – Die Geltendmachung von Klimafolgeschäden auf dem Privatrechtsweg' (2018) 51 Kritische Justiz 213; Hans-Jürgen Ahrens, 'Außervertragliche Haftung wegen der Emission genehmigter Treibhausgase?' (2019) 70 Versicherungsrecht 645; Gerhard Wagner, *Klimahaftung vor Gericht* (C.H. BECK 2020).

8 For the discussion in legal literature see, for instance, Jaap Spier, 'Legal aspects of global climate change and sustainable development' (2006) 7 InDret: Revista para el Análisis del Derecho 1; Randall Abate, 'Automobile emissions and climate change impacts: Employing public nuisance doctrine as part of a "global warming solution" in California' (2008) 40 Connecticut Law Review 591; David Grossman, 'Warming up to a not-so-radical idea: Tort-based climate change litigation' (2003) 28 Columbia Journal of Environmental Law 1; James Salzman and David Hunter, 'Negligence in the Air: The Duty of Care in Climate Change Litigation' (2007) 155 University of Pennsylvania Law Review 1741; Michael Duffy, 'Climate change causation: Harmonizing tort law and scientific probability' (2009) 28 Temple Journal of Science, Technology and Environmental Law 185; Michael Faure and Marjan Peeters (eds), *Climate change liability* (Edward Elgar 2011); Richard Lord et al. (eds), *Climate change liability: Transnational law and practice* (CUP 2011); Douglas Kysar, 'What Climate Change Can Do About Tort Law' (2011) 41 Environmental Law 1; Gregory Munro, 'The public trust doctrine and the Montana constitution as legal bases for climate change litigation in Montana'

often driven by the expectation that spectacular tort law cases usually gain a lot of publicity. They will therefore raise public awareness of the risks posed by climate change and then induce governments and industry to intensify their efforts to reduce their greenhouse gas emissions. Since companies tend to avoid negative publicity, this may even be the case when the individual claim is not successful. A further advantage of tort law, compared to instruments of administrative law or tax law, is that it covers cross-border damage and that it relies less on the initiative of public authorities, who often fail to address environmental problems adequately. Accordingly, there is no doubt that the enforcement of liability claims against emitters of greenhouse gases could have its merits. It must be stressed, however, that plaintiffs will have to deal with high cost of litigation and that serious factual and legal uncertainties will make such trials to an arduous task for plaintiffs and defendants alike.

From the perspective of tort law theory, the application of tort law to climate change damage has several beneficial effects. First of all, it ensures that the committed wrong is redressed and that victims get compensated for their losses (the compensatory function of tort law).⁹ Tort law has also significant preventive effects. The threat of liability makes potential polluters aware of the risks of their actions and gives them a strong incentive to minimise the expected damage costs in their own future economic interest. According to the economic theory of tort law,¹⁰ the goal of tort law is the minimisation of the total costs of accidents comprising both the cost of prevention and remediation. An effective system of tort liability must therefore avoid the externalisation of costs. It must ensure that each economic actor takes all the potential costs of his activity into account when performing the activity. Only then will the actor be induced to conduct a correct cost-benefit analysis and avoid an ac-

(2012) 73 *Montana Law Review* 123; Michael Gerrard and Joseph MacDougald, 'An introduction to climate change liability litigation and a view to the future' (2013) 20 *Connecticut Insurance Law Journal* 153; Jordan Ellis, 'The sky's the limit: Applying the public trust doctrine to the atmosphere' (2014) 86 *Temple Law Review* 807; Erik Pöttker, *Klimahaftungsrecht* (Mohr Siebeck 2014); Maria Lee, 'Climate change tort' (August 28, 2015) <<https://ssrn.com/abstract=2695107>> accessed 24 August 2021; Jacqueline Peel and Hari Osofsky, *Climate change litigation* (CUP 2015); Wolfgang Kahl and Marc-Philippe Weller (eds), *Climate change litigation: A handbook* (C.H. Beck, Nomos, Hart Publishing 2021); Marc-Philippe Weller and Mai-Lan Tran, 'Klimawandelklagen im Rechtsvergleich – private enforcement als weltweiter Trend?' (2021) 29 *Zeitschrift für Europäisches Privatrecht* 573.

- 9 This function of tort law is stressed by traditional tort law theory, see Helmut Koziol, *Basic questions of tort law from a Germanic perspective* (Jan Sramek Verlag 2012) 75ff; André Tunc, 'Introduction', *International encyclopedia of comparative law*, vol 11 Torts (1983) I-164ff.
- 10 Ronald Coase, 'The problem of social cost' (1960) 3 *The Journal of Law and Economics* 1; Guido Calabresi, *The costs of accidents: A legal and economic analysis* (Yale UP 1970); Steven Shavell, *Economic analysis of accident law* (Harvard UP 1987); Michael Faure (ed), *Tort law and economics* (2nd edn, Edward Elgar 2009); Richard Posner, *Economic analysis of law* (9th edn, Wolters Kluwer Law & Business 2014); Hans-Bernd Schäfer and Claus Ott, *Lehrbuch der ökonomischen Analyse des Zivilrechts* (6th edn, Springer Gabler 2020).

tivity that is not worth its costs. It is assumed that emitters of greenhouse gases who are liable for all the harm they cause will adapt their behaviour and reduce their future emissions in their own interest. Making enterprises liable for the harm they cause, therefore, would lead to a reduction of greenhouse gas emissions by way of the market mechanism because enterprises with lower greenhouse gas emissions will have lower damage costs. This would improve their position on the market and will give other enterprises with higher liability costs an incentive to lower their own greenhouse gas emissions in order to reduce these costs.

It is apparent that tort can only achieve these effects if each emitter of greenhouse gases is prepared to take full responsibility for the harm caused. In the following I will show that this is not yet the case and that the application of tort law to climate change damage encounters several fundamental difficulties. I will discuss two of them in more detail: the availability of effective causes of action and the problem of causation.

2 Causes of action for climate change damage

2.1 Applicable causes of action

2.1.1 International law

Tort law is mostly national law. Until now there are no international liability regimes for the compensation of climate change damage, neither under the UN Framework Convention on Climate Change (UNFCCC)¹¹ or the Paris Agreement.¹² Article 8 of the Paris Agreement explicitly addresses the problem of loss and damages but according to Deliberation 51 this does not include a basis for any liability or compensation.

2.1.2 Fault based liability

All national tort laws provide for fault-based liability.¹³ In the civil law countries fault-based liability is regulated in the civil codes and requires the proof of actionable

11 United Nations Framework Convention on Climate Change (adopted 9 May 1992, entered into force 21 March 1994) 1771 UNTS 107 (UNFCCC).

12 Paris Agreement (adopted 12 December 2015, entered into force 4 November 2016) UNTS 52.

13 See the comprehensive comparative law analyses by Helmut Koziol (ed), *Unification of tort law: Wrongfulness* (Kluwer Law International 1998); Bernhard Koch and Helmut Koziol

damage, fault and causation. In common law jurisdictions the tort which comes closest to the concept of fault liability is the tort of negligence. The tort of negligence is comprised of four elements: actionable damage, duty of care, breach of duty and causation. The plaintiff must show that the defendant owed him a duty of care, that the defendant breached this duty, and that the occurrence and type of damage was foreseeable.

The burden for the proof of fault and causation usually lies with the claimant. Under certain conditions, however, jurisdictions provide that the burden of proof concerning the proof of fault can be lightened or even shifted to the defendant.¹⁴ In this context it is important to note that there is a fundamental difference with respect to the required standard of proof in the national jurisdictions. Most civil law countries require that facts are established with high probability, but in the common law countries the relevant standard of proof is the balance of probabilities.

2.1.3 No-fault liability

No-fault liability comes in different gradations from absolute liability for ultra-hazardous activities that does not allow for any or only a few defences (e.g., for nuclear power plants or airplanes),¹⁵ to rules of strict liability for dangerous activities (e.g., cars) with some defences (such as act of war, hostilities, armed conflict, civil war, insurrection and natural disaster of an unforeseeable character), to types of aggravated fault liability for specific objects, such as animals,¹⁶ buildings¹⁷ or defective

(eds), *Unification of tort law: Strict liability* (Kluwer Law International 2002); Pierre Widmer (ed), *Unification of tort law: Fault* (Kluwer Law International 2005).

- 14 Examples: § 831 German Civil Code (BGB) (*Bürgerliches Gesetzbuch*) (for product liability); Article 150 Dutch Code of Civil Procedure (*Wetboek van Burgerlijke Rechtsvordering*) allows the court to reverse the burden of proof if this is stipulated by a special statute or if it is seen to be reasonable and fair; Article 492 § 2 Portuguese Civil Code (*Código Civil*) explicitly provides for a reversal of proof for dangerous activities establishing a rebuttable presumption that the operator was at fault; Spain: ‘theory of risk’ according to which the burden of proof lies with the person who profited from the introduction of a risk. In common law the rule of *res ipsa loquitur*, according to which the court may infer negligence from the fact that the accident causing the plaintiff’s harm is a type of accident that ordinarily happens as a result of the negligence of a class of actors of which the defendant is the relevant member, may lighten the plaintiff’s burden of proof. See Monika Hinteregger, ‘Liability for Terrorism-Related Risk Under Member State Law’ in Lucas Bergkamp et al. (eds), *Civil liability in Europe for terrorism-related risk* (CUP 2015) 91.
- 15 E.g., c IX of the Chinese Tort law which provides for strict liability for ultra-hazardous activities comprising nuclear facilities, civil aircrafts, the possession or use of dangerous materials and excavation activities.
- 16 E.g., Article 1905 Spanish *Código Civil*; § 833 German BGB; § 1320 S 2 Austrian ABGB.
- 17 E.g., Article 1907 Spanish *Código Civil*; Article 2053 Italian Civil Code (*Codice Civile*); § 1319 Austrian ABGB.

products.¹⁸ A very peculiar no-fault liability concept is provided by Article 1242 of the French and Article 1384 of the Belgian Civil Code which provide that the custodian of a thing is responsible for the harm caused by the thing (*responsabilité du fait des choses*). In the common law the rule in *Rylands v Fletcher*,¹⁹ a specific cause of action for the recovery of damage caused by the escape of a dangerous thing because of unnatural use of land, may be applied. This rule, however, has undergone quite a different development in various common law jurisdictions. While in the US,²⁰ and India,²¹ it has become a comprehensive rule of strict liability for abnormally dangerous activities, it was narrowed down in England and Wales by subsequent court rulings and has now become a sub-category of private nuisance which, contrary to private nuisance which requires continuous interference with the land, also extends to sudden incidents.²² The rule in *Rylands v Fletcher* can only be invoked by persons with a proprietary interest in the land affected and does not provide recovery for personal injuries.²³ Scotland,²⁴ never applied the rule in *Rylands v Fletcher* at all, and the Australian High Court rejected the rule in *Burnie Port v General Jones Pty Ltd*,²⁵ holding the opinion that the rule in *Rylands v Fletcher* is absorbed by the principles of ordinary negligence.

Many civil law countries provide for specific strict liability rules governing environmental damage.²⁶ A recent example is the comprehensive rule on compensation

18 For Europe see Council Directive 85/374/EEC of 25 July 1985 on the approximation of the laws, regulations and administrative provisions of the Member States concerning liability for defective products (1985) OJ L210/29, as amended by Directive 1999/34/EC of the European Parliament and of the Council of 10 May 1999 amending Council Directive 85/374/EEC on the approximation of the laws, regulations and administrative provisions of the Member States concerning liability for defective products (1999) OJ L141/20.

19 (1866) LR 1 Ex 265; affirmed (1868) LR 3 HL 330: '[a] person who, for his own purposes, brings on his lands and collects and keeps there anything likely to do mischief if it escapes, must keep it in at his peril; and, if he does not do so, is *prima facie* answerable for all the damage which is the natural consequence of its escape.'

20 See § 20 Restatement (Third) of Torts (American Law Institute 2010): '1 – An actor who carries on an abnormally dangerous activity is subject to strict liability for physical harm resulting from the activity. 2 – An activity is abnormally dangerous if: a) the activity creates a foreseeable and highly significant risk of physical harm even when reasonable care is exercised by all actors; and b) the activity is not one of common usage.'

21 *M.C. Mehta v Union of India* (UOI) and Ors. AIR (1987) SC 1086.

22 *Cambridge Water v Eastern Counties Leather plc* (1994) 2 AC 264 (HL and CA): single escape of dangerous substances because of the unnatural use of the land; requirement of foreseeability (no liability for harm which the defendant could not reasonably foresee).

23 *Hunter v Canary Wharf Ltd* (1997) AC 655 (HL).

24 *RHM Bakeries (Scotland) Ltd v Strathclyde Regional Council* 1985 SC (HL) 17.

25 (1994) HCA 13.

26 For instance Argentina: General Environmental Act, No 25.675, Article 27 (*Ley General del Ambiente*); Brazil: Article 14 § 1 of the National Environmental Policy Act, Law No 6938 from 31 August 1981 (*Ley sobre la Política Nacional de Medio Ambiente*); Germany: Law on Environmental Liability of 10 December 1990, BGBI 1990 I, 2634 (*Umwelthaftungsgesetz*); Finland: Environmental Damages Act of 1994 (*Laki ympäristövahinkojen korvaamisesta*); In-

for ecological damage in French law (Articles 1246-1252 Code Civil). The new Chinese Tort Law also contains in Chapter VIII comprehensive strict liability rules regarding environmental pollution. The polluter is liable for any harm caused by environmental pollution (Article 65 Tort Law), and the burden of proof for causation is shifted to the defendant (Article 66 Tort Law).

No-fault liability has important advantages for the plaintiff because there is no need to show that the defendant or one of his agents was at fault. Liability only requires the proof of actionable damage, the establishment of causation and that the damage is covered by the specific liability rule. Whether this is the case is a matter of construction of the specific rule. None of the existing strict liability rules explicitly address the emission of greenhouse gases and climate change damage. The applicability of such a rule to climate change damage is therefore uncertain and a matter of construction.

2.1.4 Neighbourhood liability and nuisance

Many countries provide for specific rules concerning compensation for polluting interference between neighbouring lands. They usually require a continuous, unlawful and indirect interference (smoke, wastewater, noise etc) with the use or enjoyment of land. The right to claim damages entails that the interference exceeds a certain tolerance threshold. In the civil law countries these rules, often originally inspired by German law, are provided in the civil codes (i.e., laws of the neighbourhood).²⁷ In France a similar result is reached through case law (*'troubles de voisinage'*)²⁸ and in the common law countries the corresponding remedy is the action of private nuisance.²⁹

Both the laws of the neighbourhood and nuisance have a somewhat restricted scope of application. A damage claim arising out of the laws of the neighbourhood or nuisance is only available to persons who have a close relationship to the affected land, such as the owner or otherwise authorised occupant (e.g., tenant). The action

donesia: Article 88, 2009 Law No 32/2009 on Environmental Management (*Undang-Undang No 32 Tahun 2009 tentang Perlindungan dan Pengelolaan Lingkungan Hidup*); Sweden: c 32 Environmental Code (*Miljöbalken*). For the European countries see Monika Hinteregger (ed), *Environmental Liability and Ecological Damage in European Law* (CUP 2008); Monika Hinteregger, 'Liability for Terrorism-Related Risk Under Member State Law' in Lucas Bergkamp et al. (eds), *Civil Liability in Europe for Terrorism-Related Risk* (CUP 2015) 103f.

27 E.g., § 364a Austrian ABGB; § 906 (2) German BGB and § 14 German Federal Emission Control Act (*Bundes-Immissionschutzgesetz*); Article 1003 and Article 1108 Greek Civil Code (*Astikos Kodikas*); Article 844 Italian Civil Code etc.

28 Nadège Reboul-Maupin, *Droit des biens* (8th edn, Dalloz 2020) 356ff; Philippe Malaurie and Laurent Aynès, *Les Biens* (8th edn, LGDJ 2019) 344ff.

29 Charles Wild and Stuart Weinstein, *Smith and Keenan's English law* (17th edn, Pearson 2013).

covers primarily real property damage, such as costs of repairs or diminution of the value of the property, but some countries also allow recovery for personal injury and death (e.g., Austria, Belgium, France, Greece, Italy, and Sweden), at least when consequential to property damage (e.g., England and Wales).

The common law provides for another tort of nuisance, not known in the civil law countries: the tort of public nuisance. This tort covers interference with a public interest and can be claimed by the state against a person who unreasonably interferes with a right common to the public (public waters, air).³⁰ Private parties can bring an action for public nuisance only if they have suffered particular injury different from those suffered by the public at large. An action in public nuisance allows recovery for personal injuries and property damage as well as pure economic loss.

2.1.5 EU-Environmental Liability Directive

Another possible instrument for climate change litigation is liability according to the EU Environmental Liability Directive,³¹ which has, during the last decade, evolved to a comprehensive instrument for the prevention and remediation of loss of biodiversity including the maritime environment.³² It gives public authorities the right to claim for prevention or restoration of certain types of environmental harm, namely damage to protected species and natural habitats that fall under the Birds and Habitat Directives,³³ water damage which is defined according to the Water Framework Directive³⁴ and damage to land that creates a significant risk to human health. The Directive thus certainly constitutes an important tool to fight the negative impacts of climate change on natural resources. It is, however, not a basis for civil law litigation, because: (i) the Directive resorts to public law; (ii) the right to take action is awarded to state agencies ('competent authority') and; (iii) it does not cover harm sustained by private persons (personal injury, property damage, economic loss).

30 Restatement (Second) of Torts § 821B (1) (American Law Institute 1979) defines public nuisance as 'unreasonable interference with a right common to the general public.'

31 Directive 2004/35/CE of the European Parliament and of the Council of 21 April 2004 on environmental liability with regard to the prevention and remedying of environmental damage (2004) OJ L143/56.

32 Directive 2008/56/EC of the European Parliament and of the Council of 17 June 2008 establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive) (2008) OJ L164/19. For the status quo of the ELD see <<http://ec.europa.eu/environment/legal/liability/index.htm>> accessed 24 August 2021.

33 Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (2010) OJ L20/7; Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (1992) OJ L206/7.

34 Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy (2000) OJ L327/1.

2.2 Conclusions for climate change damage

Today the most realistic cause of action for climate change damage under civil liability is fault-based liability. There is no specific no-fault liability regime for climate damage and the rules on neighbourhood liability and nuisance require a continuous, unlawful and polluting interference (like smoke, wastewater, noise etc) with the use or enjoyment of land from one neighbouring land to the other. Although greenhouse gases undoubtedly constitute pollutants in the sense of neighbourhood law, they cannot be readily subsumed under this requirement because greenhouse gases do not interfere with the neighbouring land. They are released from the emitter into the atmosphere, accumulate there over a long period of time and cause the temperatures on earth to rise. This leads to a change in climate patterns which triggers certain natural events (storms, rise of the sea level) that cause damage. It is very questionable if such an indirect causal relationship can be regarded as interference according to neighbourhood law.

The civil law jurisdictions have a common and rather consistent concept of fault-based liability. It requires actionable damage, the establishment of causation and fault. Those jurisdictions which follow the Germanic civil law tradition (Austria, Germany, Switzerland, Netherlands) split the notion of fault into two parts: (i) unlawfulness, which relates to the assessment of the act of the damaging party and; (ii) fault, which deals with the blameworthiness of the concrete actor. In the Roman countries, like France, Italy and Spain, unlawfulness is not regarded as a separate requirement but is absorbed by the criterion of fault. For the assessment of the liability of enterprises for climate change damage this dogmatic difference is, however, not really important because in all jurisdictions the assessment of fault for specialists and professionals follows an objective standard. In addition, it is a common rule that specialists and professionals must meet a higher diligence standard than the average person according to their special knowledge and abilities.

The criterion of fault (in the wider sense) is the result of a comprehensive assessment comprising several factors, such as the magnitude of the risk, the gravity of the harm, the cost of precautions and the social utility of the defendant's conduct.³⁵ For the assessment whether an emitter of greenhouse gases failed in the past to exercise due and reasonable care, it is helpful to relate to the findings of the economic theory

35 Helmut Koziol, *Österreichisches Haftpflichtrecht* (Vol 1, 4th edn, Jan Sramek 2020) C/2/6ff. For an overview of the different concepts in the European countries see Helmut Koziol (ed), *Unification of tort law: Wrongfulness* (Kluwer Law International 1998) and for a discussion of the different theories on unlawfulness in the Germanic countries (conduct theory and result theory) see also Helmut Koziol, *Österreichisches Haftpflichtrecht* (Vol 1, 4th edn, Jan Sramek 2020) C/1/3ff.

of law. According to the so-called ‘Learned Hand’ formula,³⁶ a damaging party fails to exercise due care and, therefore is at fault, when the costs of precaution are less than the costs of the expected damage, which consist of the amount of the expected loss multiplied by the probability that the loss will occur. In order to define the optimal level of care this cost-benefit analysis must relate to marginal costs, as the injurer is only obliged to take care up to the point where the costs of care become equal to or greater than the expected costs of the injury. According to this assessment, not all greenhouse gas emissions can be judged as being unlawful but only those which cannot be prevented at reasonable cost.

The assessment of unlawfulness (or fault in the broad sense) must always be performed *ex ante*. It must relate to the time of the emission and not to the time when the harm occurred. The notion of unlawfulness thus requires foreseeability of the harm at the time of emission. With respect to climate change damage, this point of time can lie considerably in the past. For the evaluation of unlawfulness, it is thus important to determine when industrial emitters of greenhouse gases must have become aware of the negative impacts of greenhouse gases on the global climate. This was surprisingly early. Climate science shows that the risk of climate change was already known at the end of the 19th century. The first scientific analyses of the warming effects of greenhouse gases go back as far as 1861,³⁷ and since 1990, when the first IPCC-report on climate change was published,³⁸ it can be assumed that the interested public definitely had knowledge of the risk. In this respect one must, however, consider that the fact that the emitter was aware or must have been aware of the risk does not yet amount to unlawfulness of the emission, because, according to the Learned Hand formula, unlawfulness is only established if the emitter could not have prevented the damage at reasonable cost. All these considerations need to be measured by objective standards.

In civil law it is not always necessary to resort to this comprehensive balance of interests to reach a verdict on unlawfulness. This holds particularly true, if specific prohibitions or requirements are breached, because unlawfulness can already result from such a breach alone. Such requirements may evolve out of case law. The Ger-

36 Developed by Judge Learned Hand in *United States v Carroll Towing Co*, 159 F.2d 169 (2d Cir 1947); see also e.g., Richard Posner, *Economic analysis of law* (9th edn, Wolters Kluwer Law & Business 2014) 191ff; Hans-Bernd Schäfer and Claus Ott, *Lehrbuch der ökonomischen Analyse des Zivilrechts* (6th edn, Springer Gabler 2020) 182f; Monika Gimpel-Hinteregger, *Grundfragen der Umwelthaftung* (Manz 1994) 51ff and 94ff.

37 John Tyndall, ‘On the absorption and radiation of heat by gases and vapours, and on the physical connexion of radiation, absorption, and conduction’ (1861) 151 *Philosophical Transactions of the Royal Society of London* 1. For a comprehensive overview see David Archer and Raymond Pierrehumbert (eds), *The warming papers: The scientific foundation for the climate change forecast* (Wiley-Blackwell 2011).

38 Intergovernmental Panel on Climate Change (IPCC), *Intergovernmental Panel on Climate Change 1990 (First Assessment Report)* <<https://bit.ly/3tNCvzu>> accessed 29 March 2022.

man Supreme Court, for instance, repeatedly ruled that polluting companies have to monitor, document, control and adapt their emissions according to the local environmental conditions.³⁹ Because of the well-known risks of climate change this obligation must, despite its global character, now also relate to the emission of greenhouse gases. Specific requirements of conduct may also arise out of public law regulations governing the levels of emissions of plants and activities. It is generally held that the operator who violates emission limits provided by statute, regulation or operating licence acts unlawfully and can be subject to civil liability for the resulting harm. Increasing regulation concerning the emission of greenhouse gases by public law thus has an important effect on the emitter's future civil liability obligations.⁴⁰

Compliance with emission limits, however, does not automatically exonerate from liability. Most European jurisdictions accept that compliance with public law standards does not exonerate damaging parties from civil liability.⁴¹ This is only the case if public law regulations expressly authorise the infringement of a property right (which is usually connected with the duty to indemnify the injured party), or when damage is the direct result of compliance with a mandatory order from a public authority.⁴² Public law regulations do not usually have this effect. Their goal is rather to control the risks of certain activities and to prevent harm. If harm occurs despite these efforts, civil liability of the operator towards the injured party remains. This also applies to existing public law regulations concerning the greenhouse gas emission limits under the EU Emissions Trading System,⁴³ because this system is not directed at the protection of private rights of individuals but establishes an economic instrument in order to cut the overall amount of greenhouse gas emissions by use of market forces.

39 BGH 16.12.1977 – V 91/75, *Neue Juristische Wochenschrift* 1978, 419; BGH 18.9.1984 – VI ZR 223/82, *Entscheidungen des Bundesgerichtshofs in Zivilsachen* (BGHZ) 92, 143; BGH 6.2.1986 – III 109/84, BGHZ 97, 97.

40 The UNFCCC and its protocols (Kyoto and Paris Agreement) are addressed to the contracting States and do not contain such rules.

41 Monika Hinteregger, 'Comparison' in Monika Hinteregger (ed), *Environmental liability and ecological damage in european law* (CUP 2008) 591; Monika Hinteregger, 'Liability for terrorism-related risk under member state law' in Lucas Bergkamp et al. (eds), *Civil liability in europe for terrorism-related risk* (CUP 2015) 105; Michael Faure and André Nollkaemper, 'International liability as an instrument to prevent and compensate for climate change' (2008) 43 *Stanford Journal of International Law* 123, 151-157; recently for German law: Erik Pöttker, *Klimahaftungsrecht* (Mohr Siebeck 2014) 118ff.

42 See Dir 85/374/EEC (1985) OJ L210/29, Article 7 lit d; Dir 2004/35/CE (2004) OJ L143/56, Article 8 § 3 lit b.

43 Erik Pöttker, *Klimahaftungsrecht* (Mohr Siebeck 2014) 124ff; Marjan Peeters, 'The regulatory approach of the EU in view of liability for climate change damage' in Michael Faure and Marjan Peeters (eds), *Climate change liability* (Edward Elgar 2011) 116ff, 122f. For English law see Giedre Kamiskaitė-Salters, 'Climate change litigation in the UK: Its feasibilities and prospects' in Michael Faure and Marjan Peeters (eds), *Climate change liability* (Edward Elgar 2011) 181ff.

3 Causation

3.1 The problem

Another major obstacle for the application of tort law liability to climate change damage is the proof of a direct causal link between the emission of greenhouse gases by one specific emitter and the harm sustained. The reasons for this lie in the characteristic properties of greenhouse gases. Gases like carbon dioxide, methane and nitrous oxide do not directly affect plaintiffs, but cumulate in the atmosphere and cause over time the temperatures of the earth to rise. Direct cause of the harm is actually a natural event (storm, heat, rainfall, drought etc) triggered by the accumulation of these substances. The other fundamental difficulty lies in the specific nature of climate change damage because harm caused by man-made climate change can very often not be distinguished from harm caused by natural events without any connection to human emissions. In these cases, only part of the damage, namely the part of the damage caused by the increase in the occurrence of such incidents or by the increase in their intensity is man-made. A good example for such a causality scenario is the formation of hurricanes. Hurricanes are a natural phenomenon, but climate science shows that global warming makes them more frequent and more destructive. This argumentation was brought forward in the case of *Comer v Murphy Oil*,⁴⁴ where victims of Hurricane Katrina sued a number of energy companies for compensation for the damage caused by the hurricane. They argued that the defendants had considerably contributed to global warming by emitting greenhouse gases, thereby increasing the destructive power of Hurricane Katrina.

In the following I will examine the significance of the requirement of causation for tort law claims. I will show that the traditional methods of establishing causation, the ‘but for’-test of the common law and the ‘*conditio sine qua non*’-formula applied in the civil law systems, have inherent weaknesses which require additional deliberations to ensure fair results for the individual case. I will first describe the strategies courts traditionally apply in order to meet the structural deficits of the ‘but for’-test, and then I will highlight some cases where courts developed even more far-reaching strategies when victims encountered typical and unsurmountable difficulties in proving causality. From this I will try to draw some conclusions for climate change damage.

44 585 F.3d 855 (5th Cir 2009).

3.2 ‘But for’-test and ‘*conditio sine qua non*’-formula

3.2.1 The rules

Legal doctrine provides that the causal link is established according to the ‘but for’-test (common law) or the *conditio sine qua non*-formula (civil law) which qualifies any circumstance as cause of the damage if the damage would not have occurred without it. This method of damage attribution has a long tradition and enjoys widespread recognition.⁴⁵ Compensability of harm under tort law requires a sufficient causal link between the defendant’s activity and the harm sustained by the victim. This is apparently a fundamental question of justice as it would be utterly unfair to burden a person with a loss to which this person has no sufficient connection. This is complemented by the economic deliberation that in order to pursue the optimal allocation of resources it is essential to allocate damage costs to the person who is in the best position to minimise these costs (cheapest cost avoider) which requires that the liable person is able to influence the cost of potential damage by his behaviour, namely by the applied level of care.

3.2.2 Causation by synergistic and progressive effects

The ‘but for’-test and the *conditio sine qua non*-formula are suitable instruments for the attribution of damage in most causality scenarios. For climate change damage it is essential to see that these deliberations even ensure appropriate damage attribution when damage is caused by synergistic effects of two or more interacting substances. Such effects can be of a different nature. If the harmful effect is only created because of the interaction of otherwise harmless substances, the tests indicate full causation by both substances (and therefore joint and several liability of both emitters, provided that the incident is covered by an applicable cause of action). The same solution applies if the noxiousness of a substance is only triggered by its reaction with the natural environment or a natural substance, and also in case of the chemical or physical interaction of two harmful substances. In all these constellations the tests show that the damage would not have occurred without the emission of these substances into the natural environment.

Things get a bit more complicated when the interaction of two harmful substances has a *progressive effect* that is when the common effects of the harmful interacting substances are greater than the sum of the individual effects of any of them. Here the result of the ‘but for’-test, like the application of the *conditio sine qua non*-formula,

45 Reinhard Zimmermann, ‘Comparative report’ in Bénédicte Winiger et al. (eds), *Digest of European tort law, Volume 1: Essential cases on natural causation* (Springer 2007) 99.

indicate the part of damage that was caused by each substance and, in addition, the common increase in damage. Again, given that there is an applicable cause of action, this can lead to joint and several liability of each polluter, or, if the damage is divisible liability can be split according to the shares. This would mean that each emitter is severally liable for the individual share and has to bear joint liability for the common increase.⁴⁶

3.2.3 Concurrent, cumulative, alternative, intervening and minimal causation

All tort law systems traditionally provide for diverse strategies to cope with specific cases where the causal link does not pass the ‘but for’-test. Typical constellations are the cases where (i) two or more separate acts cause harm to a third party without the possibility of apportionment (concurrent causation); (ii) two or more separate acts cause harm when each would have been in itself sufficient to cause the harm (cumulative causation); or (iii) it cannot be established whether the harm was caused by the tortious act of person A or person B (alternative causation). In most jurisdictions the answer to such causality constellations is joint and several liability of each tortfeasor.⁴⁷ The defendant who has compensated the victim has a right of recourse against the other defendants. When one cause has taken effect before the other (intervening causation), however, it is predominantly held that only the person who caused the damage first is liable.⁴⁸ For the case of minimal causation, another causality constellation which is traditionally discussed by tort law theory, causation cannot be established according to the ‘but for’-test or the *conditio sine qua non*-formula, but needs further considerations in order to avoid unjust results. When damage is caused by a large number of people, the tests work for the whole group, because they correctly indicate that all the members of the group caused the damage, but they are not appropriate for the adequate attribution of damage to the individual members of the group. Due to the minimal effects of each contribution for the development of the damage, both tests would in most cases lead to the conclusion that no member of the group has caused the damage. As causation by the whole group is, however, a proven fact, this result is apparently not correct.

46 See Monika Gimpel-Hinteregger, *Grundfragen der Umwelthaftung* (Manz 1994) 199; Erik Pöttker, *Klimahaftungsrecht* (Mohr Siebeck 2014) 140.

47 See e.g., Austria: § 1302 ABGB; Germany: §§ 830(1) (2), 840(1) and 426(1) BGB; Greece: Article 926 Civil Code; Italy: Article 2055 Civil Code; Portugal: Articles 490 and 497 Civil Code; Ireland: pt III of the Civil Liability Act 1961; Netherlands: Article 6:102 Civil Code (*Burgerlijk Wetboek*). See Jaap Spier (ed), *Unification of tort law: Causation* (Kluwer Law International 2000); Bénédicte Winiger et al. (eds), *Digest of European tort law Volume 1: Essential cases on natural causation* (Springer 2007).

48 See the discussed cases in Bénédicte Winiger et al. (eds), *Digest of European tort law Volume 1: Essential cases on natural causation* (Springer 2007) 479 and 505.

From a theoretical point of view, minimal causation constitutes a special subcategory of concurrent causation. The fact that not only two or several persons, but a multitude of persons, contributed to the damage, makes it difficult, or even impossible, to determine the individual share of each contributor, which, according to the theory of concurrent causation, would lead to the finding of joint and several liability for each contributor. It is again apparent that this result is disproportionate to the detriment of the individual tortfeasor and thus not justifiable. In legal doctrine, therefore it is generally accepted that the 'but for'-test is not suitable for cases of minimal causation. When a large number of people cause specific damage, doctrine suggests that each contributor should only be liable for a part of the damage. If the individual case gives no further indications for the determination, or at least estimation, of the individual share, the incurred damage must be equally divided among the members of the group.⁴⁹

A look at various legal systems, however, shows that courts find even more sophisticated solutions when the causality situation becomes more complex and plaintiffs encounter structural problems with respect to the proof of causality.

3.3 Specific court solutions for complex causality constellations in other areas

3.3.1 DES-cases and beyond

In the famous case *Sindell v Abbott Laboratories*,⁵⁰ the Supreme Court of California created the theory of market share liability. In this case, the plaintiffs could show that their harm was caused by a specific drug (Diethylstilbestrol, DES) prescribed to their mothers during pregnancy in order to prevent miscarriage. What the plaintiffs could not ascertain was the relationship between the individual plaintiff and defendant because the product was generically marketed by several manufacturers and there was no way for them to show which company had produced or distributed the drug taken by the individual plaintiff's mother. In *Sindell* the court referred to the doctrine of alternative liability in the case of *Summers v Tice*,⁵¹ where the court held that the burden of proof is upon the tortfeasors. Where the conduct of two actors is tortious, and it is proven that the harm has been caused to the plaintiff by only one of them, but there is uncertainty as to which one of them has caused it, the burden is upon each such actor to prove that he has not caused the harm. This solution for cases of alternative liability, as was shown above, is shared by many other jurisdictions. In

49 See Article 3:105 Principles of European tort law. Bernhard Koch, 'Comparative report' in Bénédicte Winiger et al. (eds), *Digest of European tort law, Volume 1: Essential cases on natural causation* (Springer 2007) 541 indicates that case law dealing with this problem is scarce.

50 607 P.2d 924 (Cal 1980).

51 199 P.2d 1 (Cal 1948).

Sindell the court expanded the theory of alternative liability to the constellation that not only two but several tortfeasors could have caused the harm in question. It held that the burden of proof shifts to the defendants, if the plaintiff joins manufacturers of a substantial share of the DES produced and marketed in the relevant area and if the plaintiff is able to prove a prima facie case on every element of the cause of action except identification of the direct tortfeasor. It is then up to defendants to prove that they did not cause the plaintiff's injuries, and those defendants failing in this proof are held liable for the percentage of damages approximating their share of the relevant market. This means that each defendant's share of the damages would approximate the probability that it caused the plaintiff's injuries.

In *Sindell* the court thus set up several requirements for the application of the theory of market share liability. These requirements are the following: (i) The defendants in court must constitute substantially all of the market. (ii) All the defendants must have been in the market within the critical timeframe. (iii) The marketed products must be of the same composition and thus interchangeable, and (iv) it must not be the plaintiff's fault that the individual tortfeasor cannot be identified.

Subsequent court decisions concretised the burden of proof for the defendants. In *Martin v Abbott Laboratories*,⁵² the Washington Supreme Court supported the plaintiffs with regard to their obligation to join defendants with a substantial share of the market in the action by introducing the presumption that all the defendants who cannot exculpate themselves (by showing that DES ingested by the individual mother did not come from their production) have equal shares of the market ('presumptive share liability'). It is then up to the individual defendant to prove a lower share. This approach was also adopted by the Florida Supreme Court in *Conley v Boyle Drug Co.*⁵³

In *Collins v Eli Lilly & Co.*,⁵⁴ the Wisconsin Supreme Court went an important step further. Because of the practical difficulty of defining and proving market share the court allowed the plaintiff to bring a cause of action against one single defendant, and, in full application of the alternative liability rule in *Summers v Tice*, it shifted the burden of proof as to causation fully to the defendant.⁵⁵ The defendant was thus obliged to show that it did not produce the DES taken by the plaintiff's mother. For

52 689 P.2d 368 (Wash 1984).

53 570 So.2d 275 (Fla 1990).

54 342 N.W.2d 37 (Wis 1984).

55 The court obliged the plaintiff to allege 'that the plaintiff's mother took DES; that DES caused the plaintiff's subsequent injuries; that the defendant produced or marketed the type of DES taken by the plaintiff's mother; and that the defendant's conduct in producing or marketing the DES constituted a breach of a legally recognised duty to the plaintiff. In the situation where the plaintiff cannot allege and prove what type of DES the mother took, as to the third element the plaintiff need only allege and prove that the defendant drug company produced or marketed the drug DES for use in preventing miscarriages during pregnancy.' *Collins*, 342 N.W.2d 37, 50ff.

justification the court referred to the Wisconsin Constitution which provides in Article I, Section 9 that '[e]very person is entitled to a certain remedy in the laws for all injuries, or wrongs which he may receive in his person, property, or character.' This allows the courts 'to fashion an adequate remedy' 'when an adequate remedy or forum does not exist to resolve disputes or provide due process.' The Wisconsin Supreme Court came therefore to the conclusion that 'the interests of justice and fundamental fairness' demand that the producers of the drug should bear the cost of injury. The court assumed that the drug company is in a better position than the victim to absorb the cost of the injury and that the cost of damages awards will act as incentive for drug companies to test adequately the drugs they place on the market.

The New York Supreme Court adopted an even broader market share theory in *Hymowitz v Eli Lilly*,⁵⁶ by relating to the risk a defendant created in the national market ('national market theory'). In this case, the court dispensed with the requirement of an individual causal relationship between plaintiff and defendant. According to this theory, the plaintiff must only show that she ingested DES and that her injuries result from the use of DES. Defendants can evade liability only by proof that they did not manufacture or market DES for pregnancy use.

It must be stressed that the doctrine of market share liability is used only in a minority of US-states. In the majority of states liability still requires that the specific product alleged to have caused the injuries is identified with particularity. Efforts to expand the market share approach beyond DES cases have been mostly rejected by US courts. In *Becker v Baron Brothers*,⁵⁷ the Supreme Court of New Jersey declined to apply the market share approach to an asbestos case because asbestos products – unlike DES – are not uniformly dangerous. They have a varying degree of toxicity and can therefore not be treated as a monolithic group.⁵⁸ In *Santiago v Sherwin Williams Co*,⁵⁹ and *Skipworth v Lead Indus Association*,⁶⁰ the courts rejected market share liability for personal injury caused by lead paint because the plaintiffs were not able to show the defendants' contribution to the market in the relevant period of time which span over several decades. The defendants were also not the actual manufacturers of the hazardous product, but only the bulk suppliers of raw material. The only judicial decision to date allowing the plaintiff in a lead pigment case to proceed under market share theory is *Jackson v Glidden Co*.⁶¹ The theory of market share liability was also rejected in several rulings in cases concerning products containing the

56 539 N.E.2d 1069 (NY 1989).

57 649 A.2d 613 (NJ 1994).

58 See also *Robertson v Allied Signal, Inc*, 914 F.2d 360, 379-80 (3d Cir 1990).

59 3 F.3d 546 (1st Cir 1993).

60 690 A.2d 169 (Pa 1997).

61 647 N.E.2d 879 (Ohio Ct App 1995). The appeal was rejected in 868 N.E.2d 680 (Ohio 2007).

HIV virus,⁶² but in re *Methyl Tertiary Butyl Ether*,⁶³ market share liability was applied in an environmental liability case concerning the contamination of groundwater in Orange County, California, by various oil companies. The companies used the gasoline additive methyl tertiary butyl ether in underground storage tanks from where it leaked into the groundwater.

For European lawyers the ‘market share liability’ doctrine has inspired many theorists of tort law over the last decades. Dutch and French courts, however, when deciding DES cases, did not follow the market share theory of the Californian Supreme Court, but found different, even more far-reaching solutions in favour of the victims. The Dutch Supreme Court,⁶⁴ lightened the burden of proof of causation for the victims and held all the defendant drug producers jointly and severally liable. In 2009,⁶⁵ and 2010,⁶⁶ the French Supreme Court also ruled in favour of the plaintiffs. It came to the conclusion that plaintiffs in DES cases only need to show that the victim’s bodily injury was caused by prenatal exposure to DES. Causation is already established if medical expertise asserts that the victim suffered from a disease (e.g., cancer tumour) typical for exposure to DES and if there are no indications that the victim has been exposed to other risk factors for the development of the disease. It is then up to the defendant pharmaceutical companies who put the substance on the market to prove that their product did not cause the damage. If they fail to do so they are jointly and severally liable for the sustained harm.

3.3.2 The ‘increased material risk of harm’-test of the UK Supreme Court

In *Fairchild v Glenhaven Funeral Services Ltd*,⁶⁷ the House of Lords (since 2009 ‘The Supreme Court’) had to deal with compensation claims of workers who had been exposed to asbestos at three different workplaces. The workers suffered from mesothelioma, a specific kind of cancer which is typical for exposure to asbestos, but unlike asbestosis (another asbestos related disease) not dependent on the amount of fibre ingested which, taken to the extreme, means that already one inhaled fibre can trigger the disease. Accordingly, the claimants could show that their illness was caused by exposure to asbestos at the workplace but could not say which employer was the most likely source of the asbestos fibre which caused the harm. The court

62 *Ray v Cutter Labs*, 754 F Supp 193 (MD Fla 1991); *Morris v Parke, Davis & Co*, 667 F Supp 1332 (CD Cal 1987); *Smith v Cutter Biological, Inc*, 823 P.2d 717 (Haw 1991).

63 *Methyl Tertiary Butyl Ether (MTBE) Products Liability Litigation*, 859 F.3d 178 (2d Cir 2017).

64 Hoge Raad (HR) 9 October 1992, *Nederlandse Jurisprudentie* (NJ) 1994, 535.

65 Cour de cassation 2e civ, 24 September 2009, No 08-16.305, Bull 2009 I No 187.

66 Cour de cassation 1re civ, 28 January 2010, No 08-18.837, Bull 2010 I No 22.

67 (2002) UKHL 22, (2003) 1 AC 32.

held that in a case where causation cannot be established because of lack of scientific knowledge, the application of the ‘but for’-test would lead to the inherently unfair result to leave the claimant without any remedy. In such cases it must be sufficient for the proof of causation that the claimants can show that the defendant’s actions constituted a breach of duty and that this breach of duty had a material effect on the likelihood of injury. Accordingly, the House of Lords held that all the employers were jointly and severally liable for the damage.

This ‘increased material risk of harm’-test was also applied in the mesothelioma case of *Barker v Corus (UK) Ltd*,⁶⁸ with the difference that the House of Lords decided not for joint, but only for several liability according to the increase in risk caused by the individual defendant. For victims of mesothelioma (but not for other constellations) this ruling was reversed by the legislator who provided in Section 3 of the Compensation Act 2006 for joint and several liability of each tortfeasor. In *Sienkiewicz v Greif (UK) Ltd*,⁶⁹ the Fairchild-rule was even applied in a mesothelioma case against one single defendant. The Supreme Court held the defendant employer liable for the full loss, although evidence did not show that the defendant increased the risk of harm by more than 50% (as would be required by the evidentiary standard of the common law) but, according to the judge on the facts, only by a smaller amount, concretely by 18% over the general environmental exposure.

3.3.3 Proportional liability

Many jurisdictions allow under certain circumstances for the finding of proportional liability. When damage is caused by multiple polluters courts may also apply the theory of proportionate liability and apportion liability in proportion to each polluter’s contribution to the cumulative total emissions. In Chinese law this is explicitly provided in Article 67 Tort Law. Another very prominent example is the theory of loss of a chance (*perte d’une chance*). This theory does not solve the causality problem as such, but rather opens the way to circumvent the problem of causation by recognising the loss of an opportunity as compensable damage. Many jurisdictions accept this theory for compensation under tort and/or contract law, especially in cases concerning compensation for medical malpractice and against lawyers for loss of procedural chances.⁷⁰ In these cases the defendant’s breach of contract or, under tort law, negligent activity was not the cause of the harm itself (the illness or the

68 (2006) UKHL 20, (2006) 2 AC 572.

69 (2011) UKSC 10, (2011) 2 AC 229.

70 According to a comparative study concerning Europe, the theory is accepted in France, Italy, Portugal, Spain, Netherlands, Ireland and Slovenia, see Helmut Koziol, ‘Comparative Report’ in Bénédicte Winiger et al. (eds), *Digest of European Tort Law, Volume 1: Essential Cases on Natural Causation* (Springer 2007) 589.

legal problem), but only deprived the claimant of the opportunity to obtain a benefit or avoid a loss (e.g., the chance to recover from an illness or to win a lawsuit). In most jurisdictions, especially in France where this theory has a long tradition, the recognition of the theory allows for partial compensation of the incurred harm in proportion to the reduction of the chances not to suffer the loss.⁷¹

A concept with comparable results is applied by Austrian courts which, in application of the theory of alternative causation, find for proportional liability in some exceptional cases where it cannot be established whether the harm (e.g., personal injury) was caused by the defendant's tortious behaviour (e.g., the doctor's medical malpractice) or by a fact in the claimant's own sphere (e.g., genetic predisposition).⁷²

3.3.4 Compensation despite scientific uncertainty: Hepatitis B vaccinations and the French courts

In the last two decades, the French Supreme Court (*Cour de cassation*) has been confronted with a series of compensation claims brought by persons who developed a demyelinating disease (especially multiple sclerosis) after having been vaccinated against hepatitis B. Some of these claims were based on compensation rules for work accidents, but most were product liability cases filed against the producer of the vaccine.⁷³ At the beginning, the court dismissed the claims for lack of sufficient scientific evidence that the plaintiffs' harm was actually caused by the vaccination, although the lower courts had stressed the fact that science was not able to show that the vaccinations were not the cause of the disease either.⁷⁴ After the *Conseil d'État*, the highest French administrative court, accepted causation in cases where the disease appeared within three months after vaccination provided that there were no other plausible causes for the disease,⁷⁵ the *Cour de cassation* changed its position. It came to the conclusion that the question of causation is a matter of fact which must be decided by the lower courts. It further held that this decision cannot be based on probabilistic evidence alone, but must be decided by the lower courts according to the facts of the individual case.⁷⁶ Since these rulings of the *Cour de cassation* several

71 See François Terré et al., *Droit civil. Les obligations* (12th edn, Dalloz 2018) 1005.

72 Bernhard Koch, 'Proportional liability for causal uncertainty' in Miquel Martin-Casals and Diego Papayannis (eds), *Uncertain causation in tort law* (CUP 2016) 67.

73 For a comprehensive account of these cases see Jean-Sébastien Borghetti, 'Litigation on hepatitis B vaccination and demyelinating diseases in France' in Miquel Martin-Casals and Diego Papayannis (eds), *Uncertain causation in tort law* (CUP 2016) 11.

74 *Cour de cassation* 1re civ, 23 September 2003, No 01-13063, Bull 2003 I No 188.

75 *Conseil d'État*, 9 March 2007, No 267635, No 278665, No 283067, No 285288.

76 *Cour de cassation* 1re civ, 22 May 2008, No 05-20.317 and 06-10.967, Bull 2008 I No 148 and 149. This reasoning was accepted by the ECJ in Case C-621/15 *N.W., L.W., C.W. v Sanofi*

lower courts have delivered decisions in hepatitis B cases. The rulings are diverse, but in most cases the courts ruled that the causal link cannot be established.⁷⁷

4 Conclusions for climate change damage

4.1 Synergistic and progressive effects

There is no doubt that the establishment of causation for climate change damage is very difficult and a true challenge for any court. In the context of climate change damage all thinkable causality scenarios culminate at the same time. Damage is caused by multiple emitters. Emitters and injured parties are located far from each other. There is a considerable time lag between emissions and the harm and there is the influence of synergistic effects between the various emitted substances on the one hand and between those substances and the natural environment on the other hand. However, at least from a theoretical point of view, one can say that the matter of causation for climate change damage is difficult, but not totally unsolvable. As outlined before, tort law theory provides for some useful theories that can also have some merits for the adequate attribution of climate change related damage. Traditional tort law acknowledges not only liability in case of concurrent, cumulative and alternative causality constellations, but is even able to offer well balanced solutions for the problems of synergistic and progressive effects of noxious substances.

4.2 Minimal contribution by multiple emitters

Tort law theory also offers solutions for the more complex scenarios of climate change damage. First of all, when discussing causality with respect to climate change damage, it is necessary to emphasise the fact that climate change leads to different types of damage and that not all types of climate change damage raise the same problems of causation.⁷⁸ For those events which can be directly attributed to the large-

Pasteur MSD SNC (2017) OJ C277/10, a preliminary ruling upon request of the Cour de cassation on the interpretation of Article 4 of Dir 85/374/EEC (1985) OJ L210/29.

77 See Jean-Sébastien Borghetti, 'Litigation on hepatitis B vaccination and demyelinating diseases in France' in Miquel Martin-Casals and Diego Papayannis (eds), *Uncertain causation in tort law* (CUP 2016) 11, 26f.

78 This was already stressed by Will Frank, 'Climate change litigation – Klimawandel und haftungsrechtliche Risiken, Erwiderung auf Chatzinerantzis/Herz (NJOZ 2010, 594 = NJW 2010, 910)' (2010) 10 *Neue Juristische Online-Zeitschrift* 2296; Will Frank, 'Überlegungen zur Klimahaftung nach Völkerrecht' (2014) 33 *Neue Zeitschrift für Verwaltungsrecht* 695 and Will Frank, 'Zur Kausalitätsproblematik und Risikozurechnung bei Klimaschäden im Zu-

scale rise of the temperature of the atmosphere, like the rise of sea levels or the gradual melting of glaciers and polar caps, climate science can show that the causal link is actually quite clear: these events are predominantly caused by greenhouse gases emitted into the atmosphere due to human activities. The causal relationship between the emission of greenhouse gases and the consequences for the natural environment also includes the finding of actionable harm caused by those natural events to persons and property. Examples for such scenarios are the rebuilding cost for a village situated on a sea-cliff that has become uninhabitable like in the *Kivalina* case, or, the cost for a protective dam against the melting glacier water as was alleged by the claimants in the *Lliuya* case. With respect to these scenarios, the problem for the establishment of causation lies not so much in the scientific proof of causation as such, but in the attributability of the incurred harm to specific polluters due to the long emission periods and the large number of polluters who, over the last hundred years, have been releasing greenhouse gases into the atmosphere.

For such constellations, causation theory can offer the theory of minimal causation. In such scenarios the mere application of the ‘but for’-test is not able to produce acceptable results because, due to the smallness of the contributions, it does not indicate the concrete share of the individual contributor. Although this cannot be established with certainty for the individual emitter, it is legitimate to assume that each emitter actually caused a part, albeit a very small part, of the damage. According to legal doctrine such scenarios can be qualified as cases of concurrent minimal causation. As the number of emitters is quite high and the shares that can be attributed to the individual emitters are quite low, solidary liability of each emitter would be excessive and would lead to a result that is neither just nor, due to an extreme over-deterrent effect, economically efficient. It would therefore make much more sense to hold each emitter only liable for its share. As this share cannot be established with sufficient probability, it is fair and reasonable to estimate the share according to the overall amount of greenhouse gases which the individual contributor has emitted in the past.

However, the application of the theory of minimal causation to these types of climate change damage encounters the further problem that greenhouse gases only lead to climate change if they exceed a certain threshold. Greenhouse gases, especially carbon dioxide (also methane and nitrous oxide, but not fluorinated gases) are part of natural processes and can be absorbed to a certain extent by the natural environment. It can, therefore, be assumed that emissions caused by a single person (breathing, driving a motor vehicle, heating the home) will never be sufficient to exceed this threshold. As these emitters do not even have the slightest potential to cause climate change damage, it would, already from a theoretical point of view, not be justifiable

sammenhang mit Entschädigungs- und Schutzansprüchen gemäß Völkerumweltrecht’ (2015) 8 Bonner Rechtsjournal 42.

to subject those contributors to the theory of minimal causation. The idea to hold the average person liable for climate change damage would also constitute a perversion of the tort law system which is designed for the solution of conflicts between certain identifiable persons on a case-by-case basis. Such an approach would overwhelm the system both from a theoretical and, considering the enormous number of past and actual emitters of greenhouse gases, practical viewpoint. Hence, the theory of minimal causation can at best be applied to the major emitters of greenhouse gases, such as the 'big players' in the energy generating industry, who are responsible for the emission of enormous amounts of greenhouse gases over the last decades.

Under the condition that the concept of minimal causation is accepted for such large-scale emitters the main problem for the allocation of the loss to the individual polluter is then not so much the matter of causation, but, as was outlined above, rather the need to find an applicable cause of action for the claim.

4.3 The concept of proportional liability for cases of mere statistical evidence

An even bigger challenge of climate change damage for legal doctrine is posed by those cases where it is only possible to establish statistical evidence between the rising temperatures on the planet and the sustained damage. Examples for this are the causation of property damage or personal injury by extreme weather events, like storms, floods or heat waves. Such events occur regularly even without climate change, but science shows that climate change increases their frequency and severity. In these cases, the causal link between the emission of greenhouse gases and the incurred damage is not straightforward, but only of a statistical nature. In order to cope with such constellations under tort law, the question arises (i) whether under these conditions full proof of causation can be dispensed with and (ii) whether it can be justified to split the damage incurred by an individual person according to the percentage of the increase in probability of the occurrence of such damage, or respectively, according to the percentage of the increase in damage caused by the human emission of greenhouse gases.

Legal doctrine, as was shown before, is not altogether reluctant to award liability in cases where plaintiffs are confronted with scientific and structural problems for the proof of causation. These examples from court practice indicate that courts are ready to address the issue and to adjust their usual requirements for the establishment of the causal link in relation to the individual constellation. The applied solutions vary. Courts may accommodate the injured party by lowering the standard of proof for the individual case, as was done by the UK Supreme Court in the *Fairchild* and the *Sienkiewicz* cases and by some French courts with respect to the hepatitis B vaccination-cases. Another method to address the plaintiff's evidentiary distress is the reversal of the burden of proof from the plaintiff to the defendant, like the courts did in the *DES-*

cases. Under both theories courts may decide for only partial liability (DES-cases, where the courts applied the theory of market share liability, the UK-case of *Barker v Corus*) or even full liability (*Fairchild*, *Collins v Eli Lilly & Co* and the DES-decisions of the Dutch and French Supreme Courts). Especially in medical cases, partial compensation of the actual damage in proportion to the reduction of the chances not to suffer the loss (theory of ‘loss of a chance’) gains more and more recognition.

The solution to apportion compensation according to the statistical evidence of causation is also supported by tort law theory.⁷⁹ From a theoretical point of view, liability for the increase of risk is recommended because it leads to just and efficient results: liability for the statistical increase of risk allocates each emitter exactly the damage costs the individual emitter has caused (justice argument) and would induce the emitter to reduce its future emissions to the efficient level (economic argument). Whether jurisdictions are ready to accept such theories of proportionate liability is a matter of policy. To make emitters of greenhouse gases liable for an increase in damage which is only statistically verifiable is in any case a far-reaching measure that pushes tort law to its conceptual and factual limits. In these cases, the causal connection between the individual emitter of greenhouse gases and the person who suffers specific climate change related damage is very loose. The causal connection becomes only then more obvious when it is established between the respective groups, the group of emitters of greenhouse gases on the one side and the group of injured parties on the other side. Such an undertaking requires procedural instruments that allow for the aggregation of these persons to coherent groups. A good example for such a device is the class action of US-law.⁸⁰ Another appropriate instrument would be the introduction of specific compensation funds that are fed by the greenhouse gas generating industry.

79 Israel Gilead, Michael Green and Bernhard Koch (eds), *Proportional liability: Analytical and comparative perspectives* (De Gruyter 2013); Bénédict Winiger et al. (eds), *Digest of European tort law, Volume 1: Essential cases on natural causation* (Springer 2007). For the application of proportional liability to climate change damage, see Douglas Kysar, ‘What climate change can do about tort law’ (2011) 41 *Environmental Law* 1 and Michael Duffy, ‘Climate change causation: Harmonizing tort law and scientific probability’ (2009) 28 *Temple Journal of Science, Technology and Environmental Law* 185.

80 In the USA class action is provided by Rule 23 Federal Rules of Civil Procedure. For the application of this procedural instrument on pollution damage see for instance James Elrod, ‘The use of federal class actions in mass toxic pollution torts’ (1988) 56 *Tennessee Law Review* 243; Kenneth Rivlin and Jamaica Potts, ‘Proposed rule changes to federal civil procedure may introduce new challenges in environmental class action litigation’ (2003) 27 *Harvard Environmental Law Review* 519; Jason Betts, ‘The influence of mass toxic tort litigation on class action rules reform’ (2004) 22 *Virginia Environmental Law Journal* 249; Deborah Hensler, ‘The globalization of class actions: An overview’ in Deborah Hensler et al. (eds), *The globalization of class actions* (The Annals of the American Academy of Political and Social Science, SAGE 2009) 7ff. For prominent cases see: In re *Agent Orange*, 745 F.2d 161 (2d Cir 1984); In re *Three Mile Island*, 87 FRD 433 (MD Pa 1980).

5 Compensability of climate change damage

Tort liability claims require compensable damage. The mere pollution of the atmosphere with greenhouse gases and the consequent increase in temperature of air and water do not yet constitute damage according to tort law. Damage in the legal sense only arises when these events have a negative effect on persons or objects. From an economic point of view, it is essential that tort law covers a wide range of harm. Liability rules that exempt certain types of damage from liability or make it too burdensome for victims to enforce their claims are not effective because they allow for the externalisation of costs, either to the victims or to society.

With respect to climate change damage, it is apparent that there is ample room for externalisation under current liability rules. Civil liability generally covers damage to persons (personal injury and death) or objects (property damage). In many countries tort liability will also cover the costs of preventive measures taken by the injured person or by public authorities in order to prevent the occurrence or the enlargement of the damage. But already the attitude towards recovery for pure economic loss,⁸¹ is rather incoherent in the civil law jurisdictions. While some, especially those jurisdictions that are in the Germanic law tradition, are rather reluctant to grant compensation for pure economic loss, this is not the case in countries that are part of the Roman legal family. These jurisdictions only require the plaintiff to show a personal and actual interest in the claim to have legal standing.⁸² This different view has important practical consequences because climate change often affects people who are economically dependent on a natural resource without owning it.⁸³

Another problematic area is environmental damage. In civil law, damage to the environment is covered if the harmed environmental good concerned can be attributed to a natural or legal person, for example when rising temperatures cause damage to a managed forest. Civil liability remedies, however, reach their limits when the harm does not concern the private sphere of a person, but the environment as such, for instance, when environmental stress on flora and wildlife leads to the destruction of natural habitats (for example, coral reefs, animal and plant sanctuaries) or the extinction of certain species. Despite some efforts in several civil law jurisdictions to extend civil liability remedies to natural resource damage,⁸⁴ one must see that the problem of changing ecological environments due to changes of climate patterns

81 Loss not connected to, or resulting from, damage to person or property.

82 Mauro Bussani and Vernon Palmer (eds), *Pure economic loss in Europe* (CUP 2003); Willem van Boom, Helmut Koziol and Christian Witting (eds), *Pure economic loss* (Springer 2004). With respect to environmental harm: Monika Hinteregger, 'Comparison' in Monika Hinteregger (ed), *Environmental liability and ecological damage in European law* (CUP 2008) 625f.

83 E.g., the owner of a skiing resort who suffers loss of income because of a lack of snowfall.

84 See Monika Hinteregger, 'Comparison' in Monika Hinteregger (ed), *Environmental liability and ecological damage in European law* (CUP 2008) 632ff.

cannot be adequately addressed or even solved by tort law remedies. Rising temperatures of water and air cause gradual and comprehensive changes to flora and fauna which cannot be categorised as compensable damage by any tort law concepts. The interest of society in the protection and preservation of these resources is thus best left to administrative law.

6 Conclusions and outlook

Climate change is happening and there is no doubt that courts will increasingly be confronted with claimants seeking compensation for the damage resulting from climate change on the basis of tort law. Very often these attempts will not primarily be motivated by the desire to actually obtain compensation for the incurred loss but will rather serve as a vehicle to draw public attention to the problem in order to induce emitters of greenhouse gases to change their future behaviour.

The compensability of climate change damage caused by greenhouse gas emissions on the basis of tort law raises, however, fundamental legal issues that cannot be answered easily. This article examined some of these problems, like the need for an applicable cause of action, the establishment of causation and the question of compensable damage. If tort law is to serve as an effective instrument for climate protection, it must be adjusted to the specific characteristics of climate change damage. This concerns the attribution of legal standing, especially with respect to pure economic loss, a considerable extension of the right to bring collective action and the comprehensive recognition of minimal and proportional liability by national tort laws.

In view of these fundamental problems, it is important to see that there are constellations where tort liability does not encounter any of the specific problems mentioned above and where tort law liability plays already an important role for the remediation of climate change damage. This is the case for all those liability claims which are not directed against the emitter of greenhouse gases, but against persons or institutions who are legally obliged to protect individuals or objects from harm caused by climate change. Providers of building services, for instance, must take the altered climatic parameters into account when rendering their services. Accordingly, architects or builders who do not consider the increasing frequency of storms, heavy snowfall or flooding in the region right from the planning stage can be made liable for their failure when damage occurs.

Another important field where tort law already governs climate change related damage is public authority liability. In our modern society the state has to a very large extent taken over the task of protecting its citizens from harm. This also com-

prises the prevention of loss caused by natural events⁸⁵ which includes those caused by climate change. Public law is developing diverse strategies in order to adapt to the changing natural environment and mitigate the negative consequences of climate change for the public. This comprises the enactment of measures to protect the public from risks related to climate change or the adaptation of legal rules, for example, land use and building regulations, to the changed environmental parameters. Failures to take action or flaws in the application of these rules may result in the liability of public authorities. Such liability may arise if, for instance, the competent public authority does not protect an area from the imminent risk of flooding, or when a municipality designates an area that is increasingly affected by flooding for residential use, or when the competent authority does not take into account that the road or railway track is threatened by landslides because of the increase of flash floods in the area. When damage has already occurred liability may arise if the responsible public authority fails to prevent further damage, or if clean-up and remediation operations are inaccurate. Public authority liability for climate change related damage has a double effect. On the one hand, it ensures that victims of climate change get compensation for their loss and, on the other hand, it induces political stakeholders to take the risks of climate change seriously in their political work and decision making. These examples show that private law in general and tort liability in particular may have a broader scope of application and higher importance for climate change related damage than expected at first sight.

Bibliography

- Abate R, 'Automobile emissions and climate change impacts: Employing public nuisance doctrine as part of a "global warming solution" in California' (2008) 40 Connecticut Law Review 591.
- Ahrens HJ, 'Außervertragliche Haftung wegen der Emission genehmigter Treibhausgase?' (2019) 70 Versicherungsrecht 645.
- Archer D and Pierrehumbert R (eds), *The warming papers: The scientific foundation for the climate change forecast* (Wiley-Blackwell 2011).
- Betts J, 'The influence of mass toxic tort litigation on class action rules reform' (2004) 22 Virginia Environmental Law Journal 249.
- Borghetti JS, 'Litigation on hepatitis B vaccination and demyelinating diseases in France' in Martin-Casals M and Papayannis D (eds), *Uncertain causation in tort law* (CUP 2016).
- Bussani M and Palmer V (eds), *Pure economic loss in Europe* (CUP 2003).
- Calabresi G, *The costs of accidents: A legal and economic analysis* (Yale UP 1970).
- Coase R, 'The problem of social cost' (1960) 3 The Journal of Law and Economics 1.

85 Member states of the European Convention on Human Rights are obliged to protect the public in case of natural disasters: see e.g., *Budayeva and Others v Russia* ECHR 2008-II 267.

- Duffy M, 'Climate change causation: Harmonizing tort law and scientific probability' (2009) 28 Temple Journal of Science, Technology and Environmental Law 185.
- Ellis J, 'The sky's the limit: Applying the public trust doctrine to the atmosphere' (2014) 86 Temple Law Review 807.
- Elrod J, 'The use of federal class actions in mass toxic pollution torts' (1988) 56 Tennessee Law Review 243.
- Faure M (ed), *Tort law and economics* (2nd edn, Edward Elgar 2009).
- Faure M and Nollkaemper A, 'International liability as an instrument to prevent and compensate for climate change' (2008) 43 Stanford Journal of International Law 123.
- Faure M and Peeters M (eds), *Climate change liability* (Edward Elgar 2011).
- Frank W, 'Climate change litigation – Klimawandel und haftungsrechtliche Risiken, Erwiderung auf Chatzinerantzis/Herz (NJOZ 2010, 594 = NJW 2010, 910)' (2010) 10 Neue Juristische Online-Zeitschrift 2296.
- Frank W, 'Zur Kausalitätsproblematik und Risikozurechnung bei Klimaschäden im Zusammenhang mit Entschädigungs- und Schutzansprüchen gemäß Völkerumweltrecht' (2015) 8 Bonner Rechtsjournal 42.
- Frank W, 'Überlegungen zur Klimahaftung nach Völkerrecht' (2014) 33 Neue Zeitschrift für Verwaltungsrecht 695.
- Gerrard M and MacDougald J, 'An introduction to climate change liability litigation and a view to the future' (2013) 20 Connecticut Insurance Law Journal 153.
- Gilead I et al. (eds), *Proportional liability: Analytical and comparative perspectives* (De Gruyter 2013).
- Gimpel-Hinteregger M, *Grundfragen der Umwelthaftung* (Manz 1994).
- Grossman D, 'Warming up to a not-so-radical idea: Tort-based climate change litigation' (2003) 28 Columbia Journal of Environmental Law 1.
- Hensler D, 'The globalization of class actions: An overview' in Hensler D et al. (eds), *The globalization of class actions* (The Annals of the American Academy of Political and Social Science, SAGE 2009).
- Hinteregger M, 'Comparison' in Hinteregger M (ed), *Environmental liability and ecological damage in European law* (CUP 2008).
- Hinteregger M (ed), *Environmental liability and ecological damage in European Law* (CUP 2008).
- , 'Liability for terrorism-related risk under member state law' in Bergkamp L et al. (eds), *Civil liability in Europe for terrorism-related risk* (CUP 2015).
- , 'Civil liability and the challenges of climate change: A functional analysis' (2017) 8 Journal of European Tort Law 238.
- , 'Environmental liability' in Lees E and Viñuales J (eds), *The Oxford handbook of comparative environmental law* (OUP 2019).
- , 'The causal link in tort-based climate change litigation: A challenge for the courts' in Mak C and Kas B (eds), *Civil courts and the European polity: The Constitutional role of private law adjudication in Europe* (Hart Publishing in print).
- Intergovernmental Panel on Climate Change (IPCC), *Intergovernmental panel on climate change 1990 (First Assessment Report)* <<https://bit.ly/3tNCvzu>> accessed 29 August 2022.
- Kahl W and Weller M P (eds), *Climate change litigation: A handbook* (C.H. Beck, Nomos, Hart Publishing 2021).
- Kamiskaité-Salters G, 'Climate change litigation in the UK: Its feasibilities and prospects' in Faure M and Peeters M (eds), *Climate change liability* (Edward Elgar 2011).

- Kling A, 'Die Klimaklage gegen RWE – Die Geltendmachung von Klimafolgeschäden auf dem Privatrechtsweg' (2018) 51 Kritische Justiz 213.
- Koch B, 'Comparative report' in Winiger B et al. (eds), *Digest of European Tort Law. Volume 1: Essential cases on natural causation* (Springer 2007).
- , 'Proportional liability for causal uncertainty' in Martin-Casals M and Papayannis D (eds), *Uncertain causation in tort law* (CUP 2016).
- and Koziol H (eds), *Unification of tort law: Strict liability* (Kluwer Law International 2002).
- Koziol H (ed), *Unification of tort law: Wrongfulness* (Kluwer Law International 1998).
- , 'Comparative report' in Winiger B et al. (eds), *Digest of European tort law. Volume 1: Essential cases on natural causation* (Springer 2007).
- , *Basic questions of tort law from a Germanic perspective* (Jan Sramek Verlag 2012).
- , *Österreichisches Haftpflichtrecht* (4th edn, Jan Sramek 2020).
- Kysar D, 'What climate change can do about tort law' (2011) 41 Environmental Law 1.
- Lee M, 'Climate change tort' (28 August 2015) <<https://ssrn.com/abstract=2695107>> accessed 24 August 2021.
- Lord R et al. (eds), *Climate change liability: Transnational law and practice* (CUP 2011).
- Malaurie P and Aynès L, *Droit des biens* (8th edn, LGDJ 2019).
- Munro G, 'The public trust doctrine and the Montana constitution as legal bases for climate change litigation in Montana' (2012) 73 Montana Law Review 123.
- Peel J and Osofsky H, *Climate change litigation* (CUP 2015).
- Peeters M, 'The regulatory approach of the EU in view of liability for climate change damage' in Faure M and Peeters M (eds), *Climate change liability* (Edward Elgar 2011).
- Posner R, *Economic analysis of law* (9th edn, Wolters Kluwer Law & Business 2014).
- Pöttker E, *Klimahaftungsrecht* (Mohr Siebeck 2014).
- Reboul-Maupin N, *Droit des biens* (8th edn, Dalloz 2020).
- Rivlin K and Potts J, 'Proposed rule changes to federal civil procedure may introduce new challenges in environmental class action litigation' (2003) 27 Harvard Environmental Law Review 519.
- Salzman J and Hunter D, 'Negligence in the air: The duty of care in climate change litigation' (2007) 155 University of Pennsylvania Law Review 1741.
- Schäfer HB and Ott C, *Lehrbuch der ökonomischen Analyse des Zivilrechts* (6th edn, Springer Gabler 2020).
- Shavell S, *Economic analysis of accident law* (Harvard UP 1987).
- Spier J, 'Legal aspects of global climate change and sustainable development' (2006) 7 InDret: Revista para el Análisis de Derecho 1.
- Spier J (ed), *Unification of tort law: Causation* (Kluwer Law International 2000).
- Terré F et al., *Droit civil. Les obligations* (12th edn, Dalloz 2018).
- Tunc A, 'Introduction', *International encyclopedia of comparative law. Vol 11 Torts* (1983) I-164ff.
- Tyndall J, 'On the absorption and radiation of heat by gases and vapours, and on the physical connexion of radiation, absorption, and conduction' (1861) 151 Philosophical Transactions of the Royal Society of London 1.
- Van Boom W et al. (eds), *Pure economic loss* (Springer 2004).
- Wagner G, *Klimahaftung vor Gericht* (C.H. BECK 2020).
- Weller MP and Tran ML, 'Klimawandelklagen im Rechtsvergleich – private enforcement als weltweiter Trend?' (2021) 29 Zeitschrift für Europäisches Privatrecht 573.

Monika Hinteregger

Widmer P (ed), *Unification of tort law: Fault* (Kluwer Law International 2005).

Wild C and Weinstein S, *Smith and Keenan's English law* (17th edn, Pearson 2013).

Winiger B et al. (eds), *Digest of European tort law. Volume 1: Essential cases on natural causation* (Springer 2007).

Zimmermann R, 'Comparative report' in Winiger B et al. (eds), *Digest of European tort law. Volume 1: Essential cases on natural causation* (Springer 2007).

Cases

Australia

Burnie Port Authority v General Jones Pty Ltd (1994) HCA 13.

France

Conseil d'État, 9 March 2007, No 267635, No 278665, No 283067, No 285288.

Cour de cassation 1^{re} civ, 23 September 2003, No 01-13063, Bull 2003 I No 188.

Cour de cassation 1^{re} civ, 22 May 2008, No 05-20.317 and 06-10.967, Bull 2008 I No 148 and 149.

Cour de cassation 2^e civ, 24 September 2009, No 08-16.305, Bull 2009 I No 187.

Cour de cassation 1^{re} civ, 28 January 2010, No 08-18.837, Bull 2010 I No 22.

Germany

BGH 16.12. 1977, V ZR 91/75, *Neue Juristische Wochenzeitschrift* 1978, 419.

BGH 18.09.1984, VI ZR 223/82, *Entscheidungen des Bundesgerichtshofs in Zivilsachen* 92.

BGH 06.02.1986, III ZR 109/84, *Entscheidungen des Bundesgerichtshofs in Zivilsachen* 97.

The Netherlands

Hoge Raad (HR) 9 October 1992, *Nederlandse Jurisprudentie* (NJ) 1994, 535.

United Kingdom

Barker v Corus (2006) UKHL 20, (2006) 2 AC 572.

Fairchild v Glenhaven Funeral Services (2002) UKHL 22, (2003) 1 AC 32.

Hunter v Canary Wharf Ltd (1997) AC 655 (HL).

RHM Bakeries (Scotland) Ltd v Strathclyde Regional Council 1985 SC (HL) 17.

Sienkiewicz v Greif (UK) Ltd (2011) UKSC 10, (2011) 2 AC 229.

United States

Becker v Baron Bros, Coliseum Auto Parts, Inc, 649 A.2d 613 (NJ 1994).

California v General Motors Corp, No C06-05755 MJJ, 2007 WL 2726871 (ND Cal 17 September 2007).

Cambridge Water v Eastern Counties Leather plc (1994) 2 AC 264 (HL and CA).

Collins v Eli Lilly & Co, 342 N.W.2d 37 (Wis 1984).

Comer v Murphy Oil USA, 585 F.3d 855 (5th Cir. 2009).

Conley v Boyle Drug Co, 570 So. 2d 275 (Fla 1990).
Hymowitz v Eli Lilly & Co, 539 N.E.2d 1069 (NY 1989).
In Re "Agent Orange" Product Liability Litigation, 745 F.2d 161 (2d Cir. 1984).
In re Three Mile Island, 87 FRD 433 (MD Pa 1980).
Jackson v Glidden Co, 647 N.E.2d 879 (Ohio Ct App 1995).
Martin v Abbott Laboratories, 689 P.2d 368 (Wash 1984).
M.C. Mehta v Union of India (UOI) and Ors. AIR (1987) SC 1086.
Morris v Parke, Davis & Co, 667 F Supp 1332 (CD Cal 1987).
Native Village of Kivalina v Exxon Mobil Corp, 696 F.3d 849 (9th Cir 2012), cert denied, 133 Ct 2390 (20 May 2013).
Ray v Cutter Labs, 744 F Supp 193 (MD Fla 1991).
Robertson v Allied Signal, Inc, 914 F.2d 360 (3d Cir 1990).
Santiago v Sherwin Williams Co, 3 F.3d 546 (1st Cir 1993).
Sindell v Abbott Laboratories, 607 P.2d 924 (Cal. 1980).
Skipworth by Williams v Lead Industries Ass'n, Inc, 690 A.2d 169 (Pa 1997).
Smith v Cutter Biological, Inc, 823 P.2d 717 (Haw 1991).
Summers v Tice, 33 Cal 2d 1 (1948).
United States v Carroll Towing Co, 159 F.2d 169 (2d Cir 1947).

European Court of Human Rights

Budayeva and Others v Russia App no 15339/02, 21166/02, 20058/02 11673/02, 15343/02 (ECtHR, 20 March 2008).

European Court of Justice

Case C-621/15 N.W., L.W., C.W. v *Sanofi Pasteur MSD SNC, Caisse primaire d'assurance maladie des Hauts-de-Seine, Carpimko* (2017) OJ C277/10.

Legal standing in climate-related lawsuits¹

Erika Wagner

Abstract

This article highlights the need to establish collective actions in Austrian civil procedural law relating to so-called climate lawsuits. Collective actions of non-governmental organisations (NGOs), which seek to enforce (enhanced) environmental protection, have so far not been filed in Austria. To successfully bring a climate action, a Climate Liability Directive at the EU level, which contains the corresponding collective rights, must be introduced. In the light of the procedural safeguards of Article 6 and 13 ECHR and 47 CFREU, it is necessary to establish an additional legal procedure to ensure effective legal protection of individual interests. An individual would face significant hurdles if they had to bring a climate action against corporations to protect their legal interests. In the absence of other realistic options, it is necessary to supplement the constitutional standard of individual legal protection with collective models of legal protection. The EU's new proposal for a directive on representative actions for the protection of the collective interests of consumers confirms the trend towards collective redress, but it only concerns consumer protection law. The proposal contains many aspects that would also provide a suitable basis for climate liability cases. To expand the scope of application of the EU directive to climate protection law, it is necessary to urgently extend the appendix to climate-relevant legal acts of EU law, such as the Emissions Trading Directive. Climate protection law would then become relevant in private law climate suits.

1 Introduction

What kinds of civil actions should be considered?

First of all, claims for damages should be considered. These include claims for compensation of expenses for protective measures, e.g., for the construction of a dam, as claimed in the RWE case.² This case involved so-called salvage costs, which

1 This article was written on the occasion of the 2018 Conference on 'Climate change, responsibility and liability' held in Graz, Austria. The content reflects the then current state of research and law.

2 Higher Regional Court Hamm 30 November 2017 I-5 U 15/17 (*Lliuya v RWE*).

had to be reimbursed according to the conditions of the law on compensation for damages.³

Claims for climate-related damage can be asserted nationally or supranationally by means of an action for injunctive relief (§ 1004 BGB, § 364 ABGB). One may refer to the criteria of prevailing local standards and the significance of the nuisance, relevant for national immission protection suits, and also apply them in cases of long-distance pollution.⁴ On the broader scale of climate protection law, emissions from industrial nations affect the global climate. As a result, catastrophes occur on the other side of the world (especially in developing countries). The fact that the quality of the contribution of the emission changes during the course of its global distribution (on the one hand, CO₂ emissions; on the other hand, increases in temperature and drought) does not constitute an obstacle for immission protection suits.

For the assertion of supranational matters, the court under consideration must have international competence. Further, it must be possible to apply national laws to supranational issues, with legal rules determining which national laws apply in a given case. According to the Rome II regulation and national legal provisions, German and Austrian courts are generally competent for climate protection suits. Therefore, the relevant national legislation (German or Austrian law) is applicable to claims for damages or immission protection. Since we speak about environmental liability, developing nations can also put in claims for damages in accordance with their national rules. These countries could enact strict legislation on climate damages and bypass current legal problems (proof of causality), employing rules on presumption.

Currently, the entire discussion on climate protection claims revolves around the problem of causality. Plaintiffs must prove that the emissions of a particular CO₂ emitter have, at least with a high degree of probability, caused particular damage or contributed thereto. Many experts claim that it is not possible to provide that kind of proof of causality in climate protection matters, since the causal connection is not sufficiently clear (burden of proof with high probability).⁵ Others, however, favour the introduction of a system of proportional liability for climate-related damage, according to the proportion of the greenhouse gas emitted.⁶ From a scientific point of

3 Erika Wagner, 'Klimaschutz mit den Mitteln des Privatrechts? Präventive privatrechtliche Instrumente: Klimaschutzklagen' in Gottfried Kirchengast Eva Schulev-Steindl and Gerhard Schnedl (eds), *Klimaschutzrecht zwischen Wunsch und Wirklichkeit* (Böhlau Verlag 2018) 230.

4 Erika Wagner, 'Weltklimavertrag und neue Dynamik im Klimaschutzrecht: Klimaklagen' in Katharina Pabel (ed), *50 Jahre JKU* (Verlag Österreich 2018) 11(27); Wagner, Klimaschutz mit den Mitteln des Privatrechts? (n 3) 223f.

5 See District Court Essen 15 December 2016 2 O 285/15 (*Lliuya v RWE*).

6 See Wagner, Klimaschutz mit den Mitteln des Privatrechts? (n 3) 227; see further the case *Fairchild v Glenhaven Funeral Services* (2002) UKHL 22, discussed by Nicola Durrant, 'Tortious liability for greenhouse gas emissions? Climate change, causation and public policy considerations' (2007) 7(2) *Queensland University of Technology Law and Justice Journal* 403;

view, I am especially interested in the latter causality theory. In its decision of 30 November 2017, the Higher Regional Court of Hamm maintained that it was possible to bypass the proof of causality in the RWE case.⁷

Another object of the current controversy is the suitability of the European Greenhouse Gas Emission Allowance Scheme for averting climate protection claims (claims for damages and injunctive relief). This scheme compels some CO₂ producers (about 50%) to pay for their GHG emissions by obtaining respective emission allowances. The discussion revolves around the question of whether the fact that plants are officially authorised hinders the raising of claims for injunctive relief (§ 14 dt. BImSchG,⁸ § 364a ABGB⁹).

For all the aforementioned reasons, I have proposed a European Climate Protection Directive, which addresses in particular the purchase of greenhouse gas certificates under the European Emissions Trading Scheme. It also contains rules regarding international competence and applicable laws.¹⁰

2 The legitimization of the individual in climate protection suits

2.1 Suing for health damage and pecuniary losses resulting from climatic conditions

In civil law, climate-related damages are not compensable insofar as they are supraindividual and ‘only’ stem from the effects of global warming.¹¹ Nevertheless, as last summer showed us, supraindividual damages also involve damages to private legal assets. The crop shortfalls on agricultural land resulting from droughts constitute damages to private legal assets (utilisation of property).¹² That is a good reason for regarding them as individual damages. It may be asserted that the possession of property is embedded in current climatic conditions and that the owner must accept global warming unconditionally and not demand compensation for related damages. However, this argument ignores the fact that it would be possible to utilise the plot of land differently were it not for the current effects of emissions on climate. What the effects of greenhouse gas emissions are on climate and what proportion of these

Giedré Kaminskaitė-Salters, *Constructing a private change lawsuit under English law: A comparative perspective* (Kluwer Law International 2010) 161 ff.

7 Higher Regional Court Hamm 30 November 2017 I-5 U 15/17 (*Lliuya v RWE*).

8 German Federal Act on Protection against Harmful Effects on the Environment Caused by Air Pollution, Noise, Vibrations and Similar Processes (Federal Immission Control Act) BGBl I S 1274, 2021 I S 123.

9 Austrian General Civil Code JGS 1811/946.

10 Wagner, *Klimaschutz mit den Mitteln des Privatrechts?* (n 3) 233f.

11 Wagner, *Weltklimavertrag und neue Dynamik im Klimaschutzrecht* (n 4) 24.

12 *Ibid.*

effects can be attributed to particular perpetrators are merely questions of causality. They do not determine whether the resulting damages are individual or supra-individual. I have repeatedly shown that it is essential to bypass this inadequate causality theory (theory of joint liability).¹³ In my opinion, the theory of proportional causation, on the basis of the respective CO₂ emissions, is applicable and must prompt a rethinking of the established phrase *conditio sine qua non*.

The same considerations apply to health-related damages. However, it will be more challenging to establish a causal connection in such cases since the illnesses in question have to be attributable to the hotter climate. It is well known that CO₂ in the atmosphere does not itself pose any danger to health. Therefore, only disorders caused by heat, such as strokes and circulatory problems, can be considered.

Nevertheless, we should not forget that climate-related claims also aim to assert fundamental rights, namely the right to life and health (Article 2 ECHR and Article 2 and 3 CFREU) and the right to property (Article 1 1. Additional Protocol to ECHR and Article 17 CFREU). The procedural guarantees according to Articles 6 and 13 ECHR and Article 47 CFREU ensure that effective legal protection is available.

What the situations described above have in common is that someone sues for declaratory relief, damages or injunctive relief based on another's emission-causing conduct.

Since there are hardly any realistic chances of individuals lodging suits, it might seem both legitimate and necessary to enhance the protection of individual rights by modelling collective actions; that is the only way to secure fundamental rights.

2.2 Suits in (consumer protection law) cases involving indirect effects on climate and air quality

In the VW emissions scandal, a legally prohibited cut-off device led to NO_x values in exhaust gases being exceeded. Consumers claimed damages because of their vehicle's shorter life span and reduced value, and because they were misled when making their purchase decisions. These legal proceedings had a lasting effect on the practices of diesel vehicle manufacturers.

Furthermore, entrepreneurs may sue one another for unfair business practices involving climate protection. For example, one of them could secure a competitive advantage by violating climate-relevant legal requirements. Similarly, a manufacturer could market his product by falsely maintaining that the production thereof was CO₂ neutral by affixing a carbon-neutral seal.¹⁴ In these cases, which involve only 'indirect climate change litigation', it is essential to consider the possibilities for individu-

13 Ibid 227f.

14 See Oberster Gerichtshof Austria 28 January 2012 4 Ob 202/12b.

als and associations to lodge claims. Here, too, suits for a declaratory judgment, compensatory damages and an injunction are conceivable.

2.3 Models for lodging claims

With regard to the lodging of claims, we have to distinguish between four aspects:

2.3.1 Rights of the individual to institute individual actions

The individual is legitimated to lodge complaints in proceedings for the reasons mentioned initially – that is, for claims involving personal rights, material property (substantive law) and consumer rights.

Currently, only individuals are entitled to lodge suits involving climate damage. Individual suits do not, however, seem to constitute an adequate instrument for combatting climate damage. One person will find it very difficult to locate the injuring party, identify potentially imminent damages, establish global causal connections,¹⁵ and so on. The cost-related risk in the event of a loss in court is especially burdensome, since the potential opponents in climate-change litigation are international concerns with immense financial resources. Against this background, the European Commission, in its recommendation of 6 November 2013, stated that it was necessary to amend the fundamental rights to take account of this situation.¹⁶

2.3.2 Climate-related suits as class-action lawsuits

In Austria, the national variant of class-action lawsuits ('Austrian-style class action') has gained acceptance.¹⁷ Yet, only liability claims can be asserted in the form of class actions, as will be shown in the following section. According to prevailing scholarly opinion, it is not possible to transfer cases for injunctive relief to an organisation.

15 See Bernhard Burtscher and Martin Spitzer, 'Haftung für Klimaschäden' (2017) 21 ÖJZ 945, 952.

16 Commission Recommendation 2013/396/EU of 11 June 2013 on common principles for injunctive and compensatory collective redress mechanism in the Member States concerning violations of rights granted under Union Law (2013) OJ L 201/60, 60.

17 Oberster Gerichtshof Austria 12 July 2005 4 Ob 116/05w.

2.3.3 Models for class-action lawsuits in environmental law at the beginning of the 1990s (*de lege ferenda*)

Since the beginning of the 1990s, environmentalists have discussed the possibility of employing class-action lawsuits in matters concerning environmental protection law.¹⁸ Some of the proposed concepts would be suitable for climate protection lawsuits.¹⁹ I will discuss these in more detail in this article. However, we must remember that the class-action instrument failed to achieve its purpose in the 1990s because of opposition from businesses. It is evident that the demand for class-action lawsuits was, at that time, ‘pure theory’. It would be easier to pass an elephant through the eye of a needle than to expand the possibilities for associations to initiate lawsuits. In fact, Elisabeth Köstinger, the Austrian minister for agriculture and the environment, perceived the restrictions on NGOs participating in environmental impact assessments to be an ‘improvement’ in terms of public participation. Currently, such organisations must have more than 100 members to participate. We should thank our minister for making us aware of the fact that no participation in proceedings and no legal protection is the best kind of participation for NGOs. That is logical, is it not?

2.3.4 Models for class-action lawsuits in the recent past (*de lege ferenda*)

In 2007, a draft law for class-action lawsuits was presented to the Federal Ministry of Justice.²⁰ It was rejected in the face of opposition from businesses. The same model has now been introduced in Germany, partly as a consequence of the VW emissions scandal. The so-called *Law on the introduction of a model action for a declaratory judgment in civil proceedings* came into effect on November 1, 2018. It is aimed at mass damages such as product defects.²¹ In Austria, a similar draft bill was introduced as a motion by Kolba, Noll and their colleagues.

According to this proposal, consumer protection organisations would have legal standing and would be entitled to file claims for declaration. The same would apply

18 ‘Initiative by the members of the National Council Stoitsits, Langthaler, Freundinnen und Freunde regarding a Federal Law on the liability for damage resulting from the existence and operation of environmentally hazardous installations (Federal Environmental Liability Act)’, 169/A XVIII. GP, the application is available at <<https://bit.ly/3qL65DA>> accessed 29 March 2022; Ministerial Draft 991 105/ME XCIII GP; Peter Rummel and Ferdinand Kerschner, *Umwelthaftung im Privatrecht: Überlegungen zu Rechtsdogmatik und Rechtspolitik* (Signum 1991) 74ff.

19 See Initiative (n 18); Ministerial Draft (n 18); Rummel and Kerschner (n 18) 74ff.

20 Ministerial Draft concerning a Federal Act amending the Code of Civil Procedure, the Court Fees Act and the Lawyers’ Fees Act (*Zivilverfahrens-Novelle*) 2007, 70/ME XXIII.GP <www.parlament.gv.at/PAKT/VHG/XXIII/ME/ME_00070/> accessed 22 November 2021.

21 German Federal Act on the Introduction of a Civil Procedure Model Complaint 12 July 2018 BGBl I 2018/26, 1151.

to non-profit foundations, which, according to their statutes, ‘safeguard interests of other persons that are similar to their own interests and represent potential claimants’.

At the European level, a draft version of a directive on claims for collective injunction and damages was passed in accordance with the recommendation of the EU Commission of 6 June 2013.²² This directive could also be of relevance, at least for indirect climate lawsuits. The list of applicable legal acts in Annex I should be extended to include emissions allowance trading or type approval to make it possible for direct climate lawsuits to be subsumed under this directive.

3 The Austrian form of class-action lawsuits

Austrian civil procedure is based on individual claims under private law. It involves two-party legal proceedings.²³ Collective legal protection is therefore basically ‘exotic’ in Austrian civil procedures. A genuine collective lawsuit is only provided for in the context of §§ 28 ff KSchG (Federal Consumer Protection Act) and § 14 UWG (Federal Act against Unfair Competition). Since respective possibilities for collective lawsuits did not suffice, the ‘Austrian form of the class-action lawsuit’ came into being.

3.1 Initial situation

How should the following hypothetical situation be evaluated? Because of a crop shortfall, a significant number of farmers from all over Austria lodge a lawsuit against a large CO₂ emitter, demanding compensation for financial losses. At the same time, they sue for damage to property because many of their animals have died. (They may possibly do this by assigning their claims to the Chamber of Agriculture.) Would it be possible for them to lodge a class-action lawsuit in this situation? The position of class-action lawsuits in jurisprudence is as follows:

There is no established case law for the Austrian class action. In a comprehensive *obiter dictum*, the Austrian Supreme Court (OGH) did, however, reassert the position it had previously taken in the *TUI* case.²⁴ According to OGH 4 Ob116/05w, a class-action lawsuit of this kind is basically permissible. The case in question dealt with a demand for repayment of the excessively high interest that many borrowers had paid

22 Commission Recommendation 2013/396/EU (n 16) 60.

23 Robert Fucik, ‘Vor § 1’ in Walter H Rechberger (ed), *Kommentar zur ZPO* (Springer 2016), 475 <<https://link.springer.com/book/10.1007%2F978-3-211-69393-3>> accessed 4 January 2022.

24 See Oberster Gerichtshof Austria 12 July 2005 4 Ob 116/05w.

to a credit institute. The collection assignment of the claims was transferred to the Austrian Consumers' Association (VKI). Following the 'mediatory solution' of *Kodek*²⁵ and *Kalss*,²⁶ the Austrian Supreme Court established, in addition to the requirements of § 227 ZPO (The Code of Civil Procedure), the following preconditions for the joint assertion of various claims from different claimants by means of a collection assignment:

- The legally relevant facts and circumstances do not have to be identical, but the reasons for the claims have to be essentially similar (there must be a significant common basis).
- In addition, virtually identical factual or legal questions – relating to the main question or to a relevant preliminary question that concerns all of the claims – have to be presented for consideration.²⁷

If all these requirements are considered for climate change suits, the reasons for lodging claims have to be essentially similar. In case 4 Ob 116/05w, a large number of borrowers were involved, various interest rate adjustment clauses were subject to evaluation, and questions surrounding the limitation periods for claims and the acknowledgment of the settlements by the borrowers had to be considered. Nevertheless, the Supreme Court ruled that it was permissible to assert the claims that had been transferred to the Austrian Consumers' Association (VKI) by means of collective assignment.

There are some practical problems with the 'Austrian form of class-action lawsuits', according to *Klauser*²⁸ (who developed this kind of lawsuit together with the Austrian Consumers' Association):

- The claimants have to assign their claims to a third party, even if they only do so in order to achieve legal assertion.
- The association that acts as a plaintiff for all class members is ultimately liable for all of the opposing party's expenses. It further assumes all the organisational costs and therefore bears all costs and risks that will not be reimbursed, even in the case of a positive outcome. These costs are not foreseeable.
- The calling in of a litigation funder is not per se unproblematic. The enterprises that assume this function are profit-oriented and accept only cases

25 Georg E Kodek, 'Die Sammelklage nach österreichischem Recht – Ein neues prozeßrechtliches Institut auf dem Prüfstand' (2004) 8 ÖBA 615, 619ff.

26 Susanne Kalss, 'Massenverfahren im Kapitalmarktrecht' (2005) 5 ÖBA 322.

27 Oberster Gerichtshof Austria 12 July 2005 4 Ob 116/05w.

28 Alexander Klauser, 'Alpine, VW und noch immer keine echte österreichische Sammelklage' (2015) 6 VbR 182, 183ff.

that they have a good chance of winning. They are not willing to finance social-politically motivated ones.²⁹

3.2 The significance of the class-action lawsuit for cases involving climate liability

With respect to suits for claims in cases involving climate change liability, the following points must be made:

- The Austrian Supreme Court is right in not setting strict standards for the ‘essentially similar reasons’ that constitute a requirement for making claims.³⁰
- On the other hand, it seems too far-reaching to regard the emissions of all CO₂ producers and the resulting climate-related damages as ‘essentially similar reasons for making claims’.
- Let us use the facts from the RWE case³¹ to construct a class-action suit. We can assume that the farmers in a valley whose land is flooded by water from a melting glacier would say that the nearby coal-fired power station is responsible. In my opinion, they would then have ‘essentially similar reasons for making claims’.
- It will be difficult to find a litigation funder since the costs are not foreseeable.
- Another question is: to whom could the claims of the affected farmers reasonably be transferred? After all, the matter in question does not involve damaged consumers; therefore, the Austrian Consumers’ Association would not be a competent party. If damage to consumers had occurred, the Austrian Technical Chambers of Agricultural Workers and the President’s Conference of the Austrian Chambers of Agriculture would, according to the Consumer Protection Law (KSchG), have had the authority to act, but that was not the case. Besides, the Consumer Protection Law is not applicable if no contractual relationship exists. Climate change damages are tortious damages.
- NGOs and parties that are legal personalities would be authorised to sue for the damages the farmers had incurred.
- Injunction suits based on personal or property rights cannot be lodged as class-action lawsuits, as respective claims are not transferable.

29 On this issue Erika Wagner, ‘Rechtsprobleme der Fremdfinanzierung von Prozessen’ (2001) 7 JBl 427, <<https://rdb.manz.at/document/rdb.tso.LI0107270020>> accessed 4 January 2022.

30 See Oberster Gerichtshof Austria 12 July 2005 4 Ob 116/05w.

31 Higher Regional Court Hamm 30 November 2017 I-5 U 15/17 (*Lliuya v RWE*).

- In the aforementioned cases involving the VW emissions scandal, the Austrian Supreme Court decreed that the Austrian Consumers' Association was authorised to assert the consumer claims.
- Litigation funding would be necessary to enable the farmers to lodge a climate lawsuit. The financial means for class actions are provided by litigation funders that assume the entire risk of the litigation and receive a percentage of the amount awarded in case of a positive outcome. In the literature, a great deal of attention has been accorded to the relationship between the litigation funder and its clients.³² Among other things, a violation of the *quota litis* (contingency fees) prohibition, according to § 879 para 2 no 2 ABGB (Austrian Civil Code), is being discussed.³³ In conjunction with class-action lawsuits and in the light of the *quota litis* discussion, the principle of 'equality of arms' as defined in 6 ECHR, has to be considered. Practically, litigation funding is only available to the claimant. The defendant has no possibility of avoiding the risk of losing the case. Many observers consider this a violation of § 879 para 2 of the Austrian Civil Code.³⁴ On the contrary, litigation funding of class actions makes an 'equality of arms' possible in the first place. It facilitates the assertion of claims and thereby establishes equal opportunities for the opposing parties in court. Usually – and especially in the case of class actions – the opposing parties are not equal. Generally, the claimant is economically less potent than the defendant. When considering the special circumstances surrounding class actions, litigation funding is permissible for them.³⁵

3.3 Summary of the possibilities *de lege lata*

The Austrian class action theoretically provides a basis for asserting claims for climate damage *de lege lata*, which associations and NGOs could make use of. However, in view of the many practical problems involved, it does not yet afford sufficient collective legal protection against climate damage.

The Code of Civil Procedure in its current form was not conceived to deal with climate-relevant mass procedures. The parallel settlement of hundreds or thousands of individual cases would overwhelm the legal system. For that reason, England,

32 In considerable detail Wagner, JBL 2001 (n 29) 427ff.

33 See, e.g., Elisabeth Scheuba, 'Sammelklage – Einklang mit der ZPO erbeten' (2005) 10 *ecolex* 747, 749.

34 Scheuba (n 33) 749.

35 See Paul Oberhammer, 'Sammelklage, quota litis und Prozessfinanzierung' (2011) 11 *ecolex* 972.

Sweden, France, Belgium, the Netherlands and other states have introduced group actions (see below).³⁶

4 Collective legal protection in environmental law

The available instruments for consumer protection do not suffice for judicially asserting climate damages. At the beginning of the 1990s, when the introduction of environmental liability was envisaged, a number of draft laws containing highly constructive models for group-action lawsuits were proposed. However, none of them has yet been implemented in civil environmental liability laws.

4.1 1991 Draft Law of the Ministry 105/ME XVIII GP

According to §11 para 1, claims based on §§ 3 and 4 (claims for liability and injunction) can be asserted by:

1. the Federal Chamber of Commerce, the Association of the Austrian Chambers of Labour, the Austrian Chamber of Agriculture, the Presidential Conference of the Austrian Chambers of Agriculture and the Austrian Trade Union Conference.
2. the Environmental Ombudsman, the Environmental Fund and similar authorities established by law whose function is to protect the environment.
3. associations whose purpose is to protect the environment (according to their statutes) and which are materially and geographically affected by the environmental damage in question. Associations have to provide security for the legal costs of the accused party if it requests that they do so (para 1 no. 3. – security deposit).

The draft law provides legitimation for class actions. However, it still has to be ascertained whether climate damages are included.

The proposal applies to plants that endanger the environment (§ 1), meaning plants that pose a particular danger to the environment because of their nature, size or location. The damages included, however, cover only damage to persons, their health or their property. In my opinion, damage to property caused by the input of pollutants that affect the climate is therefore included.

In the aforementioned constellation, the relationship between individual and collective legal protection is still open to debate; the draft did not provide a solution.

36 Martin Ebers, *Rechte, Rechtsbehelfe und Sanktionen im Unionsprivatrecht* (Jus Privatum 212, Mohr Siebeck 2016) 774.

4.2 Motion 169/A XVIII GP – Motion of Stoists, Langthaler and Friends concerning a federal law for the liability for damages resulting from the existence and operation of plants that are environmentally dangerous (Law Concerning the Liability for Environmental Damage – *Umwelt-HG*)

4.2.1 Concentration of proceedings – § 27

As per § 27 of the proposed *Umwelt-HG* (Motion 169/A XVIII GP)

diverse legal disputes resulting from a single damaging event can be combined in the sense of § 187 Code of Civil Procedures, even if neither the claimants nor the defendants in these proceedings are identical.

4.2.2 A large number of damaged persons – § 28

If the liability has been established and a harmful event has caused damage to a large number of individuals, § 28 of the proposed *Umwelt-HG* (Motion 169/A XVIII GP) provides that

the court can, following its independent conviction, consolidate the compensation into a lump sum (§ 273 Code of Civil Procedures). It can thereby define classes of damage based on the degree of affectedness of the claimants. This can be done especially if guaranteeing case-by-case justice to each of the numerous claimants would lead to unacceptable delays in the proceedings.

Similarly, these provisions would have been applicable to climate-related damage cases in the draft law of the Green Party. Damage to the climate was expressly mentioned in the definition of environmentally hazardous plants (§ 1/1). The latter were defined as plants that pose a special danger to the environment because of their nature, size or location. These include dangers:

1. to humans, fauna and flora;
2. to the soil, water, air, the climate and the landscape;
3. resulting from interactions between the objects of protection listed in 1. and 2.; and
4. to material goods.

Remarkably, according to this draft law, the proposed liability was not confined to damages to protected legal interests; it also included purely ecological damage (lasting damage to the ecosystem). Climate-related damages would definitely have been included. That was a very revolutionary proposal for civil-law specialists.

4.3 The draft Law of the Conference of the Chamber of Workers – Law on Liability for Environmental Damage³⁷

§ 14

(1) To assert claims according to §§ 2-6, these claims can be transferred to social-partner associations and to other associations – ones that are statutorily concerned with matters of environmental protection or with the representation of claims under neighbour law related to nuisances and have sufficient capital resources.

(2) The legal persons mentioned in paragraph 1 are furthermore legitimated to assert suits for the injunction of actions that cause lasting damage to the environment as well as suits for the partial or complete removal of lasting environmental damages.

§ 1a contains an exhaustive enumeration of the types of plants that pose a danger to the environment. It lists them according to how they are licensed. Although it does not explicitly reference climate protection, it does not exclude liability for climate-related damages.

4.4 Draft for an Environmental Damage Liability Act – Kerschner/Rummel

§ 5 paragraph 2

The owners of the affected real estate property are legitimated to make claims; so are those legal persons or public entities otherwise legitimated or obligated to take the aforementioned measures.

§ 1 paragraph 2

Plants or actions are hazardous to the environment if they are likely to cause damages to the soil, air or water by spreading substances, causing vibrations, producing heat, or similarly endangering the aforementioned goods.

Summary: This draft law also allows for the lodging of claims for climate-related damages to legally protected assets and provides a model for collective legal protection.

5 Suggestion for a class-action suit in European law

At the European level, there is a trend towards collective legal protection. This is even though the models currently being discussed are not designed for climate protection but rather for consumer protection. Nevertheless, they can, *de lege lata*, serve as cornerstones of class actions in climate cases.

³⁷ Cornelia Mittendorfer and Gerhard Schuster, *Haftung für Umweltschäden*. (Informationen zur Umweltpolitik 65, Institut für Wirtschaft und Umwelt des österreichischen Arbeiterkammertages 1990).

5.1 Genesis

In April 2018, *Věra Jourová*, the commissioner responsible for justice, consumer protection and gender equality, presented a ‘new deal for consumers’,³⁸ which contained a draft directive on legal action taken by organisations for the protection of the collective interests of consumers.³⁹ It was intended to replace the directive on injunctions for the protection of consumers’ interests 2009/22/EC as well as to enhance the enforcement of consumer legislation, as called for by the EU Regulation 2394/2017 on cooperation in consumer protection (CPC-Regulation). The suggestion for the directive was based on the ‘Fitness Check of Consumer and Marketing Law’ of the Commission, which, among other matters, criticised the ineffectiveness of the injunction suit in protecting consumers from adverse practices.⁴⁰

5.2 Establishing goals

Compared to the injunction-suit directive, the new directive is intended to have a broader application. Even more importantly, it is supposed to provide qualified entities with an improved set of instruments to assert the collective interests of consumers. According to the Commission, the proposal is, *inter alia*, in accordance with Article 11 of the Treaty on the Functioning of the European Union (TFEU). It also considers environmental protection requirements and is in line with the Aarhus Convention on Access to Information, Participation of the Public in Decision-Making Procedures and Access to Justice in Environmental Matters (Recital 43).

Regarding the preceding paragraph, the following clarification is necessary: The prevailing view is that the Aarhus Convention does not cover liability cases. From its wording, however, it could be maintained that injunction suits which, e.g., involve the permissibility of nuisances, have to do with ‘decisions about an activity not mentioned in Annex I that could have a considerable impact on the environment’. For national law, this would mean that the public would have a right to participate in legal proceedings. According to Article 9 para 2, NGOs recognised in domestic law

38 European Commission, ‘A new deal for Consumers: Commission strengthens EU consumer rights and enforcement’ (European Commission Press Release IP/18/3041, 11 April 2018) <https://ec.europa.eu/commission/presscorner/detail/en/IP_18_3041> accessed 6 May 2019.

39 European Commission, Proposal for a Directive on representative actions for the protection of the collective interests of consumers, and repealing Directive 2009/22/EC of 11 April 2018, COM(2018) 184 final.

40 See European Commission, Report of the fitness check of 23 May 2017, SWD (2017) 209 final <<https://bit.ly/3pJ3idP>> accessed 6 March 2022; Civic Consulting, ‘Study for the fitness check of consumer and marketing law’ (European Commission, 2016) <<https://ec.europa.eu/newsroom/just/items/59332>> accessed 6 May 2019; Peter Rott and Axel Halfmeier, ‘New Deal für Verbandskläger?’ (2018) 72 VbR 136.

could also challenge the legality of decisions on injunctions. Article 6 para 1 lit b, however, expresses a reservation; this participation is subject to the provisions of national law. Therefore, it is highly questionable whether the Aarhus Convention can be applied to injunction suits involving private law.

However, the new EU directive would provide some strategic impetus in the direction of increased collective participation. For example, in scenarios such as the emissions scandal, the victims of unfair business practices (e.g., misleading advertisements by an automobile manufacturer) could obtain collective compensation. This holds true even though the legal framework of the European Union does not include the type approval of vehicles in Annex I. This kind of collective legal protection has not yet been provided for in EU law.

5.3 Area of application

The Annex listing the EU legal acts that collective actions may enforce should be radically expanded. It is supposed to extend far beyond current law or the EU regulation 2394/2017 which deals with cooperation in consumer protection. In terms of scope, it comprises all violations of Annex I EU rules by entrepreneurs that harm or are likely to harm the collective interests of consumers in many areas, such as financial services, energy, telecommunications, health and the environment. In the future, it is intended to include 59 legal acts, with the list being continually updated. The list includes legal acts relating to capital markets law, insurance law, user's rights of telecommunication services, electricity and gas, passenger rights, food labelling, package tours, data protection and patent protection. It also includes environmentally related legal acts: eco design, requirements for the environmentally compatible design of energy-related products,⁴¹ eco labels,⁴² the overall energy efficiency of buildings⁴³ and other environmentally relevant legal acts.

It does not, however, contain an additional blanket clause pertaining to the violation of EU legal acts. Such clauses, which many member states have decreed (see comparison below), are intended to enhance consumer protection. The list does include product liability laws but not product safety laws. Some legislation that is relevant to the VW emissions scandal is missing: Directive 2007/46/EC and EC Regulation 715/2007 on the type approval of vehicles.

41 No 29 of Annex I refers to Directive (EU) 2009/125/EC of 21 October 2009 establishing a framework for the setting of ecodesign requirements for energy-related products OJ L 285/10.

42 No 34 of Annex I refers to Regulation (EC) 66/2010 of 25 November 2009 on the EU Eco-label OJ L 27/1.

43 Directive 2010/31/EU of 19 May 2010 on the energy performance of buildings OJ L 153/13, Recital 13.

5.4 Aims of lawsuits

The central aim of the proposal is to enhance the efficacy of legal actions taken by organisations. For this purpose, the injunction suit, currently the only instrument available to achieve this aim, is considered inadequate.⁴³ Therefore, it has been proposed that entities qualified in terms of Article 5 para 3 should be accorded the right to take measures to remove the lasting effects of violations. This kind of legal action is often designed as a ‘claim to remedial action’.⁴⁴

Article 6 para 1 goes into detail, explaining that such actions may oblige the entrepreneur to compensate the injured party, make repairs, reduce prices, allow the client to terminate a contract or reimburse the purchase price.

For this purpose, Article 6 para 1-3 envisages a graduated system:

1) Lawsuits for corrective measures that benefit all consumers are granted priority. Respective lawsuits may be filed if the affected consumers have suffered comparable damages and are identifiable; the relevant damages must result from the same practices that have been carried out over a certain period of time or in the context of a particular purchase (Article 6 para 2 lit a).

2) The second priority level applies to compensation claims in the public interest. These claims do not benefit individual consumers but rather promote a public goal in the collective interests of consumers (e.g., legal aid funds for consumers, awareness campaigns or consumer movements⁴⁵). Under certain circumstances, the qualified entity that filed the lawsuit might also benefit because it is acting in the public interest; this is expressly stated in Recital 39.⁴⁶ According to Article 6 para 3, this kind of lawsuit is only possible if consumers suffered only slight losses, as it would require excessive effort to distribute the reimbursement among all of them.

3) According to Article 6 para 2, a subsidiary declaratory resolution is possible too. It should eventually provide the basis for individual suits or for further collective suits (to the extent that national laws permit them).

There is an opt-in solution: In view of the conflict with individual interests, the draft directive allows member states to require the individual consumers’ mandates before issuing a declaratory or remedial order. This is in accordance with Article 6 para 1 sentence 2. The decision is only effective for those consumers who have been given an appropriate mandate (i.e., the opt-in solution). Of course, the member states may also choose an opt-out solution. If the remedial measures are only intended to benefit the collective or public interest, no mandate can be required from individual consumers (Article 6 para 3 lit b). However, the described instruments do not replace

44 See Rott and Halfmeier (n 40) 136.

45 COM (2018) 184 final (39) consideration 31.

46 See Rott and Halfmeier (n 40) 136.

the legal protection that concerned consumers may claim based on EU or national law. Instead, they constitute additional measures.

4) Authorisation for lodging lawsuits: ‘qualified entities’. According to the draft directive, only ‘qualified submissions’ are permitted. According to Article 4 of the directive, a submission is only considered ‘qualified’ if:

- it is properly submitted in accordance with the laws of the member state;
- the submitters have a justified interest in ensuring that the involved provisions of EU law are adhered to;
- it is not motivated by profit interests.

For a particular legal action, an entity can be designated as qualified *ad hoc*.

According to the draft directive, consumer organisations and independent public bodies must be guaranteed to come into question as qualified entities. In environmentally relevant matters, the draft directive allows NGOs and environmental ombudsmen to lodge suits; the Austrian Chamber of Labour and the Austrian Consumer Information Association (VKI) are also entitled to do so.

5) Cost barriers for proceedings/financing. The costs that organisations must incur to take legal actions are regarded as a significant barrier to the assertion of rights in most of the EU member states. Therefore, Article 15 para 1 requires member states to take all measures necessary to ensure that the costs of the legal actions taken by organisations do not constitute a financial barrier to the exercising of rights in relation to the measures, according to Article 5 and Article 6. Member states have to minimise legal costs or administrative fees and, if necessary, ensure access to legal aid or provide public funds for that purpose.

There is, however, a special transparency requirement for these costs. At the beginning of the proceedings, organisations must reveal the source of the financial resources generally used for their activity and the source of financial resources employed for the particular lawsuit. Besides that, they must demonstrate that they have sufficient financial resources to represent the interests of the consumers concerned in the best possible way and to bear the opponent’s costs in case the action fails (Article 7 para 1).

Claimants usually turn to litigation funders (and other third parties) to obtain the financial resources needed for a class action. These funders are subject to special requirements when financing legal actions taken by organisations (Article 7). They are not permitted to exert any influence over the decisions of qualified entities, e.g., out-of-court settlements (which is very problematical). To prevent abuse, they are not allowed to provide financial resources for collective action against a defendant who is their competitor or whose financial support they rely on.

6) Supranational legal actions of organisations. Article 16 regulates supranational legal actions taken by organisations. In such cases, freedom from discrimination must be maintained. On the one hand, qualified entities are legitimised to undertake supranational legal actions. On the other hand, the intention is that single individu-

als⁴⁷ or groups consisting of various persons should be able to assert the interests of consumers from various member states. For this to be possible, the qualified entity's seat on which the international competence is based will have to be accepted as the centre of the interests.⁴⁸

7) Summary: Is there also a suitable basis for climate-relevant liability cases? The proposal for an EU directive contains many legal aspects that could enable it to serve as a suitable basis for climate liability cases. To extend its range of applications, it would be necessary to extend the list of climate-relevant legal acts, e.g., to include the directive on emission trading. The included acts would then become relevant to civil law. I can well imagine that this goal might be attainable. This extension is clearly desirable in terms of climate protection, fundamental rights protection and primary law.

Currently, the directive covers only climate-relevant situations that are already covered by consumer-relevant acts of law. It does not open up additional possibilities until its scope of applications is extended.

5.5 Collective legal protection inside and outside the EU

5.5.1 Austria

If a directive of the aforementioned kind – i.e., one on legal actions of organisations aimed at protecting the collective interests of consumers – prevailed in Austria, it would cause a massive upheaval. As previously explained, the concept of the *actio popularis* – an action initiated by an organisation in the absence of a private individual or economic interest – is alien to Austrian civil-law legislators. This is also true in the arena of climate-related damages. Indeed, only the social partners (the chambers),⁴⁹ the Austrian Consumers' Association (VKI) and the Austrian Senior Citizens' Association are legitimised to lodge injunction suits based on the Consumer Law (KSchG)⁵⁰ and the Unfair Competition Act (UWG).⁵¹ Similarly, only the associations listed in § 29 of the Consumer Protection Act are legitimised to assert so-called legal test cases of organisations. These actions would be conceivable in cases of climate-related damage.

47 This results from Article 4 para 3 in connection with Article 15; see Rott and Halfmeier (n 40) 136.

48 Convincingly: Rott and Halfmeier (n 40) 136.

49 Bundesarbeitskammer, Wirtschaftskammer Österreich.

50 Federal Consumer Protection Act BGBl 1979/140, § 29.

51 Federal Act Against Unfair Competition BGBl 1984/448, § 14.

Concerning legal test cases of organisations, see the accurate opinion in Motion 82/A XXVI.GP.

10: Legal test cases of organisations (...) contribute to the development of law and to legal security in the sense of strategic litigation, but they are not suitable for mass damages. Court rulings are not binding for other cases, even if their circumstances and legal situations are identical. Whether or not the exemplary clarification of factual or legal problems in a test case, which is the most economical solution, may be employed in a particular situation depends on the willingness of the opposing party to cooperate. If the other party does not waive the statute of limitations, the asserted claims could become time-barred before the decision is made. Since 2000, the year in which Austrian class actions were first pursued, there has been no case involving mass damages in which the defendant has agreed to waive the statute of limitations.

The possibility of a genuine class action (involving at least 50 claimants) and a test case was provided for in a ministerial draft of the amendment to the civil procedure law in 2007.⁵² It would only have accorded the right to assert claims for test cases to associations in the sense of § 29 of the Consumer Protection Law.⁵³ The proposal failed due to the massive opposition to the concerned commercial interests. A motion to introduce legal test cases in Austria was recently presented; it is based on the German provisions for similar cases which came into effect on November 1, 2018. We will have to wait to see if it succeeds.

5.5.2 Europe

In informal documents, the EU has long been pursuing a plan to introduce collective legal aid in antitrust and consumer law.⁵⁴ Its efforts culminated in the recommendation of 2013/396/EU for ‘Common foundations for collective injunction and damage compensation suits in cases of violations of rights guaranteed by Union law’ (OJ L 201 of 26 July 2013, p. 60). That recommendation later led to the previously discussed proposal for a directive. While preparing that proposal, the EU has thoroughly examined the situation in its member states.

5.5.2.1 The situation in Germany

For a long time, organisations in Germany could only take legal action in cases regulated by the Act against Unfair Competition (UWG), the Law against Restraint of

52 *Zivilverfahrens-Novelle 70/ME XXIII. GP* (n 20).

53 Walter H Rechberger, ‘Reformen des Mehrparteienverfahrens der ZPO: Die geplante “Gruppenklage”’ in Rudolf Welser (ed), *Reformen im österreichischen und im türkischen Recht: Vorträge der Österreichisch-Türkischen Juristenwoche 14. bis 17. April 2010 in Wien* (Veröffentlichungen der Forschungsstelle für Europäische Rechtsentwicklung, MANZ 2010) 57ff.

54 Commission of the European Communities, GREEN PAPER Damages actions for breach of the EC antitrust rules of 19 December 2005, COM(2005) 672 final.

Competition (GWB)⁵⁵ and the Injunctions Act (UKlaG).⁵⁶ Besides that, they could only sue for injunction or elimination. Aggrieved capital investors could only sue for compensation under the provisions of the Capital Markets Model Case Act (Cap-MuG).⁵⁷

Based on the Commission's 2013 recommendation on 'Common foundations for collective injunction and damage compensation suits in cases of violations of rights guaranteed by Union law', Germany passed a law allowing legal test cases.⁵⁸ It came into effect on November 1, 2018. The law stipulates that the statute of limitations is suspended if a legitimised association files a suit. If a settlement is reached, the consumer participates unless he has withdrawn from the suit. If a declaratory judgment is made, the consumer can use it to assert claims of their own against the company.⁵⁹

5.5.2.2 Other EU member states

In the EU member states, there are various forms of mass procedures that are differently structured. In Europe, collective legal protection evolved very slowly. Sweden adopted the role of pioneer – it introduced group proceedings in 2002. Since then, similar proceedings have been introduced in a number of countries, such as Denmark (2007), Finland (2007), Norway (2008), Italy (2010), Poland (2009) and Bulgaria (2013). The manner in which mass procedures are regulated in the Netherlands merits special attention: in that country, there has been a law concerning collective mass damages since 2005. The aim of the procedure is to achieve a settlement. A growing number of international cases are being dealt with according to this model. One example is the *Shell* case with a settlement value of US\$352.6 million.⁶⁰

Sweden is considered one of the first countries to have introduced genuine group lawsuits based on the American class-action model. Furthermore, Swedish civil procedural law provides for two-party litigation and therefore affords no possibility for asserting collective interests. In 2003, Swedish legislators extended the legal protection to cover mass damages and damages to consumers and the environment. How-

55 German Federal Act against Restraints of Competition BGBI I S 1750, 3245.

56 German Federal Act on Injunctions for Consumer Rights and Other Infringements BGBI I S 3422, 4346.

57 German Federal Act on Model Proceedings in Capital Market Disputes BGBI I S 2182.

58 *Gesetz zur Einführung einer zivilprozessualen Musterfeststellungsklage* BGBI I 26/2018 <https://www.bmj.de/SharedDocs/Gesetzgebungsverfahren/Dokumente/BgBl_Musterfeststellungsklage.pdf;jsessionid=379A0C64E6C76807F83DDBB5C29D293A.2_cid334?__blob=publicationFile&v=1> accessed 4 January 2022.

59 Verbraucherzentrale, 'Fragen & Antworten (FAQ) zu Musterfeststellungsklagen' <www.musterfeststellungsklagen.de/faq/musterfeststellungsklage-fragen-und-antworten> accessed 6 May 2019.

60 Gerechtshof Amsterdam 29 May 2009, 106.010.887 ECLI:NL:GHAMS:2009:BI5744.

ever, unlike in American class actions, it is necessary to apply for participation in a procedure (opt-in).⁶¹ In addition to claims under civil law, special regulations such as those in the Environmental Law Code are also actionable. Not only are ‘private group claimants’ (natural or legal persons) entitled to lodge suits, but also organisations that take legal group actions⁶² and officials who undertake ‘public group actions’. The unsuccessful party bears the entire cost.

In Italy, collective damage suits for consumer protection were introduced in 2009. The Italian government, therefore, is one of the most recent ones to have implemented group actions. With this instrument, consumers may sue for compensation – e.g., because of violations of general business conditions, prohibited actions or violations of competition laws. Every member of the group is entitled to make a claim, as are associations and committees.

The development in France is especially noteworthy as the country traditionally opposed group actions with opt-out mechanisms.⁶³ In 2014, however, the French consumer protection law was revised, making group actions with an opt-out mechanism possible. Authorised consumer protection associations are entitled to file respective suits. They assert the individual claims of consumers for damages that are directed against the same defendant. The individual consumer, in contrast, is not legitimised to lodge suits. The scope of application of the French group action includes claims relating to consumer protection law, competition law, health law, the prohibition of discrimination and environmental law.

In Belgium, a group action was similarly introduced in 2014. Only authorised consumer protection organisations and other associations are entitled to lodge suits, and only consumer demands may be asserted. The court may decide whether a given group is to be formed following the opt-in or the opt-out principle. For persons who do not reside in Belgium, only an opt-in is provided for. Prior to the court proceedings, an arbitration procedure is arranged; however, it only takes place after the court admits the suit.

The law on collective settlements in the Netherlands is particularly noteworthy. If a settlement is reached and approved by the competent court, the decision is binding for all cases of a similar nature.⁶⁴ In the Netherlands, a law for collective settlements

61 Caroline Geiger, *Kollektiver Rechtsschutz im Zivilprozess, Die Gruppenklage zur Durchsetzung von Massenschäden und ihre Auswirkungen* (Veröffentlichungen zum Verfahrensrecht 120, Mohr Siebeck 2015) 94.

62 The prerequisite is that the association is a non-profit organisation and that the objective of consumer or environmental protection is enshrined in its statutes.

63 Opt-out: The affected persons may withdraw from the litigation group and proceed independently of the class action; opt-in: The affected persons must assign their claims to the plaintiff; in the event of a positive outcome, they receive financial compensation.

64 European Commission, Report on the Implementation of the Commission Recommendation of 11 June on common principles for injunctive and compensatory collective redress mechanisms

in case of mass damage – WCAM⁶⁵ – has been in place since 2005; it is based on the opt-in principle. It should be mentioned that the procedures are solely aimed at reaching a settlement. This tried-and-proven system was originally conceived for national law only, but it has been employed in a growing number of international cases in the past few years. It is evident that the WCAM procedure has clearly upgraded the status of the Netherlands as a judicial location. Here, the scope of application is not restricted: all existing associations, as well as those that are formed on an ad hoc basis, are legitimised to lodge suits insofar as they pass the competence test of the court. After a claim has been admitted, the court determines the liability of the defendant. Thereafter, attempts are made to reach a settlement. This may be done by means of the WCAM procedure or through an opt-in settlement. Remarkably, there is a high degree of legal security for the affected persons, as the settlement is binding for the entire group. The opt-out system in the Netherlands poses the main problem of dealing with mass claims from many persons.

5.5.3 The American class-action model

In US class actions, one or more of the authorised claimants act both as an individual and as a representative of a group of persons with similar claims.⁶⁶ Only the so-called ‘lead plaintiff’ is given formal party status. The decision affects both the lead plaintiff and the members of the group the plaintiff represents insofar as they have not asked to be excluded from the court procedure (opt-out). The main fields of application for the class action are capital market law, consumer protection and environmental protection.⁶⁷ In the US, each party bears their own costs, independent of the outcome of the procedure. The lawyer’s success fee is taken from the entire fund that the members have provided for compensation purposes.

A comparison of the previously described mass claims in different states shows that the design of the procedures varies considerably. Not only are the areas of application dissimilar, but groups are also formed differently (opt-in and opt-out). The vast majority of states rely on organisations that initiate the procedures in order to prevent misuse. The primary reason for this is to control admissibility. A conspicuous feature of most group suits is the possibility they afford to terminate the procedure with a settlement. The reason for the high proportion of settlements is that set-

in the Member States concerning violations of rights granted under Union Law (2013/396/EU) of 25 January 2018, COM (2018) 40 final.

65 *WCAM – ‘Wet collectieve afwikkeling massaschade’* (Dutch Act on the Collective Settlement of Mass Claims).

66 Geiger (n 61) 79.

67 *Ibid.*

lements save money and enable many of the sued companies to come to an agreement quickly and protect their corporate image.⁶⁸

6 Summary: Legal actions taken by organisations in matters concerning environmental and climate protection

Austria will have to yield to the demands of the EU and other current legal tendencies. With respect to environmental and climate-related damages, it should consider the exemplary Swedish model. At this time, it would not be difficult for the Austrian legislator to implement legal actions taken by organisations in the areas of environmental and climate protection. After all, the European economy is booming. Such reforms do not seem probable in the light of the political reality in the past. Perhaps this will now change. Let us be hopeful, especially as effective climate protection has become urgent.

Bibliography

Burtscher B and Spitzer M, 'Haftung für Klimaschäden' (2017) 21 ÖJZ 945.

Civic Consulting, 'Study for the fitness check of consumer and marketing law' (European Commission 2016) <<https://ec.europa.eu/newsroom/just/items/59332>> accessed 6 May 2019.

Commission of the European Communities, Green Paper – damages actions for breach of the EC antitrust rules of 19 December 2005, COM(2005) 672 final.

—, Commission Recommendation 2013/396/EU of 11 June 2013 on common principles for injunctive and compensatory collective redress mechanism in the Member States concerning violations of rights granted under Union Law (2013) OJ L 201/60, 60.

Durrant N, 'Tortious liability for greenhouse gas emissions? Climate change, causation and public policy considerations' (2007) 7(2) Queensland University of Technology Law and Justice Journal 403.

Ebers M, *Rechte, Rechtsbehelfe und Sanktionen im Unionsprivatrecht* (Jus Privatum 212, Mohr Siebeck 2016).

European Commission, Proposal for a Directive on representative actions for the protection of the collective interests of consumers, and repealing Directive 2009/22/EC of 11 April 2018, COM(2018) 184 final.

—, Report of the fitness check of 23 May 2017, SWD (2017) 209 final <<https://bit.ly/3pJ3idP>> accessed 5 March 2022.

—, 'A new deal for Consumers: Commission strengthens EU consumer rights and enforcement' (European Commission Press Release IP/18/3041, 11 April 2018) <https://ec.europa.eu/commission/presscorner/detail/en/IP_18_3041> accessed 6 May 2019.

68 Ibid 111.

- , European Commission Report on the implementation of the Commission Recommendation of 11 June on common principles for injunctive and compensatory collective redress mechanisms in the Member States concerning violations of rights granted under Union Law (2013/396/EU) of 25 January 2018, COM (2018) 40 final.
- Geiger C, *Kollektiver Rechtsschutz im Zivilprozess, die Gruppenklage zur Durchsetzung von Massenschäden und ihre Auswirkungen* (Veröffentlichungen zum Verfahrensrecht 120, Mohr Siebeck 2015).
- ‘Initiative by the members of the National Council Stoitsits, Langthaler, Freundinnen und Freunde regarding a Federal Law on the liability for damage resulting from the existence and operation of environmentally hazardous installations (Federal Environmental Liability Act)’, 169/A XVIII. GP <www.parlament.gv.at/PAKT/VHG/XVIII/A/A_00169/imfname_228380.pdf> accessed 19 November 2021.
- Kals S, ‘Massenverfahren im Kapitalmarktrecht’ (2005) 5 ÖBA 322.
- Kaminskaité-Salters G, *Constructing a private change lawsuit under English law: A comparative perspective* (Kluwer Law International 2010).
- Klauser A, ‘Alpine, VW und noch immer keine echte österreichische Sammelklage’ (2015) 6 VbR 182.
- Kodek GE, ‘Die “Sammelklage” nach österreichischem Recht – Ein neues prozeßrechtliches Insitut auf dem Prüfstand’ (2004) 8 ÖBA 615.
- Oberhammer P, ‘Sammelklage, quota litis und Prozessfinanzierung’ (2011) 11 ecolex 972.
- Rechberger WH, ‘Reformen des Mehrparteienverfahrens der ZPO: Die geplante “Gruppenklage” in Welsner R (ed), *Reformen im österreichischen und im türkischen Recht: Vorträge der Österreichisch-Türkischen Juristenwoche 14. bis 17. April 2010 in Wien* (Veröffentlichungen der Forschungsstelle für Europäische Rechtswissenschaft, MANZ 2010).
- Republic of Austria, Ministerial Draft concerning a Federal Act amending the Code of Civil Procedure, the Court Fees Act and the Lawyers’ Fees Act (*Zivilverfahrens-Novelle*) 2007, 70/ME XXIII.GP <https://www.parlament.gv.at/PAKT/VHG/XXIII/ME/ME_00070/#> accessed 17 March 2022.
- Rott P and Halfmeier A, ‘New Deal für Verbandskläger?’ (2018) 72 VbR 136.
- Rummel P and Kerschner F, *Umwelthaftung im Privatrecht: Überlegungen zu Rechtsdogmatik und Rechtspolitik* (Signum 1991).
- Scheuba E, ‘Sammelklage – Einklang mit der ZPO erbeten’ (2005) 10 ecolex 747.
- Verbraucherzentrale, ‘Fragen & Antworten (FAQ) zu Musterfeststellungsklagen’ <<https://bit.ly/3knPffH>> accessed 6 May 2019.
- Wagner E, ‘Rechtsprobleme der Fremdfinanzierung von Prozessen’ (2001) 7 JBl 427.
- , ‘Klimaschutz mit den Mitteln des Privatrechts? Präventive privatrechtliche Instrumente: Klimaschutzklagen’ in Kirchengast G, Schulev-Steindl E and Schnedl G (eds), *Klimaschutzrecht zwischen Wunsch und Wirklichkeit* (Böhlau Verlag 2018) 230.
- , ‘Weltklimavertrag und neue Dynamik im Klimaschutzrecht: Klimaklagen’ in Pabel K (ed), *50 Jahre JKU* (Verlag Österreich 2018).

Cases

Austria

Oberster Gerichtshof Austria 12 July 2005 4 Ob 116/05w.

Oberster Gerichtshof Austria 28 January 2012 4 Ob 202/12b.

Germany

District Court Essen 15 December 2016 2 O 285/15 (*Lliuya v RWE*).

Higher Regional Court Hamm 30 November 2017 I-5 U 15/17 (*Lliuya v RWE*).

The Netherlands

Gerechtshof Amsterdam 29 May 2009, 106.010.887 ECLI:NL:GHAMS:2009:BI5744.

United Kingdom

Fairchild v Glenhaven Funeral Services (2002) UKHL 22.

Climate change litigation and the private sector – assessing the liability risk for multinational corporations and the way forward for strategic litigation

Mareike Rumpf*

Abstract

According to the Carbon Major Study, only 100 companies are responsible for 71% of global greenhouse gas emissions; climate litigants seek to hold those ‘carbon majors’ responsible for their contribution to the climate crisis. Against this background, this chapter conducts a comprehensive and detailed analysis of Non-US climate litigation against private actors. Thereby, national litigation efforts, as well as claims under the OECD complaint mechanism, are considered. The chapter provides an overview of relevant case law and categorises it. The author touches upon legal challenges and litigation strategies and highlights the role of NGOs in climate litigation against private actors and its broader socio-political relevance and implications.

1 Introduction

The Corona crisis has put the global economy on a halt in an unprecedented manner. Experts and politicians are even debating on how this will change capitalism.¹ Growth rates are being questioned, probably for the first time since the beginning of industrialisation. Roads have become so empty that wild animals are taking a walk in the city, pictures of it going viral on social media. Millions of people are suddenly working from home and have quit commuting to work every day. Changes that were already urgently needed in light of climate change. But all of this has come at a high price for the economy and leads to a newly framed debate on who can and should pay the price for transitioning to a ‘carbon-free’ world. The outcome of this debate will be decisive for the success in climate mitigation.

* My gratitude for support and feedback goes to Nakundwa Mvungi, Svenja Langenhagen and Dinah Cassebaum as well as Prof. Dr. Stefan Oeter and Lydia Omuko-Jung.

1 Oliver Nachtwey, ‘Wenn der Kapitalismus eine Vollbremsung macht’ *Spiegel Online* (4 April 2020) <www.spiegel.de/kultur/corona-krise-es-ist-zeit-fuer-eine-reform-von-wohlfahrt-und-wirtschaftsleben-a-afda945f-b58c-4295-bf3c-7869023d6b54> accessed 4 March 2022; William Davies, ‘The last global crisis didn’t change the world. But this one could.’ *The Guardian* (24 March 2020) <www.theguardian.com/commentisfree/2020/mar/24/coronavirus-crisis-change-world-financial-global-capitalism> accessed 4 March 2022.

Undoubtedly, the private sector plays a crucial role in the global efforts to combat the climate crisis – but in contrast to individuals, a relatively small number of corporations possess significant political power.² Yet the picture is diverse: On the one hand, most of the world's biggest firms are unlikely to meet the Paris climate targets; on the other hand, at the 2019 UN Climate Action Summit, 87 major companies took the lead to achieve the 1.5°C target.³ Yet with companies having already lost a lot during the corona crisis, cost-cutting may well come short-sighted and at the environment's charge. Climate change litigation has played an increasing part in the climate debate all over the world in the past twenty years. It is thus a convenient time to take stock of corporate accountabilities for climate change and ask what role climate litigation can take up in the future.

The following chapter analyses private climate change litigation cases in view of their outcome and prospects of success. The chapter will give an overview of the respective cases, focusing on Non-US-litigation. The first section will give an orientation on the relevant terms and definitions and outline the methodology. The second section will take a look at the facts and figures with regard to the parties and the overall success rates. In the third section, the cases will be analysed according to the respective area of law, focusing on the specific legal challenges. Finally, section four will take up the question of what lessons can be learned from twenty years of climate change litigation.

2 Corporate climate responsibility and (strategic) climate change litigation – definitions and methodology

Since effective national regulations on climate change mitigation regarding the corporate sector are often still missing or not effectively enforced, people have taken it to the courts with climate change litigation worldwide.

A definition of climate change litigation, which has often been cited, is provided in the assessment of Markell and Ruhl as 'any piece of federal, state, tribal, or local administrative or judicial litigation in which the party filings or tribunal decisions directly and expressly raise an issue of fact or law regarding the substance or policy of climate change causes and impacts'.⁴ Additionally, in the following assessment,

2 Corporate Accountability, 'Polluting Paris: How big polluters are undermining global climate policy' (2017) <www.corporateaccountability.org/resources/polluting-paris-big-polluters-undermining-global-climate-policy/> accessed 11 June 2020.

3 UN Global Compact, '87 major companies lead the way towards a 1,5°C future at UN Climate Action Summit' (2019) <www.unglobalcompact.org/news/4476-09-21-2019> accessed 11 June 2020.

4 David Markell and J B Ruhl, 'An empirical assessment of climate change in the courts: A new jurisprudence or business as usual' (2012) 64(15) FLR 15, 27.

climate change litigation also includes complaints under the OECD complaint mechanism and under human rights bodies, i.e., litigation on the international level.

In terms of climate litigation, one may distinguish between strategic and non-strategic litigation and between public and private litigation. Strategic litigation can be defined as litigation which does not solely seek to address and succeed in legal matters, but also addresses social and political issues in the courtrooms and may even intend to question the applied laws or legal principles itself.⁵ Not all claims filed against corporations incorporate a strategic intention. This holds true especially for the claims filed by corporations and states. However, quite some literature was dedicated to assessing ways for litigating climate change from various angles for strategic and socio-political reasons.⁶ As *Grossmann* describes it:

(...) in the past few years, the idea of using litigation as a tool to address the causes and impact of climate change has picked up steam (...). Perceiving a lack of meaningful political action (...) lawyers around the world have begun exploring litigation strategies and, in some cases, initiating actions.⁷

He then moves on to describe the application of tort law in this context as ‘*the most novel or radical idea*’.⁸ This chapter focuses on strategic litigation. Thus, it emphasises cases brought to the courts by non-governmental organisations (NGOs) and individuals. Moreover, it refers to private climate litigation, meaning cases filed against corporations.

Climate change litigation is a worldwide trend, which has seen an increasing number of cases in the last years.⁹ Therefore, some cases may mention the climate crisis in courtrooms or address it as a side argument but not be reported internationally or without gaining international attention. Additionally, some cases may not explicitly refer to climate change at all but may nonetheless be related to it.¹⁰ Thus,

5 Wolfgang Kaleck, ‘Mit Recht gegen Macht’ in Alexander Graser and Christian Helmrich (eds), *Strategic litigation: Begriff und Praxis* (1st edn, Nomos 2019) 25; Adam Weiss, ‘The essence of strategic litigation’ in Alexander Graser and Christian Helmrich (eds), *Strategic litigation: Begriff und Praxis* (1st edn, Nomos 2019).

6 See for example: Hari M Osofsky and William C G Burns (eds), *Adjudicating climate change: State, national, and international approaches* (CUP 2009); Richard Lord et al. (eds), *Climate change liability: Transnational law and practice* (CUP 2012); Oliver C Ruppel, Christian Roschmann and Katharina Ruppel-Schlichting (eds), *Climate change: International law and global governance. Volume I: Legal responses and global responsibility* (Nomos 2013); Michael Gerrard and Gregory E Wannier (eds), *Threatened island nations: Legal implications of rising seas and a changing climate* (1st paperback edn, CUP 2014).

7 David A Grossman, ‘Tort-based climate litigation’ in Hari M. Osofsky and William C G Burns (eds), *Adjudicating climate change: State, national, and international approaches* (CUP 2009) 193.

8 Ibid.

9 Roughly half of the corporate cases were filed within the last two years, 2018-2020; see also Joana Setzer and Rebecca Byrnes, ‘Global trends in climate change litigation: 2019 snapshot’ (2019) 5 <www.lse.ac.uk/GranthamInstitute/publication/global-trends-in-climate-change-litigation-2019-snapshot/> accessed 4 June 2020.

10 Kim Bouwer, ‘The unsexy future of climate change litigation’ (2018) 30 JEL 438, 502.

numbers have to be taken a little careful, as it is difficult to exhaustively gather cases concerned with climate change from all over the world. The following assessment is primarily based on the available data, which is reported to, and gathered by the Columbia University Sabin Centre.¹¹ According to the ‘climate case chart’, 35 out of 356 non-US cases to date (May 2020), are claims against corporations. Further research of the Grantham Research Institute Climate Cases Database led to nine more cases.¹² An additional two OECD complaints, which are related to climate change, could be extracted from the OECD Watch Database.¹³ This amounts to a total number of 46 cases, of which 39 will be assessed in the following section.

Some seven cases will be disregarded in the following assessment as they seem to be too specific to derive a general lesson from, are not related to climate change mitigation, or do not fit in the frame of *strategic* litigation.

This holds true for the Cases *Weaver v Corcoran and Others* and *Grainger Plc and Others v Nicholson*. Both cases are concerned with statements on climate change. While the latter one relates to employment, holding that employment equality regulations cover the right to believe in climate change, the other one is concerned with a defamatory newspaper article.¹⁴ Furthermore, four cases are concerned with governments or NGOs challenging permissions of carbon projects.¹⁵ Since they are considered to fall in the category of ‘permission challenging’, which is not assessed in detail here, they are precluded from further analyses.¹⁶ ‘Permission challenging’ claims are claims which target the permission of projects, predominantly in the context of environmental impact assessment. In the majority of cases, the defendant of the claim is the government agency, while the private sector is ‘indirectly’ affected if the challenged permission is voided.¹⁷ Another two cases, which could be described

11 Sabin Center for Climate Change Law, ‘Climate Change Litigation Database (SCCC)’ <<http://climatecasechart.com>> accessed 4 June 2020.

12 Grantham Research Institute on Climate Change and the Environment, ‘Climate change laws of the World – case database (GRICC)’ <https://climate-laws.org/cclow/litigation_cases> accessed 4 June 2020.

13 OECD Watch, ‘OECD Watch case database’ <<https://complaints.oecdwatch.org>> accessed 4 June 2020.

14 *Weaver v Corcoran and Others* (2015), BCSC 165; *Grainger Plc. and Others v Nicholson* (2010) ICR 360.

15 *Queensland Conservation Council Inc. v Xstrata Coal* (2007) WL 2985210, QCA 338; *Greenpeace Australia Ltd. v Redbank Power Co Pty Ltd*, (1994) WL 1657428 (Land and Environment Court of New South Wales); *Royal Forest and Bird v Buller Coal Ltd* (2012) NZHC 2156.

16 Lesley K McAllister, ‘Litigating climate change at the coal mine’ in Hari M. Osofsky and William C G Burns (eds), *Adjudicating climate change: State, national, and international approaches* (CUP 2009); Meredith Wilensky, ‘Climate change in the courts: An assessment of non-U.S. climate litigation’ (2015) 26 DELPF 131, 145-147, 153-155; See for further details: Markell and Ruhl (n 4), 35-47.

17 See for example: *In re Vienna-Schwechat Airport Expansion* (2017) W109 2000179-1/291E (Austrian Constitutional Court); *Gloucester Resources Limited v Minister for Planning* (2019)

as ‘reversed climate litigation’ will also not be further examined here.¹⁸ Both claims challenge the permission of a renewable energy project on the grounds of its alleged environmental harms. The legal argument made in the *Mills of Lohan Case* is weighing environmental protection against climate change.¹⁹ Thus, a number of 39 cases remain for further assessment.

‘What do we actually speak about when talking about the ‘private sector?’ and ‘What does it mean to be responsible for emissions?’ are other preliminary questions worth shedding some light on.

One of the most cited facts in the context of corporate climate responsibilities nowadays is the *Carbon Majors Study*, which emphasises that only 100 companies are responsible for about 71% of the global greenhouse gases (GHG).²⁰ The companies assessed in the report are so-called *Carbon Majors*, i.e., fossil fuel producers like coal-producing and oil companies, as well as the cement industry.²¹ Since the publishing of the *Carbon Majors Study*, these entities have increasingly been subject to climate change litigation.²² Remarkably though, quite a number of the assessed Carbon Majors are state-owned or partially state-owned corporations. Thus, the emissions that can be traced back to investor-owned Carbon Majors amount to roughly 20% of the global emissions.²³

The private sector, in general, has multiple impacts on climate change, and big corporations do have significant influence. Consequently, the private sector plays a

NSWLEC 7, (2017); for further cases see: ‘Environmental assessment and permitting’, Sabin Center for Climate Change Law (n 11).

18 *City of Bredford Metropolitan Council v Gillson and Sons (1995) 10 PAD; Society for the Protection of Landscape and Aesthetics of France et al. v The Mills of Lohan - Case Summary* (2019) GRICC (Administrative Court of Appeal of Nantes); Some authors also refer to these category as ‘con-cases’, see: Dena P Adler, ‘U.S. climate change litigation in the age of Trump: Year one’ (2018) i, ii <<https://climate.law.columbia.edu/content/searchable-library/#/filter/categories/Climate%20Litigation>> accessed 4 June 2020.

19 *Society for the PROTECTION of LANDSCAPE and AESTHETICS of France et al. v The MILLS of Lohan - Case Summary* (n 18).

20 Heede in its Report of 2014 stated that 90 producing entities are responsible for 63.4% of the global emissions 1854-2010, see: Richard Heede, ‘Carbon majors: Accounting for carbon and methane emissions 1854-2010’ (Methods & Results Report 2014) 25 <<https://climateaccountability.org/pdf/MRR%209.1%20Apr14R.pdf>> accessed 15 June 2020; See also: Paul Griffin, ‘CDP Carbon Majors Report 2017: 100 fossil fuel producers and nearly 1 trillion tonnes of greenhouse gas emissions’ (2017) <<https://b8f65cb373b1b7b15feb-c70d8ead6ced550b4d987d7c03fcdd1d.ssl.cf3.rackcdn.com/cms/reports/documents/000/002/327/original/Carbon-Majors-Report-2017.pdf>> accessed 15 June 2020.

21 Heede (n 20) 8-10.

22 Business & Human Rights Resource Center, ‘Turning up the heat: Corporate legal accountability for climate change: Corporate legal accountability annual briefing’ (2018) <www.business-humanrights.org/en/turning-up-the-heat-corporate-legal-accountability-for-climate-change> accessed 4 June 2020.

23 Heede (n 20) 29; Paul Griffin, ‘CDP carbon majors report 2017: 100 fossil fuel producers and nearly 1 trillion tonnes of greenhouse gas emissions’ (2017) 8 <<https://bit.ly/3Lcfs7g>> accessed 28 June 2022.

role in climate change mitigation in various aspects, starting with direct emissions, which are released from producing certain commodities. Other aspects are energy consumption, waste management and the lifetime of products (e.g., electronic devices), the transport of goods as well as labourers, and not least responsibility for emissions in the supply chain.²⁴

Moreover, from a consumer perspective, it is crucial that climate-friendly products are available (e.g., car industry). This leads to the responsibility of the private sector to place at disposal more climate-friendly goods.²⁵ Above all that, corporations are not only economic entities; nowadays, brands can even stand for and influence a whole lifestyle. Therefore, companies also have social power and moral responsibilities; those who do well in climate policies can even be role models for other companies or consumers (corporate citizenship).²⁶ These aspects of corporate responsibility will be taken up again in the analysis further below.

Certainly, this leads to the initial question of how the above-depicted responsibility can be litigated. In terms of climate change mitigation, lawsuits focus on carbon emissions, which can or should be accounted to a certain company.

In general, emissions are divided into three different categories, called Scope 1, Scope 2 and Scope 3 emissions.²⁷ Scope 1 emissions are defined as emissions that directly result from a company's activity (steam from the companies chimneys).²⁸ Scope 2 emissions are emissions that are caused by another company in order to provide the used energy or the required steam, heating or cooling devices.²⁹ Scope 3 emissions 'occur from sources owned or controlled by other entities in the value chain' (material suppliers, transport, waste management etc.).³⁰ Scope 3 emissions can be further divided into *upstream* and *downstream* emissions, *upstream emissions* being related to the sold goods and services and hence being passed on to the con-

-
- 24 Carbon Disclosure Project, 'Committing to climate action in the supply chain: CDP Report' (2015) <<https://bit.ly/3tKGVHh>> accessed 29 March 2022; Carbon Disclosure Project, 'Out of the starting blocks: Tracking progress on corporate climate action' (2016) 13-14 <www.cdp.net/en/reports/archive?page=17&per_page=5&sort_by=published_at&sort_dir=desc&utf8=%E2%9C%93> accessed 10 June 2020.
- 25 Expert Group on Climate Obligations of Enterprises, *Principles on climate obligations of enterprises – commentary* (Eleven International Publishing 2018) 30.
- 26 Angela Delfino, Mike Wallace and Paul Q. Watchmann, 'Corporate social responsibility and climate change' in Paul Q. Watchman (ed), *Climate change: A guide to carbon law and practice* (Globe Law & Business 2008) 177.
- 27 Greenhouse Gas Protocol, 'A corporate accounting and reporting standard' (2015) 25 <<https://ghgprotocol.org/sites/default/files/standards/ghg-protocol-revised.pdf>> accessed 10 June 2020.
- 28 Ibid 26.
- 29 Mary Sotos, 'GHG Protocol – Scope 2 Guidance: An amendment to the GHG Protocol Corporate Standard' (World Resources Institute 2015) 5 <<https://bit.ly/3DiJ00j>> accessed 29 March 2022.
- 30 Greenhouse Gas Protocol, 'Technical Guidance for Calculating Scope 3 Emissions' (2013) 8-9 <<https://bit.ly/3MLphut>> accessed 10 June 2020; Greenhouse Gas Protocol (n 27) 26.

sumer, whereas *downstream emissions* are emissions that occur in the supply chain, i.e., from purchased or acquired goods.³¹ This should be kept in mind when speaking about the responsibility of the private sector and, moreover, when thinking about how to push strategic private climate change litigation forward.

3 Non-US-litigation – facts and figures

When analysing private climate change litigation, it is helpful first to take a look at the facts and figures. At first glance, the selected 39 cases can be separated into different categories, from purely looking at the plaintiffs. Accordingly, 17 Cases have been raised by NGOs, 7 Cases were brought to the courts by individuals, 3 fall in the category *Corporation v Corporation* and 12 cases were initiated by governmental institutions or agencies.

Claimants	Total Number of Cases 39
NGO	17
Individual	7
Corporation	3
State	12

3.1 NGOs v Corporation – 17 Cases

17 out of 39 cases (almost 50%) were brought to various legislative bodies by NGOs between 2007 and 2020, 12 of them (about 75%) within the last two years (August 2018 to April 2020). Ten of these cases were filed against so-called *Carbon Majors*, either challenging their emission reduction targets, their climate policies, or simply trying to put hold on new mining projects or the building of new fossil power plants. Five of the NGO cases targeted banks or financial institutions, and two were raised against utility companies. Since the majority of these cases have been filed quite recently, most of them are still pending (12 cases).

One can further distinguish these cases into national and international suits. Ten of the NGO cases were filed under international regimes, eight of them being OECD claims and one a complaint referring to the UN Guiding Principles on Business and Human Rights, reported to the Philippine Commission on Human Rights.³² The most recent case, *Youth Verdict v Waratah Coal*, was filed in Australia in May 2020 under

31 Carbon Disclosure Project (n 24); Greenhouse Gas Protocol (n 30) 8-9.

32 *In re Greenpeace Southeast Asia and Others* (Pending) No CHR-NI-2016-0001, (2015) SCCC (Philippine Commission on Human Rights).

the Queensland Human Rights Act.³³ Six of the OECD reports and the Australian human rights case are still pending. The Philippine Commission on Human Rights in December 2019 held that carbon majors could indeed be held liable.³⁴ Also, two of the OECD complaints, *Netherlands NGO v ING Bank* and *Norwegian Climate Network v Statoil*, can be deemed successful, even though the latter one was formally rejected.³⁵ This will be assessed in more detail below.

Of the seven cases, which were launched under national law, two are French, three are set in Poland, one in Canada, and one in the Netherlands. Only the Polish case *Client Earth v Enea* issued in 2018 was successful out of these national cases.³⁶ The remaining cases are all pending.

As these NGO cases are filed by associations, some specific legal requirements must be met: The NGOs must have legal standing in order to claim common rights or social issues. The requirements for legal standing differ considerably between different legal orders. At least in the European Region, there is a minimum standard set by the Aarhus Convention for the legal standing of associations.³⁷ However, the application of the Aarhus Convention is, on the one hand, limited to environmental Organisations which are, on the other hand, trying to enforce environmental regulations.³⁸ Hence, in the context of climate change litigation, the Convention is helpful where environmental impact assessments/project permissions and other environmental standards are at stake; yet, in cases that refer to private law or in which a violation of human or fundamental rights due to climate change is invoked, NGOs may not have legal standing.³⁹ Not only in litigation against the private sector but generally in climate change litigation, the need for collective actions and the scope of the legal standing of associations is highly debated.⁴⁰

33 *Youth Verdict v Waratah Coal - Case Summary* (Pending) (2020) SCCC (Queensland Land Court).

34 *In re Greenpeace Southeast Asia and Others* (n 32).

35 *BankTrack et al. v ING Bank* (2019) (OECD NCP Netherlands), *Norwegian Climate Network et al. v Statoil* (2012) (OECD NCP Norway).

36 *Client Earth v Enea - Case Summary* (2019) IX GC 1118/18 SCCC (District Court Poznan).

37 Convention on access to information, public participation in decision-making and access to justice in environmental matters, UNECE, Aarhus 25 June 1998. For Australia see: Ross Abbs, Peter Cashman and Tim Stephens, 'Australia' in Richard Lord et al. (eds), *Climate change liability: Transnational law and practice* (CUP 2012) 102; For requirements in China, see: Alexander Stark, 'Umweltrechtsschutz in China' (2019) 17(2) EurUP 193, 199-203.

38 Teresa Fritz, 'VwGH bejaht Antragsrecht von Umweltorganisationen für Luftreinhaltemaßnahmen' (2018) *Recht der Umwelt* 211; Birgit Hollaus, 'Zur dezentralen Umsetzung der Aarhus-Konvention in Österreich' (2019) 17(2) EurUP 169, 171.

39 Erika Wagner, 'Die Notwendigkeit einer Verbandsklage im Klimaschutzrecht' (2019) 17(2) EurUP 185, 187, 188.

40 Alexander Schmidt, Karl Stracke and Bernhard Wegener, 'Die Umweltverbandsklage in der rechtspolitischen Debatte' (2017) <www.umweltbundesamt.de/publikationen> accessed 13 June 2020; Fritz (n 38), 214, 215; Wagner (n 39).

The French cases are both grounded on the newly released ‘*Loi de vigilance*’.⁴¹ The Polish cases all relate to the energy sector and the ever-increasing usage of coal, which still leads to building new coal-fired power plants.⁴² Poland alone makes up 50% of the coal energy produced within the EU,⁴³ while the Polish government is still resisting effective climate mitigation policies.⁴⁴ With regard to the obstacles in Poland’s climate policies, successful litigation can be a strong vehicle. This holds especially true for claims like *Client Earth v Enea* which was successful under the Polish Commercial Companies Code, proving that an investment in coal is less profitable than renewable energies.⁴⁵ If such litigation can successfully prove that renewable energies benefit the economy, it will be hard for politicians to resist change, or put otherwise, it will be a strong incentive for companies to change voluntarily. However, the downsides of this approach are strong, where climate change mitigation contradicts economic desires.

The Dutch case *Milieudefensie v Royal Dutch Shell* is special as it builds upon the litigation milestone of the *Urgenda Case*; it will be assessed in more detail below.⁴⁶ Finally, in *Greenpeace Canada v Kinder Morgan Canada Ltd.*, which was filed in Canada in 2017, the defendant, a utility company founded in 2017, was alleged of providing misleading information to potential investors in its Initial Public Offering.⁴⁷ The *Security Act of Alberta and Ontario* requires public companies to disclose the facts about their operations and business models. In assessing the prospected future oil demand, there had been no mentioning of decarbonisation at all.⁴⁸ While

41 *Notre Affaire à Tous and Others v Total – Case Summary* (Pending) (2019) SCCC (Nanterre District Court); *Notre Affaire à Tous*, ‘*Notre Affaire à Tous and Others v Total: Formal Notice to comply with the duty of Vigilance Law (19 July 2020)*’ (unofficial translation) <<http://climatecasechart.com/non-us-case/notre-affaire-a-tous-and-others-v-total/>> accessed 5 June 2020; Les Amis de la Terre France, ‘Manquements Graves à la loi sur le devoir de vigilance – Le cas Total en Ouganda’ (2019) <<http://climatecasechart.com/non-us-case/friends-of-the-earth-et-al-v-total/>> accessed 5 June 2020.

42 *Client Earth v Enea – Case Summary* (n 36); *Client Earth v Polska Grupa Energetyczna – Case Summary* (Pending) (2019) SCCC (Regional Court Lodz); *Greenpeace Poland v PGE GiEK – Case Summary* (Pending) (2020) SCCC (Regional Court Lodz).

43 Climate Action Tracker, ‘Country Summary – EU’ <<https://bit.ly/3Lse8gJ>> accessed 29 March 2020.

44 ‘EU Carbon neutrality: Leaders agree 2050 target without Poland’ *BBC News* (13 December 2019) <www.bbc.com/news/world-europe-50778001> accessed 5 June 2020.

45 *Client Earth v Enea – Case Summary* (n 36); Client Earth, ‘Briefing: Ostrołęka C: Energa’s and Enea’s Board Members’ fiduciary duties to the companies and shareholders’ (2018) <<http://climatecasechart.com/non-us-case/clientearth-v-enea/>> accessed 13 June 2020.

46 *Milieudefensie et al. v Royal Dutch Shell plc – Case Summary* (Pending) (2019) SCCC (The Hague District Court); *Milieudefensie*, ‘The summons of the climate case against Shell summarized in 4 pages’ (unofficial translation) <<http://climatecasechart.com/non-us-case/milieu-defensie-et-al-v-royal-dutch-shell-plc/>> accessed 1 June 2020.

47 *In re Amended and Restated Preliminary Prospectus of Kinder Morgan Canada Ltd’s Initial Public Offering – Case Summary* (Pending) (2017) GRICC.

48 Ibid.

the case is still pending, the issue has already been taken up by a shareholder motion, which instructed the parent company to set emission reduction targets.⁴⁹ Furthermore, *Kinder Morgan*, in the meantime, has started to report on climate-related business risks.⁵⁰ This instance particularly shows how the success of NGO claims embedded in an overall strategy and social discourse can go far beyond the legal success of claims.

NGO Cases

Legal Regimes	Total Number 17
Human Rights Law	2
OECD Claims	8
Loi de vigilance (France)	2
Environmental Law (Poland)	2
National Private Law (Netherlands / Canada / Poland)	3

3.2 Individuals v Corporations – Seven Cases

Seven cases were raised against corporations by individuals or groups of individuals. Groups of individuals in the present study are defined as associations of citizens, bound together by a common subjective interest (as opposed to the rather altruistic interest of NGOs), mostly representing a certain region or neighbourhood or marginalised group, such as indigenous people. Out of the seven cases brought to the courts by individuals, again, the majority (5/7) is targeting *Carbon Majors*. In contrast to the NGO cases, the individual cases are all tied to national laws. The legal grounds turn out to be diverse: out of these seven cases, one is claiming an injunction, one is a private nuisance, one is a public nuisance claim, and one refers to fundamental and human rights as well as environmental impact assessment legislation.⁵¹ These cases will be examined in more detail below.

49 The Energy Mix, ‘Alberta regulator probes Kinder Morgan’s failure to disclose climate risks’ (2018) <<https://bit.ly/3vVyjxe>> accessed 29 April 2022.

50 Greenpeace Canada, ‘Press release: Alberta Securities Commission reviewing Greenpeace complaint of inadequate disclosure of climate risks by Kinder Morgan’ (2018) <www.greenpeace.org/canada/en/press-release/285/press-release-alberta-securities-commission-reviewing-greenpeace-complaint-of-inadequate-disclosure-of-climate-risk-by-kinder-morgan/> accessed 1 June 2020.

51 *Gbemre v Shell Petroleum Development Company of Nigeria Ltd and Others* (2005) FHC/B/CS/53/05; *Lliuya v RWE* (2017) 2 O 285/15 (Higher Regional Court Hamm); *Citizens’ Committee on the Kobe Coal Fired Power Plant v Kobe Steel Ltd et al. – Case Summary* (Pending) (2018) SCCC (Kobe District Court); *Smith v Fronterra Co-Operative Group Ltd* (2020) NZHC 419.

Another two cases are related to shareholder rights and disclosure of climate risks under corporate law, targeting financial institutions. In *Abrahams v Commonwealth Bank of Australia* (2017), the plaintiff challenged the climate risk reporting of a bank.⁵² The case was filed as a shareholder claim and withdrawn after the bank had, in the following annual report, acknowledged climate risks.⁵³ In *Mc Veigh v Retail Employee Superannuation Trust* (Australia 2018), a pension trust allegedly violated the Australian Corporations Act of 2001 by not disclosing climate risks.⁵⁴ The court stressed that the case raises ‘a socially significant issue about the role of superannuation trust and trustees’ with regard to climate change.⁵⁵ Yet, the case is still pending, and a trial was scheduled for July 2020.⁵⁶

The *Case Mapuche Confederation v YPF* again is a criminal complaint, mainly focusing on the waste management of the concerned companies, which allegedly polluted and poisoned the environment with fracking waste.⁵⁷ In this case, climate change is mentioned with regard to fracking – but constitutes rather a side argument.⁵⁸ The argument made here, thus, is rather a strategic one, whereas, from a legal perspective, it does not tie climate change with the invoked statute.

Even though individuals filed these cases, the role of NGOs in this context should not be underestimated. The case *Lliuya v RWE*, for example, was supported by the German human rights organisation *German Watch*. Financial support and promotion of the cases to raise public awareness are essential in strategic litigation. Remarkably, five out of these seven cases were filed in the global north (Australia, New Zealand, Japan, Germany) and only two in the global south (Nigeria, Argentina). Regardless of the systemic differences of respective jurisdictions, these claims are confronted with some fundamental problems, which will be addressed in more detail below.

52 *Abrahams v Commonwealth Bank of Australia – Case Summary* (2017) VID879/2017 SCCC (Federal Court of Australia).

53 *Ibid.*

54 *Mc Veigh v Retail Employees Superannuation Trust – Case Summary* (Pending) FCA 14, (2019) GRICC.

55 *Ibid.*

56 *Ibid.*

57 *Mapuche Confederation of Neuquén v YPF et al. – Case Summary* (Pending) (2018) SCCC.

58 Mapuche Confederation, ‘*Mapuche Confederation of Neuquén v YPF et al. – Complaint*’ (2018) 5, 6 <<http://climatecasechart.com/non-us-case/mapuche-confederation-of-neuquen-v-ypf-et-al/>> accessed 5 June 2020.

Countries of Litigation	Total Number of Cases 39
Australia	10 + 1 OECD
New Zealand	1
Brazil	4
Canada	2
France	2
Germany	2 + 1 OECD
UK	2 + 3 OECD (1 in collaboration with Slovenia)
Poland	3
Netherlands	1 + 1 OECD
Japan	1 + 1 OECD
Philippines	1 (Human Rights Commission)
Nigeria	1
Argentina	1
Norway	1 OECD
Slovenia	1 OECD (in collaboration with UK)

3.3 Corporation v Corporation – Three Cases

Three cases were filed by corporations against corporations. All three of them are so-called routine cases (non-strategic) concerned with carbon trading systems. In *Deutsche Bank v Total Global Steel* in 2012, Deutsche Bank sued Total Global Steel for damages, alleging that the certified Carbon Emission Reductions (CER) Deutsche Bank had bought from Total Global Steel had already been surrendered and thus were of no more value.⁵⁹ The case *CF Partners (UK) LLP v Barclays Bank* was related to an acquisition of a company operating in the carbon market. Barclay Bank, which operated as a consultant, was sued for misusing confidential information.⁶⁰ Finally, the case *Chicago Climate Exchange v Bourse de Montreal* dealt with a trademark application.⁶¹

Two of these cases are related to climate change solely because they concern the carbon emission market, rather coincidentally. The legal questions raised are ordinary business law questions. Only the case *Deutsche Bank v Total Global Steel* is directly related to the mechanisms of carbon trading.

59 *Deutsche Bank v Global Steel* (2012) EWHC 1201 (Comm.) 1.

60 *CF Partners (UK) LLP v Barclays Bank PLC – Case Summary* (2014) EWHC 3049 SCCC.

61 *Chicago Climate Exchange v Bourse de Montreal* (2014) TMOB 78.

3.4 State v Corporation – Twelve Cases

The majority of cases in which states or state entities sued corporations have been filed in Australia and Brazil. Only one case is set in Germany under European Union Law.⁶² The success of these cases is outstanding: 75% have been successful. The cases filed by governments were related to consumer protection law (Australia) and environmental law, especially forest protection (Brazil). Four cases dealt with details of the respective emission-trading scheme.⁶³

Between 2008 and 2010, the Australian Competition and Consumer Commission (ACCC) filed six claims against corporations, four of them related to greenwashing and violations of the Trade Practice Act of 1974.⁶⁴ All of these cases were successful. The ACCC, under Australian law, is the federal agency for supervising trade practice law.⁶⁵ In 2010, the commission had stated that ‘greenwashing action’ will remain a priority.⁶⁶ However, due to the political change in 2013, parts of the former Australian climate legislation were repealed, which also had an effect on the ACCC’s activities on climate change.⁶⁷ No further cases have been filed ever since, and the priority on greenwashing has disappeared from the ACCC’s Agenda.⁶⁸

In Brazil, four private climate cases have been filed between 2007 and 2019. All these cases were related to environmental laws, three of them filed by a public prosecutor and the most recent one by the Federal Environmental Agency of Brazil (IBAMA). The development of these cases is a good example of how climate change litigation and the respective argumentation evolved over the last decade. While in the first case in 2007, climate change was only used as a side argument in the context of clearing a mangrove forest,⁶⁹ it is now the core argument in the pending case *IBAMA*

62 Case C-148/14 *Bundesrepublik Deutschland v Nordzucker AG* (2015).

63 *ACCC v Global Green Plan Ltd* (2010) FCA 1057; *ACCC v Prime Carbon Ltd* (2010) NR043/10. In *Bundesrepublik Deutschland v Nordzucker AG* (n 62), a German sugar producer was fined by the German authorities for not including emissions of steam generation, in its emission report under the European Emission Trading Scheme (EU Directive 2003/87/ED). In *Clean Energy Regulator v MT Solar Pty Ltd* (2013) FCA 205, the defendant was sued for fraudulent claim of clean energy certificates (CER), due to the fact, that the electrician who had installed solar panels was not licensed to do so.

64 *ACCC v V8 Supercars Australia Pty Ltd* (2008) MR 265/08; *ACCC v Goodyear Tyres* (2008) M181/08; *ACCC v De Longhi Australia Pty Ltd* (2008) MR 112/08; *ACCC v GM Holden Ltd* (2008) MR 008/08.

65 Abbs, Cashman and Stephens (n 37) 107.

66 Ibid.

67 Jacqueline Peel and Hari M. Osofsky, *Climate change litigation: Regulatory pathways to cleaner energy* (CUP 2017) 90-94.

68 ACCC, ‘2020 ACCC compliance and enforcement priorities’ (2020) <<https://bit.ly/3tKZ9Zg>> accessed 10 June 2020.

69 *Public Prosecutor’s Office v H Carlos Schneider S/A Comércio e Indústria & Others – Case Summary* (2007) Appeal No 650.728-SC, (2007) SCCC (Superior Court of Justice); Gabriel Wedy, ‘Climate legislation and litigation in Brazil’ (2017) 20 <<https://bit.ly/3iOWQ0I>> accessed 29 March 2022.

*v Siderugica Sao Luiz Ltd.*⁷⁰ The defendant is deemed responsible for direct and indirect emissions in the form of upstream emissions. IBAMA held a steel company responsible for using coal, which stems from illegal mining. By invoking the *National Climate Change policy of 2009*, IBAMA sued the defendant for the use of illegally mined coal, holding it accountable for the emissions stemming from the burning of coal, as well as the emissions caused by deforestation and the production of coal.⁷¹ This Brazilian climate lawsuit exemplifies some typical challenges of the global south. Legislation might be in place, but countries are still facing vast amounts of illegal activities, especially in mining and deforestation, and oftentimes lack the administrative power or political will to enforce the respective laws.⁷²

The remaining two cases, filed in Brazil in 2008 and 2014, notably do not relate to carbon majors. The case *Public Prosecutor's Office v Oliviera & Others* (Brazil, 2008) referred to the burning of sugar cane in low tech refineries, which, according to the court, should only be applied in exceptional cases – even though it might be cheaper than other techniques.⁷³ Unfortunately, in 2015 the Federal Supreme Court allowed the burning of sugarcane on the fields for harvesting, regardless of the excessive release of GHG emissions.⁷⁴ In *Sao Paulo Public Prosecutors Office v United Airlines and Others*, the prosecutor tried to hold International Airlines accountable for their GHG emissions and to oblige them to offset their emissions by regional reforestation.⁷⁵ The claim, however, was denied for lack of jurisdiction.⁷⁶

Unlike the first impression, such state claims can be strategic in their intention.⁷⁷ Moreover, the sheer number of success rates makes it worth considering how this can be used from a strategic litigation point of view (see below).

70 *Federal Environmental Agency (IBAMA) v Siderúrgica Sao Luiz Ltd and Martins – Case Summary* (Pending) 1010603-35.2019.4.01.3800, (2019) SCCC (15th Civil Federal Court).

71 Ibid.

72 Masha H Moghaddam and Ali Zare, 'Responsibilities of multinational corporations on environmental issues' (2017) 10(5) J Pol & L 78; Rajiv Khare and Apurva Verma, 'Green federalism and climate change: Challenges and options: An Indian perspective' (2019) 6 J Envtl L Pol'y & Dev 61, 75; Joana Setzer and Lisa Benjamin, 'Climate litigation in the Global South: Constraints and innovations' (2020) 9(1) TEL 77, 81-83.

73 *Public Procecutor's Office v Oliveira & Others – Case Summary* (2008) 2008/0215494-3 SCCC (Superior Court of Justice).

74 Wedy (n 69) 6-10.

75 *Sao Paulo Public Prosecutor's Office v United Airlines and Others – Case Summary* (2014) Civil Appeal N° 000292010.2014.4.03.9999 SCCC/ GRICC (Regional Federal Court).

76 Ibid.

77 Geetanjali Ganguly, Joana Setzer and Veerle Heyvaert, 'If at first you don't succeed: Suing corporations for climate change' (2018) OJLS 1, 21.

Status	Total number of Cases 31 (without OECD complaints)
Successful	14
Pending	12
Dismissed	3
Withdrawn/Agreement	2

Success rates

	Plaintiff	Legal Basis	Total Number
Successful Cases			14
	State		9
		Consumer Protection	6
		Emission Trading	1
		Environmental Law	2
	Corporation		2
		Corporate Law	1
		Emission Trading	1
	NGO		2
		Shareholder	1
		Human Rights	1
	Individual	Human Rights	1
Dismissed			3
	State		2
		Emission Trading	1
		Environmental Law	1
	NGO	Public Nuisance	1
Withdrawn	Individual	Shareholder	1
Agreement	Corporation	Emission Trading	1

3.5 Who are the defendants?

The defendants in the assessed 39 cases have, in the majority, been *Carbon Majors* and financial institutions (approx. 60%). 14 Cases (approx. 40%) were brought against Carbon Majors, among them BP, Total, and Royal Dutch Shell. Some of them have already been targeted by claims several times. In general, the pressure on these companies is increasing; accordingly, the defence strategies of these companies

are sometimes harsh.⁷⁸ In some countries, the public awareness raised inside and outside the courts even makes it increasingly difficult for them to continue with their business as usual.⁷⁹ Additionally, two claims were filed against non-producing utility companies.⁸⁰ Eight claims (approx. 20%) have been raised against financial institutions and banks, mostly relating to climate risk disclosure and ‘green financing’. In general, the financial aspects of climate change have been subject to increasing public awareness in the last years.⁸¹ This development has been flanked by divestment campaigns of the civil society, which promote removing capital from fossil fuel projects and investment funds.⁸² Similarly, it has led to increasing awareness of the role of financial institutions and investment funds and an increased call for ‘green investment’.

A comparatively small number of cases have been filed against what can be referred to as the *conventional* private sector, and nearly all of these claims were raised by the Australian Consumer Protection Agency. The assessed cases include only four claims against car companies (one of them a tyre producer)⁸³ and only one case was an attempted claim against international airlines,⁸⁴ even though the transport sector is responsible for about 24% of the global greenhouse gas emissions and thus is a crucial cornerstone for mitigating climate change.⁸⁵ Primarily, car producers have been reluctant to shift to electronic vehicles from the very beginning of the debate and still are.⁸⁶ In fact, some are even ‘planning to ramp up production of ultra-polluting SUVs’.⁸⁷ As a result, despite a lot of green marketing, in 2026, Detroit automakers

78 Business & Human Rights Resource Center (n 22) 16.

79 Mareike Rumpf, ‘Der Klimawandel als zunehmendes Haftungsrisiko für ‘Carbon Majors’ (2019) 17(2) EurUP 145, 157.

80 *Greenpeace Poland v PGE GiEK – Case Summary* (n 42); *In re Amended and Restated Preliminary Prospectus of Kinder Morgan Canada Ltd’s Initial Public Offering – Case Summary* (n 47).

81 UNFCCC, ‘Information on climate finance negotiations and events at COP25’ (2019) <<https://unfccc.int/topics/climate-finance/the-big-picture/climate-finance-in-the-negotiations/climate-finance/information-on-climate-finance-negotiations-and-events-at-cop-25>> accessed 10 June 2020; Javier Solana, ‘Climate Litigation in Financial Markets: A Typology’ (2020) 9(1) TEL 103, 103-105.

82 Jakob Wallace, ‘Oil price crash revives fossil fuel divestment campaigns’ *Foreign Policy* (15 May 2020) <<https://foreignpolicy.com/2020/05/15/oil-price-crash-revives-fossil-fuel-divestment-campaigns-climate-change-activism/>> accessed 10 June 2020.

83 *ACCC v V8 Supercars Australia Pty Ltd* (n 64); *ACCC v GM Holden Ltd* (n 64); *ACCC v Goodyear Tyres* (n 64); *Germanwatch v Volkswagen* (2007) (OECD NCP Germany).

84 *Sao Paulo Public Prosecutor’s Office v United Airlines and Others - Case Summary* (n 75).

85 IEA, ‘Tracking Transport 2019’ (2019) <www.iea.org/reports/tracking-transport-2019> accessed 10 June 2020.

86 Markus Seeberger, *Der Wandel der Automobilindustrie hin zur Elektromobilität: Veränderungen und neue Wertschöpfungspotenziale für Automobilhersteller* (Universität St. Gallen 2016) 41.

87 Reuters, ‘Detroit automakers’ big transition to electric cars? Don’t hold your breath: Trucks and SUVs are 82% of Ford and GM sales – by 2026, they’ll increase to 87%’ (26 March 2020) <<https://bit.ly/3tPydq8>> accessed 12 March 2022.

combined will produce fewer electric vehicles than Tesla alone did *last year*.⁸⁸ In Europe, the industry is trying to play the same game.⁸⁹ However, if companies are unwilling to provide climate-friendly products, consumers are also left with no choice, and a transition towards a carbon-neutral world is hampered.

Besides, the steel industry, the sugar industry and one Dairy Farm have been subject to climate change litigation.

Defendants	Total number 39
Carbon Majors	14
Financial Institutions	9
Steel	3
Utility Company	2
Automotive Industry	4
Airlines	1
Sugar Industry	2
Others	4

4 Taking a closer look – legal challenges and litigation strategies

The following section will analyse the cases concerning their relevant legal arguments and challenges; therefore, they will be categorised according to different legal regimes. Some cases will be described in more detail to give a vivid picture of how the legal arguments were framed. The major legal categories identified are national private law, supply chain liability laws, and cases invoking responsibility under international regimes.

Climate change litigation against the private sector differs significantly from litigation against governments and gives rise to some specific legal problems. Some obligations that have been successfully invoked against governments cannot simply be conveyed to the private sector.⁹⁰ This holds true for fundamental rights, human rights as well as international agreements like the Paris Agreement (PA). When suing

88 Ibid.

89 Glenn Hurowitz, 'The coronavirus climate profiteers: ...and the climate heroes doing the right thing in a time of crisis' *Mighty Earth* (14 April 2020) <<https://stories.mightyearth.org/the-coronavirus-climate-profiteers/index.html>> accessed 12 June 2020.

90 A number of public litigation cases seek to review public regulatory action with regard to international agreements or fundamental rights, see for example: *Urgenda Foundation v State of the Netherlands* (2019) ECLI:NL:HR:2019:2007 (Supreme Court of the Netherlands); *Juliana v United States* (Pending) 18-36082, (2015) (9th Circuit Court of Appeals). Other categories of public climate litigation regard the enforcement of existing legislation. Ganguly, Setzer and Heyvaert (n 77), 3; Setzer and Byrnes (n 9) 6-8.

governments, it may still be an impediment to frame climate change as a human rights violation or to invoke international agreements (like the PA); however, with regard to the private sector, a further hurdle has to be taken: proving that private actors are indeed legally bound.⁹¹ Even though the acceptance for multinational corporations being bound by such regimes to some extent is growing, the matter is still highly debatable.⁹² Yet, some legal challenges remain unchanged regardless of whether they appear in public or private litigation.

All in all, corporations have been sued for emission reduction under environmental law on the grounds of international agreements with regard to human rights or corporate conduct codes. Claims have alleged a threat to or violation of the right to life, health and the environment. Under civil law, corporations have been held responsible for personal damages, allegedly amounting to torts and public or private nuisance. And finally, corporations have been targeted under corporate law and with regard to shareholder rights for greenwashing and the failure to disclose financial climate risks. Some claims have also been related to emission trading systems and clean energy certificates.

In total, six claims have been filed concerning emission trading systems, but none of these cases can be assumed to have been filed for strategic purposes. Nonetheless, there might be ways on how to use ETS in a strategic manner by NGOs, for example, by uncovering false emission claims.⁹³ However, emission trading has always been a gateway to fraud, and especially the notion of carbon offsetting bears the risk of a new ‘carbon colonialism’.⁹⁴ Therefore, invoking carbon trading and market mechanisms in strategic climate change litigations might perpetuate the belief that the cli-

91 Philippe Cullet, ‘Human rights and climate change: Broadening the right to environment’ in Cinnamon P. Carlame, Kevin R. Gray and Richard G. Tarasofsky (eds), *The Oxford handbook of international climate change law* (OUP 2016) 504-506. See also UNEP, ‘Climate change and human rights’ (2015) <<https://bit.ly/3817vU1>> accessed 28 March 2022; Suryapratim Roy, ‘*Urgenda II* and its Discontents’ (2019) *Climate Change L Rev* 130.

92 Julia Bialek, ‘Evaluating the Zero Draft on a UN Treaty on Business and Human Rights: What does it regulate and how likely is its adoption by states?’ (2019) 9(3) *Goettingen J Intl L* 501; John G Ruggie, *Just business: Multinational corporations and human rights* (W. W. Norton & Company 2013); David Bilchitz and Surya Deva (eds), *Building a treaty on business and human rights* (CUP 2017); Markos Karavias, *Corporate obligations under international law* (OUP 2013).

93 Stephen Russell, ‘Estimating and reporting the comparative emissions impacts of products’ (2019) <www.wri.org/publication/estimating-and-reporting-comparative-emissions-impacts-products> accessed 10 June 2020.

94 Naomi Klein, *This changes everything: Capitalism vs. the climate* (Simon & Schuster 2014) 266-275; Simon Simanovski, ‘Could net-zero emissions prove to be a fatal blow for climate justice?’ *Völkerrechtsblog* (13 May 2020) <<https://voelkerrechtsblog.org/could-net-zero-emissions-prove-to-be-a-fatal-blow-for-climate-justice/>> accessed 10 June 2020; Michael Bauchmüller, ‘Warum es für ‘Klimaneutralität’ starke Regeln braucht’ *Süddeutsche Zeitung* (9 December 2019) <www.wri.org/publication/estimating-and-reporting-comparative-emissions-impacts-products> accessed 10 June 2020.

mate crisis can be resolved by simply applying market mechanisms.⁹⁵ Thus, from a strategic litigation perspective, it should be handled carefully.

Shareholder claims have been successful, particularly in Poland and Australia. In these cases, courts held that an investment in coal is less profitable than renewable energies and hence violated the shareholders' interests⁹⁶ and that banks have to include climate change risks in their annual report.⁹⁷

Environmental law does not play a major role in strategic climate change litigation against the private sector.⁹⁸ Since most environmental provisions are found in administrative law, the enforcement resides with the governmental agencies. An option for individuals to review the enforcement of environmental norms (and climate impacts) is to challenge permissions with regard to environmental impact assessment. In some regions, it is also possible for NGOs to claim a violation of environmental laws.⁹⁹ This kind of litigation thus usually targets governmental entities and does not show up in the category of private litigation.¹⁰⁰ As already mentioned above, this category is known as 'permission challenging'.¹⁰¹ However, countries that do have progressive environmental and climate laws could benefit from the opportunity of private individuals invoking them. This holds true especially for countries of the global south, where one of the major challenges lies in the enforcement of the existing norms.¹⁰²

95 'Study after study shows that carbon markets make things worse. Not only they do not address the problem, they create new ones', Corporate Accountability (n 2) 16. See also Corporate Europe Observatory, 'EU ETS myth busting: Why it can't be reformed and shouldn't be replicated' (2013) <<https://corporateeurope.org/en/climate-and-energy/2013/04/eu-ets-myth-busting-why-it-can-t-be-reformed-and-shouldn-t-be-replicated>> accessed 11 June 2020.

96 Client Earth (n 45).

97 *Abrahams v Commonwealth Bank of Australia – Case Summary* (n 52).

98 Six of the here assessed cases are related to environmental law, four of them filed by a state agency (Brazil). Under Polish Law (Article 323 Environmental Protection Law) environmental associations or governmental agencies can file a claim to demand protection from illegal impact on the environment and seek cessation of the activity, see: *Client Earth v Polska Grupa Energetyczna – Case Summary* (n 42); *Greenpeace Poland v PGE GiEK - Case Summary* (n 42); Christian von Bar, 'Chapter 3: Accountability' in Christian von Bar et al. (eds), *Non-contractual liability arising out of damage caused to another: (PEL Liab. Dam.)* (Principles of European law v. 7, OUP 2009) 727.

99 See above, section 3.1.

100 Some Exceptions have been mentioned above, see for example: *Royal Forest and Bird v Buller Coal Ltd* (n 15).

101 See above, section 2.

102 *Goa Foundation v M/S Sea Sterlite & Others* (2018) 4 SCC 218; Nikita Pattajoshi, 'Ridhima Pandey v Union of India: The onset of climate change litigation in India' (2019) 6 J Envtl L Pol'y & Dev 83, 95; Apurva Verma, 'Green federalism and climate change: Challenges & options – an Indian perspective' (2019) 6 J Envtl L Pol'y & Dev 61, 68-70.

Legal Regime	Plaintiffs	Total: 39
Private Law	Individual, NGO	4
Corporate Law (incl. Shareholder and Disclosure)	Individual, Corporation, NGO	5
Criminal Law	Individual	1
Consumer Protection	State	5
Loi de vigilance	NGO	2
Emission Trading	State, Corporation	5
Environmental Law	State, NGO	6
OECD Complaints	NGO	8
Human Rights	NGO, Individual	3

4.1 Corporate accountability under private law

A comparatively small number of cases have been filed under national private law, only 4 out of 39. It is a characteristic of private law that most claims require linking a certain behaviour of one individual to a violation of a particular right of another individual. Moreover, in many instances, it is not sufficient to prove an infringement of a legal position; instead, fault of the tortfeasor is required.¹⁰³ These key principles likewise constitute the main challenges of climate change in private law claims: causation and unlawfulness.¹⁰⁴ This holds true for the basic concepts of liability in many countries, although the various national legal systems do certainly differ to some extent.¹⁰⁵ The legal figures of nuisance and injunction are nearly the same in many common law countries, and even civil law systems often contain similar provisions.¹⁰⁶ This is even more true regarding recent and pending climate change litigation since the vast majority of cases are filed in the global north.

103 Bar, ‘Chapter 3: Accountability’ (n 98) 557-563; Jutta Brunnée et al., ‘Overview of legal issues relevant to climate change’ in Richard Lord et al. (eds), *Climate change liability: Transnational law and practice* (CUP 2012) 34.

104 Michael Burger, Jessica Wentz and Radley Horton, ‘The law and science of climate change attribution’ (2020) 45(1) *Columbia JEL* 57, 192-217.

105 See in Detail Lord et al. (eds) (n 6).

106 Jaap Spier, ‘Legal strategies to come to grips with climate change’ in Oliver C Ruppel, Christian Roschmann and Katharina Ruppel-Schlichting (eds), *Climate change: International law and global governance. Volume I: Legal responses and global responsibility* (Nomos 2013) 135.

With regard to causation, there has been significant success in the case *Lliuya v RWE* (Germany 2015); however, the case *Smith v Fronterra*, which was filed in New Zealand in 2020, was dismissed on the grounds of causation.¹⁰⁷

The case *Lliuya v RWE* may well be the first case in which the plaintiff might legally prove a causal link between the act of a carbon major and specific damage.¹⁰⁸ In this case, a Peruvian farmer alleges that the German carbon major RWE contributed to the melting of the Palcacocha glacier in the Andes, which poses a threat to the property of the claimant.¹⁰⁹ The claimant, a farmer who lives below a glacial lake of the Palcacocha, seeks reconstruction of the dam, which protects the glacial lake, and reimbursement for construction work he had to carry out to protect his home from flooding.¹¹⁰ Reference is made to the historical GHG emissions of RWE which, according to the carbon majors study of *Heede*, amount to 0.47% of the total global emissions.¹¹¹

The German Civil Code provides a norm that can be described as private nuisance. Section 1004 of the German Civil Code states that

[i]f the ownership is interfered with by means other than removal or retention of possession, the owner may require the disturber to remove the interference. If further interferences are to be feared, the owner may seek a prohibitory injunction.¹¹²

In contrast to nuisance claims in other legal systems, this norm, if applicable, does not require negligence or fault.¹¹³ *A fortiori*, causation gains centre stage.

On the one hand, the general challenge of causation in climate change litigation lies with science, and on the other hand, roots in legal aspects. While science commonly refers to probabilities, this is not considered to be sufficient to prove legal causation.¹¹⁴ The existence of climate change and its causation by human greenhouse gas emissions is fairly undisputed, some interdependencies and tipping points are more difficult to prove.¹¹⁵ Thus, with regard to causation, two types of climate change impacts have to be distinguished: slow onset effects and extreme weather

107 *Smith v Fronterra Co-Operative Group Ltd* (n 51); *Lliuya v RWE* (n 51).

108 Myana Dellinger, 'See you in court: Around the world in eight climate change lawsuits' (2018) 42 *Wm & Mary Envtl L & Pol'y Rev* 525, 531; Rumpf (n 79) 156.

109 Günther Rechtsanwälte, '*Lliuya v RWE: Plaintiff – Claim*' (23 Nov 2015) <<https://germanwatch.org/de/14198>> accessed 2 June 2020; *Lliuya v RWE* (2016) 2 O 285/15 3, 8 (District Court Essen).

110 Günther Rechtsanwälte (n 109) 2; Günther Rechtsanwälte, '*Lliuya v RWE: Grounds of appeal*' (23 Feb 2017) 2 <<https://germanwatch.org/de/14198>> accessed 2 June 2020.

111 Günther Rechtsanwälte (n 109) 19.

112 German Civil Code, Sec. 1004 para 1.

113 See German Federal Court of Justice, BGH NJW 1996, 845, 846.

114 Jacqueline Peel, 'Issues in climate change litigation' (2011) *CCLR* 15, 19; Rumpf (n 79) 156; Burger, Wentz and Horton (n 104) 201.

115 IPCC, *Global warming of 1,5°C: Summary for policymakers* (Cambridge University Press 2018) 5-6 <www.ipcc.ch/sr15/> accessed 2 June 2020.

events.¹¹⁶ While for slow onset effects, like rising of the sea level and increase of the average temperatures, a causal link with climate change can be established, this is more complicated with regard to extreme weather events.¹¹⁷ Extreme weather events like floods, droughts and heavy rains are evidentially linked to climate change in so far as they are getting heavier and occur more frequently.¹¹⁸ From a legal perspective, this is problematic as it is difficult to link a particular extreme weather event to climate change.¹¹⁹ For slow onset events, an additional hurdle lies in linking a specific damage 'solely' to climate change.¹²⁰

Thus, regarding causation in *Lliuya v RWE*, the plaintiff has to demonstrate that RWE did cause 0.47% of the total global GHG emissions, which contributed to climate change that caused the melting of the Palcacocha Glacier in the Andes. Further, the plaintiff must show that the melting of the glacier constitutes an imminent threat to his property, which is situated below the glacier lake.¹²¹ The defendants held that due to the number of contributors to climate change, they could not be held liable and that it was not possible to prove whether the GHG emissions of RWE or someone else's emissions or other effects had caused the melting of the respective glacier.¹²² The plaintiffs, in response, claimed that greenhouse gas emissions are distributed evenly in the atmosphere and thus do contribute to climate change in general.¹²³ After the case had been dismissed in the first instance, the court of appeal issued an order for taking evidence. Therein, it stressed that from a legal perspective, the argumentation of the plaintiff is convincing and that, in general, corporations can be held liable for their greenhouse gas emissions.¹²⁴

Apart from causation, the plaintiff had to take several legal hurdles before this order was issued. The respective section in the German Civil Code constitutes a provision of neighbour law.¹²⁵ Thus, the court had to be convinced that the Peruvian farmer who lives in Peru is a neighbour to the German corporation *RWE*. Ultimately,

116 Myles Allen et al., 'Scientific challenges in the attribution of harm to human influence on climate' (2007) 155(6) U Pa L Rev 1353, 1384-1385.

117 Burger, Wentz and Horton (n 104) 78-112.

118 Allen et al. (n 116) 1385-1387.

119 Tobias Pfrommer et al., 'Establishing causation in climate litigation: Admissibility and reliability' (2019) 152(1) Climatic Change 67, 67.

120 Rumpf (n 79) 156; Moritz Keller and Sunny Kapoor, 'Climate change litigation: Zivilrechtliche Haftung für Treibhausgasemissionen' (2019) Business Berater 706, 709.

121 Günther Rechtsanwälte (n 109) 26, 28, 31.

122 Germanwatch, '*Lliuya v RWE*: Statement of Defence – Summary' (28 April 2016) <<https://germanwatch.org/de/14198>> accessed 5 June 2020; Germanwatch, '*Lliuya v RWE*: Defendant: Written Submission – Summary' (15 Nov 2016) 3 <<https://germanwatch.org/de/14198>> accessed 5 June 2020.

123 Günther Rechtsanwälte, '*Lliuya v RWE*: Plaintiff: Written Submission' (28 Nov 2016) 4 <<https://germanwatch.org/de/14198>> accessed 6 June 2020.

124 *Lliuya v RWE* – Claim (n 109); *Lliuya v RWE* (n 51).

125 Klimke, 'German Civil Code sec. 906', *Beck'scher Grosskommentar* (C.H. Beck 2020) paras 270-273.

this could be established in light of the fact that a neighbour under ‘pollution control law’ is anyone who is affected by the emission.¹²⁶ Secondly, the question arose whether the provision allows for liability even though the GHG emissions were lawful.¹²⁷ The latter question was unproblematic as the relevant norm does not generally require fault; in its subsections, it provides for certain exceptions, which the court of appeal clarified, do not apply in this case.¹²⁸

On the one hand, the fact that the German court decided to take evidence and endorsed the legal argumentation of the plaintiff certainly constitutes a major success in strategic litigation. With the trend in climate change litigation to refer to precedencies from other jurisdictions, the case may have an impact on further litigation throughout various legal systems and with regard to various legal claims.¹²⁹ However, the subsequent case of *Smith v Fronterra Co-operative*, which was filed in New Zealand in 2020, was dismissed on the grounds of a missing causal link and fault.¹³⁰ The plaintiffs were suing several major greenhouse gas emitters (an oil refinery, a power station as well as a dairy farm).¹³¹ *Smith*, the representative and spokesman of the *Iwi Chairs Forum* (a Maori Tribe in New Zealand), claimed the territory in question to have a cultural, historical, and spiritual value to him.¹³² He alleged that the defendants carried out a public nuisance and negligence by contributing to climate change. Subsequently, he claimed that the ‘defendants owe him a duty, cognisable at law, to cease contributing to [climate change].’¹³³ The court, however, found that no direct link could be established between the damage and the defendants’ action, especially with regard to indirect emissions. It further held that the damage claimed is not particular to the plaintiffs.¹³⁴ Regarding causation, the court stated that the damage was caused by a ‘chain of consequential and indirect steps’ and that it would, moreover, ‘not be prevented if the relief sought by the plaintiffs would be obtained’.¹³⁵ Additionally, it stressed that a public nuisance requires an ‘underlying unlawful act’ and that the defendants could not be accused of fault behaviour since they were complying with the law (legal emissions).¹³⁶ Concerning negligence, the court found that no duty of care in terms of a general duty to reduce emissions could be established since the parliament had dealt with the matter comprehensively in the

126 Will Frank, ‘Klimahaftung und Kausalität’ (2013) ZUR 28, 31; Hans Jarass (ed), *Federal Emission Control Act – Commentary* (C.H. Beck 2017) sec 3 para 38; Rumpf (n 79) 150.

127 Germanwatch (n 122) 10.

128 *Lliuya v RWE* (n 51).

129 Rumpf (n 79) 158.

130 *Smith v Fronterra Co-Operative Group Ltd* (n 51) 63-71.

131 *Ibid* 1-10.

132 *Ibid* 10.

133 *Ibid* 10, 13, 15.

134 *Ibid* 62-63.

135 *Ibid* 63.

136 *Ibid* 69.

Climate Change Response Act of 2002.¹³⁷ Accordingly, the case of *Smith v Fronterra* once more reveals the typical challenges of climate change responsibility and thus amounts to a textbook example of private climate change litigation. The general problem with fault is the fact that the emission of greenhouse gases is mostly in line with the law.¹³⁸ Thus, some legal figures are precluded due to this fact itself.

This is also revealed in the pending Japanese case *Citizens Committee v Kobe Steel Ltd.* (Japan 2018). In this case, the plaintiffs seek an injunction under Japanese Law, against the construction of a new coal-fired power plant by Japans ‘leading steelmaker’.¹³⁹ The power plant would amount to 0.6% of the state’s carbon emissions.¹⁴⁰ The plaintiffs invoked a violation of the right to a clean and healthy environment and the right to a stable climate, and claimed that the construction was in conflict with the Japanese climate targets.¹⁴¹ In the Japanese legal system, injunctive relief is not regulated in the civil code but is recognised by the jurisprudence and derived from general tort law.¹⁴² The Japanese Civil Code, enacted in 1896, contains a general provision on tort liability: ‘A Person who *intentionally or negligently* violates the rights of others shall be liable for the loss *caused* by the act’, Article 709 Civil Law.¹⁴³ Thus, liability under tort primarily requires an *unlawful act*. However, unlawfulness in this regard is not merely determined by the legality of GHG emissions. Instead, what constitutes an unlawful act is not merely to be derived from statutes but is determined by a *balance of interest test*.¹⁴⁴ ‘Where there is a high probability of damage to human health (...) an injunctive relief should be provided.’¹⁴⁵

Additionally, the fact that climate change is caused by an unlimited number of contributors, under Japanese law, raises the question of whether the injunction sought can lead to the required outcome.¹⁴⁶ The same problem of multiplicity of polluters was addressed by the court in *Smith v Fronterra* and was debated in *Lliuya v RWE* in the context of cumulative causation.¹⁴⁷ What can be seen from the analyses of these

137 Ibid 98.

138 Rumpf (n 79) 148.

139 *Citizens’ Committee on the Kobe Coal Fired Power Plant v Kobe Steel ltd et al. – Case Summary* (n 51); Kobe Steel Ltd, ‘Corporate Profile’ <<https://bit.ly/3JQ0jlu>> accessed 29 March 2022.

140 Ibid.

141 Ibid. The Japanese Constitution does not make explicit reference to such rights, see: Yukari Takamura, ‘Japan’ in Richard Lord et al. (eds), *Climate change liability: Transnational law and practice* (CUP 2012) 234.

142 Takamura (n 141) 228.

143 Ibid.

144 Ibid 232. Accordingly, an act is unlawful if the violation of the rights is intolerable.

145 Ibid.

146 Ibid.

147 In *Lliuya v RWE* the defendants stated that their emissions were insignificant: Germanwatch, ‘*Lliuya v RWE*: Response to the appeal – Summary’ (10 July 2017) 5 <<https://german>

three cases, is that the challenges they face are similar throughout legal systems. Even though a number of books and articles have been published assessing the prospects of such claims, the practical impact (at least from a legal perspective) is small, and changes do come only very slowly.¹⁴⁸

Notwithstanding, legal progress has been made regarding the proof of fault and negligence.¹⁴⁹ With more studies focusing on carbon majors, it has become easier to show that there has been awareness of the problem for many years.¹⁵⁰ These cognitions contribute significantly to the proof of wilful behaviour and negligence. In general, it seems to become easier for claimants ‘to assert with greater confidence, that corporate actors are responsible for a sizeable and knowable percentage of the choices and behaviors that result in climate change’.¹⁵¹

An outstanding case against the private sector has been filed in the Netherlands under general torts. The case *Milieudefensie v Royal Dutch Shell* constitutes a follow-up on the *Urgenda Decision*.¹⁵² In the *Urgenda* decision of 2019, the Supreme Court held that the Government of the Netherlands is violating a duty of care with regard to human rights due to its inadequate action on climate change.¹⁵³ Remarkably, in the present case this argumentation is conveyed to the private sector: the plaintiffs claim that disregarding the internationally agreed climate targets amounts to a violation of the duty of care and thus constitutes negligence under national tort law.¹⁵⁴

The duty of care is derived from the Dutch Civil Code Article 6:162 – a general provision on tort – in connection with Articles 2 and 8 of the European Convention on Human Rights (right to life and right to private life, family and home). A tort under the Dutch Civil Code legally requires a violation of a right as well as fault.¹⁵⁵ The claimants refer to documents proving that Shell was aware of the danger of climate change since the 1950s.¹⁵⁶ Hence, due to this knowledge, the company’s misleading statements and the inadequate action amount to an ‘unlawful endangerment’

watch.org/de/14198> accessed 3 June 2020; See also: *Lliuya v RWE* (n 109) 41; *Smith v Fronterra Co-Operative Group Ltd* (n 51) 63.

148 See also Burger, Wentz and Horton (n 104) 193-196.

149 *Milieudefensie et al. v Royal Dutch Shell plc – Case Summary* (n 46).

150 Heede (n 20); Carroll Muffett and Steven Feit, ‘Smoke and fumes: The legal and evidentiary basis for holding big oil accountable for the climate crisis’ (2017) <www.ciel.org/wp-content/uploads/2017/11/Smoke-Fumes-FINAL.pdf> accessed 6 June 2020

151 Ganguly, Setzer and Heyvaert (n 77) 25.

152 *Milieudefensie*, ‘Summons: Unofficial translation of the Dutch original’ (2019) 663 <http://blogs2.law.columbia.edu/climate-change-litigation/wp-content/uploads/sites/16/non-us-case-documents/2019/20190405_8918_summons.pdf> accessed 15 June 2020.

153 *Urgenda Foundation v State of the Netherlands* (n 90).

154 *Milieudefensie* (n 152) 570-618; *Milieudefensie* (n 46) 2.

155 Christian von Bar, ‘Chapter 1: Fundamental provisions’ in Christian von Bar et al. (eds), *Non-contractual liability arising out of damage caused to another: (PEL Liab. Dam.)* (Principles of European law 7, OUP 2009) 231; Bar, ‘Chapter 3: Accountability’ (n 98) 559.

156 *Milieudefensie et al. v Royal Dutch Shell plc – Case Summary* (n 46) 553.

of Dutch citizens.¹⁵⁷ However, the core legal question, which was acknowledged in the *Urgenda II* decision with regard to the government, is whether the required duty of ‘due care’ can be defined by international law.¹⁵⁸ The plaintiffs claim that, according to climate science, Shell would have to reduce its emissions by 45% by 2030 and come to net-zero by 2050 in line with the Paris Agreement to prevent the alleged harm.¹⁵⁹ To prove that a different pathway is possible, they referred to the Danish energy company Ørsted, which completely shifted its business to renewable energies and, according to its own statement, nowadays is the ‘fastest growing and most profitable energy supplier’.¹⁶⁰ If successful, *Urgenda II* would be the first case in which a company would be held liable under national law for disregarding the Paris Agreements climate goals.

4.2 Enhancing responsibility of multinationals with supply chain liability laws – *La Loi de Vigilance*

After a long time of political debate, in 2017, the French National Assembly adopted the ‘*Loi de Vigilance*’.¹⁶¹ Since it entered into force, two climate claims have been filed against the French carbon major *TOTAL*. Both cases are still pending.

The *Loi de vigilance* requires corporations to assess their environmental and human rights risks along the supply chain and to publish a yearly *Plan de vigilance*.¹⁶² It is incorporated in the French *Code de Commerce*.¹⁶³ According to relevant provisions, the first *Plans de Vigilance* had to be published and subject to review by the end of 2018. However, most of the ‘follow up plans’ reviewing the initial risk assessment were published throughout the year 2019.¹⁶⁴

In *Notre Affaire à Tous and Other v Total*, which was filed in 2020, the plaintiffs claimed that *TOTAL* does not assess its climate change risks properly since its first *Plan de Vigilance* did not consider the consequences of lifecycle emissions of the products of *TOTAL* (scope 3) at all.¹⁶⁵ *TOTAL* – still unfazed – is further exploring

157 *Mlieudefensie* (n 152) 634-639.

158 Gerrit Betlem and Andre Nollkaemper, ‘Giving effect to public international law and European Community law before domestic courts: A comparative analysis of the practice of consistent interpretation’ (2003) 14(3) *EJIL* 569, 581,582; Roy (n 91) 132,133.

159 *Mlieudefensie* (n 152) 733-756, referring to UNEP ‘Emission Gap Report’, Worldbank report ‘Turn down the heat’ and IPCC report SR15.

160 *Ibid* 823-826.

161 Law No 2017-399 of 27 March 2017; Sherpa, ‘Vigilance plans reference guide’ 9 <www.asso-sherpa.org/wp-content/uploads/2019/02/Sherpa_VPRG_EN_WEB-VF-compressed.pdf> accessed 11 June 2020.

162 *Ibid*.

163 French *Code de Commerce*, Article L 225-102-1.

164 Sherpa (n 161) 10.

165 *Notre Affaire à Tous* (n 41) 2.

oil and gas reserves and runs biofuel refineries largely dependent on palm oil which contribute to deforestation.¹⁶⁶ In invoking the Paris Agreement, the plaintiffs held that complying with the 2°C threshold is the only way of preventing harm to the environment, human health and safety as well as human rights.¹⁶⁷ With this argumentation, the claimants established the legally binding nature of the Paris Agreement for corporations via the requirement of vigilance. This argumentation has a clear parallel with the above-assessed case *Milieudefensie v Royal Dutch Shell* and might well be transferred to other cases in which the notion of ‘due diligence’ is at stake.

The *Loi de Vigilance* furthermore imposes on corporations a duty of diligence with regard to their supply chain. As such, it aims at lifting the *corporate veil* and filling the loopholes in corporate legal responsibilities, which originate (in parts) from the notion of separate legal personalities of multinational corporations.¹⁶⁸ In line with this, the case *Friends of the Earth v TOTAL* (France 2020) refers to the activities of a subsidiary of TOTAL in Uganda.¹⁶⁹ According to the *Loi de Vigilance* a legal responsibility evolves from the controlling of either a subsidiary or a supplying company.¹⁷⁰ This is an important step because responsibility otherwise is often avoided simply by undercapitalisation of the subsidiary.¹⁷¹ *TOTAL Uganda* is involved in a pipeline and oil project, known as the ‘*Tilenga Project*’.¹⁷² The project aims at building the ‘East African Oil Pipeline’ for the transport of oil from the Lake Albert through Uganda and Tanzania. Amounting to 1.445 km, this will be the longest oil pipeline in the world.¹⁷³ The project further aims at the exploitation of six oil fields with more than 400 drill holes and a daily production of 200.000 barrels.¹⁷⁴ The plaintiffs accused TOTAL of not sufficiently observing the risks of the project in terms of human rights and the environment as well as climate change.¹⁷⁵

166 Notre Affaire à Tous, ‘Total: The climate chaos strategy: Synthesis in English of the French report’ (2019) <<https://bit.ly/3qLBB4t>> accessed 29 March 2022.

167 Notre Affaire à Tous (n 41) 2; Notre Affaire à Tous, ‘*Notre Affaire à Tous and Others v Total: Complaint* (28 Jan 2020)’ 36-42 <<http://climatecasechart.com/non-us-case/notre-affaire-a-tous-and-others-v-total/>> accessed 5 June 2020.

168 See for Details: Robert Grabosch, ‘Unternehmen und Menschenrechte: Gesetzliche Verpflichtungen zur Sorgfalt im weltweiten Vergleich’ (2019) 35 <www.fes.de/themenportal-die-weltgerecht-gestalten/weltwirtschaft-und-unternehmensverantwortung/wirtschaft-und-menschenrechte> accessed 15 June 2020.

169 Les Amis de la Terre France (n 41).

170 Stéphan Brabant and Elisa Savourey, ‘Law on the corporate duty of vigilance’ (2017) 6 <www.bhrinlaw.org/frenchcorporatedutyoflaw_articles.pdf> accessed 14 June 2020.

171 Carola Glinski, ‘Haftung multinationaler Unternehmen für Umweltschäden bei Auslandsdirektinvestitionen’ in Gerd Winter (ed), *Die Umweltverantwortung multinationaler Unternehmen* (Nomos 2005) 238.

172 Les Amis de la Terre France (n 41) 6.

173 Ibid.

174 Ibid.

175 Ibid 32-38.

TOTAL in its published surveillance plan only vaguely mentions this project. In its Environmental and Social Impact Assessment, the company states that the effects of the GHG emissions of the project are insignificant, referring only to the machines used for extracting but excluding lifecycle emissions of the produced oil. Moreover, the practice of gas flaring – which is already approved to be harmful to the environment as well human rights – is envisaged to be practised routinely.¹⁷⁶ Once again, the plaintiffs refer to the Paris Agreement and relate to the fact that 80% of the explored fossil fuel resources have to stay in the ground to keep track of the 2°C threshold. Consequently, defiance of these facts amounts to a violation of vigilance.¹⁷⁷ According to *Friends of the Earth*, the *Plan de Vigilance* is, as a result, obviously insufficient, and a proper risk assessment should even lead to questioning the project as such.¹⁷⁸

It is difficult to predict what is to be expected from these cases as they constitute the spearhead of Vigilance Litigation. Many issues of the *Loi de Vigilance* are left open to interpretation of jurisprudence.¹⁷⁹ Anyhow, they are capable of setting precedence on the duty of due diligence with regard to climate change. Moreover, the *Loi de Vigilance* is part of a broader international initiative. Similar laws have been enacted in some countries and are still debated in a number of other countries.¹⁸⁰ Consequently, this type of litigation is capable of spreading internationally. Although the legal outcome is still open, shareholders have already taken up the issue. In April 2020, a group of shareholders, amounting to about 1% of TOTAL's capital, announced in the general assembly meeting that TOTAL's climate change strategy is insufficient and that indirect emissions (which amount to 85%) need to be considered.¹⁸¹ According to Greenpeace, this shareholder action might well lead to a drastic change in the company's policy.¹⁸² A strategic success that has already been seen similarly in the *Kinder Morgan Case* in Canada.

176 *Gbemre v Shell Petroleum Development Company of Nigeria Ltd and Others* (n 51); *Les Amis de la Terre France* (n 41) 36.

177 *Les Amis de la Terre France* (n 41) 37.

178 *Ibid.*

179 Grabosch (n 168) 30.

180 Olga Martín-Ortega and Johanna Hoekstra, 'Reporting as a means to protect and promote human rights?: The EU Non-Financial Reporting Directive' (2019) 44(5) *EnvLRev* 622, 628-631; Grabosch (n 168).

181 Reuters, 'Investors plan to push Total to do more on climate change' (15 April 2020) <www.reuters.com/article/us-climatechange-total-investors/investors-plan-to-push-total-to-do-more-on-climate-change-idUSKCN21X1EH> accessed 10 June 2020.

182 *Ibid.*

4.3 Corporate accountability under international law

The discourse on international human rights obligations of multinational corporations has been driven ahead continuously in the last decade.¹⁸³ It is fairly undisputed that corporations do have an international obligation to ‘respect’ human rights.¹⁸⁴ Further, soft law obligations derive from the OECD Guidelines for Multinational Enterprises and the UN Guiding Principles on Business and Human Rights.¹⁸⁵ 11 out of 39 cases raise claims against corporations under international regimes. Three of the cases invoke human rights obligations, and another eight complaints have been made under the OECD complaint mechanism. This amounts to almost one third of the cases and strongly indicates how much weight international regulations have gained regarding corporate responsibilities.

4.3.1 Corporate responsibility, human rights and climate change

The scope and consequences of international human rights obligations for corporations are still highly debatable.¹⁸⁶ However, national laws can, of course, directly impose human rights obligations on corporations. This was stressed in the case *Gbemre v Shell Petroleum Nigeria Ltd.* as well as in the final statement of the Philippine Human Rights Commission.

In *Gbemre v Shell Petroleum Ltd. Nigeria*,¹⁸⁷ the plaintiffs sought to stop the practice of gas flaring in the Niger Delta, alleging a violation of their right to life, health and a satisfactory environment, as guaranteed under the African Charter on Human and Peoples’ Rights.¹⁸⁸ In line with other first-generation climate claims, the impact of gas flaring on climate change was only one argument among others. Nonetheless, the judgement was ground-breaking for several reasons. Astonishingly, it clearly

183 César Rodríguez-Garavito, ‘Business and human rights: Beyond the end of the beginning’ in César A Rodríguez Garavito (ed), *Business and human rights: Beyond the end of the beginning* (Globalization and human rights, CUP 2017).

184 Ruggie, *Just business* (n 92); Ken McPhail and Carol A. Adams, ‘Corporate respect for human rights: Meaning, scope and the shifting order of discourse’ (2016) 29(4) *Accounting, Auditing & Accountability Journal* 650; John G Ruggie, ‘Incorporating human rights: Lessons learned, and next steps’ in Justine Nolan and Dorothea Baumann-Puly (eds), *Business and human rights: From principles to practice* (Routledge 2016).

185 OECD Guidelines for Multinational Enterprises 2011 (OECD); UN Guiding Principles on Business and Human Rights HR PUB 11/04.

186 Birgit Spiesshofer, *Responsible enterprise* (C.H. Beck 2018) 99-124.

187 *Gbemre v Shell Petroleum Development Company of Nigeria Ltd and Others* (n 51).

188 Amy Sinden, ‘An emerging human right to security from climate change: The case against gas flaring in Nigeria’ in Hari M. Osofsky and William C G Burns (eds), *Adjudicating climate change: State, national, and international approaches* (CUP 2009) 179.

states a violation of human rights by *Shell* due to the practice of gas flaring.¹⁸⁹ Moreover, it was one of the first judgments in which the right to life (and dignity) was interpreted to inhere a right to a clean and healthy environment in the context of climate change.¹⁹⁰

Although several international bodies have acknowledged that states do have a duty to prevent human rights violations following climate change, individual complaints give rise to further legal questions.¹⁹¹ An individual invoking a human rights violation has to prove that certain conduct has already affected a human right or poses an imminent threat to its enjoyment.¹⁹² Consequently, in the context of fundamental or human rights and climate change, it has to be shown that an imminent threat has already occurred. Additionally, the problem of causation arises similar to private law claims. *Gbemre* did not address these problems since climate change was only one of several arguments, and the environmental degradation from gas flaring had already materialised.¹⁹³

In contrast, in 2015, *Greenpeace Southeast Asia* filed a complaint to the Philippine Commission on Human Rights against a number of carbon majors.¹⁹⁴ Typical for the second wave of litigation, the plaintiffs claimed a violation of the right to life, safety and housing, due to an increased intensity of storms and cyclones. They further alleged that the acidification of the oceans constitutes a violation of human rights to the people of the Philippines.¹⁹⁵ These allegations were linked to the defendants' contribution to climate change and GHG emissions since 1751.¹⁹⁶ The plaintiffs invoked corporate responsibility with respect to human rights under the UN Guiding Principles and a breach of the precautionary principle.¹⁹⁷

The Commission cannot impose fines or force the defendants to reduce emissions; however, it may seek the assistance of the UN to encourage the defendants to coop-

189 *Gbemre v Shell Petroleum Development Company of Nigeria Ltd and Others* (n 51) 30.

190 *Ibid*; Sinden (n 188) 181.

191 OHCHR Report on the relationship between climate change and human rights, UN Doc A/HRC/10/61, 65-83; John H Knox, 'Human rights principles and climate change' in Cinnamon P. Carlarne, Kevin R. Gray and Richard G. Tarasofsky (eds), *The Oxford handbook of international climate change law* (OUP 2016) 225, 226.

192 Ottavio Quirico, Jürgen Bröhmer and Marcel Szabó, 'States, climate change, and tripartite human rights: The missing link' in Mouloud Boumghar and Ottavio Quirico (eds), *Climate change and human rights: An international and comparative law perspective* (Routledge 2016) 28.

193 Sinden (n 188) 176.

194 *In re Greenpeace Southeast Asia and Others* (n 32).

195 Greenpeace Southeast Asia and Philippine Rural Reconstruction Movement, 'Petition to the Commission on Human Rights of the Philippines: Requesting for investigation of the responsibility of the carbon majors for human rights violations or threats of violations resulting from the impacts of climate change' (5 Dec 2015) 13, 15 <<http://climatecasechart.com/non-us-case/in-re-greenpeace-southeast-asia-et-al/>> accessed 7 June 2020.

196 *In re Greenpeace Southeast Asia and Others* (n 32).

197 Greenpeace Southeast Asia and Philippine Rural Reconstruction Movement (n 195) 17, 26.

erate; furthermore, it may make recommendations to the government and issue fact-finding reports.¹⁹⁸ In its finding of December 2019, the Commission announced that fossil fuel companies could, in fact, be held liable for climate change impacts.¹⁹⁹ In terms of human rights obligations, it stressed that fossil fuel companies have a duty to respect human rights and that they do also have a moral duty, which goes beyond that.²⁰⁰ It also held that legal responsibility is not covered by current international human rights treaties, but can be claimed under national law and that civil law of the Philippines provides for respective action.²⁰¹

This final statement is in line with the common understanding of international obligations of corporations according to public international law. Unfortunately, it does not help in assessing if or how the responsibility to respect human rights can be invoked by individuals, apart from national legislation. Nonetheless, it is one more statement stressing that corporations can be held liable for their contribution to climate change. With the Philippines being already severely threatened by climate change, this case emphasises how present the violation of human rights due to climate change is.

Little information is yet available on the most recent human rights case, *Youth Verdict v Waratah Coal*, filed in Australia in May 2020. The plaintiffs challenge the permission of a coal mine, alleging that the mine will contribute to climate change and thus 'infringe the plaintiffs right to life, the protection of children and the right to culture as protected by the Queensland Human Rights Act'.²⁰² It is the first human rights-based climate case in Australia.²⁰³ In general, only a few claims against corporations do expressly refer to human rights so far or try to invoke human rights directly.²⁰⁴ The progress of these three cases shows that human rights violations from climate change are becoming more and more visible. Since climate change has proceeded significantly in the last decades, it is getting easier to demonstrate actual damages and violations of rights and link them to climate change. Especially in the global south, the legal challenge of proving an imminent threat is vanishing, with progressing climatic change and its devastating consequences.

198 The Philippine Commission on Human Rights is a national human rights institution as recognised by the Paris Principles: 'Principles relating to the Status of National Institutions', UNGA Res. Dec 20 1993, 48/134; see also: UNGA Res. Nov 12 2019, A/C.3/74/L.44/Rev.1; Setzer and Benjamin (n 72) 93.

199 *In re Greenpeace Southeast Asia and Others* (n 32).

200 *Ibid.*

201 *Ibid.*

202 *Youth Verdict v Waratah Coal – Case Summary* (n 33).

203 Sabin Center for Climate Change Law (n 11).

204 Not expressly, but indirectly addressing human rights aspects of climate change, e.g.: *Native Village of Kivalina v Exxon Mobil Corp* (2012) 09-17490 (9th Circuit Court of Appeals); *Lliuya v RWE* (n 51).

4.3.2 Invoking responsibility under the OECD Guidelines for Multinational Enterprises

In the aftermath of the amendments of the OECD Guidelines in 2011, OECD complaints have become a more relevant tool in strategic litigation. The OECD Guidelines are a *soft law* mechanism outlining governance directives for multinational enterprises.²⁰⁵ Due to the OECD complaint mechanism, constructed as a mediation process, no legally binding decisions can be reached.²⁰⁶

The majority of OECD climate complaints (five out of eight) were filed within the last two years (2018-2020). All of them are still pending.

The overall effectiveness and success of the OECD complaint mechanism can nevertheless be figured from looking at the statistics. From January 2018 until now, 26 out of 41 cases are still pending.²⁰⁷ Considering that cases, which lead to an agreement, constitute some kind of compromise, i.e., a partial success, 40% of the complaints since 2018 have been (partially) successful.²⁰⁸ This recognition fits into the overall statistics of the period 2011 until 2018. Accordingly, 42% of the total cases filed led to an agreement between the parties, and roughly 36% resulted in a policy change of the company.²⁰⁹ 21% of the cases were related to the environment, whereas 57% dealt with human rights.²¹⁰ Admittedly, though, the practice of the various national contact points (NCPs) differs significantly. The German NCP, for example, was in the past alleged of tending to favour the private sector.²¹¹ Moreover, while some NCPs strictly regard themselves as being purely a mediator and rather refuse to make clear statements on whether the OECD Guidelines have been adhered to, other NCPs are less hesitant to declare certain behaviour to be inconsistent.²¹² The remaining three climate complaints were filed in 2007, 2011 and 2017.²¹³ The success of the complaint, which was filed in the Netherlands in 2017, *BankTrack et*

205 OECD Guidelines for Multinational Enterprises (n 185) Foreword; Elisa Morgera, *Corporate accountability in international environmental law* (OUP 2009) 101-105.

206 Karen Da Costa, 'Corporate accountability in the Samarco chemical sludge disaster' (2017) 26(5) *Disaster Prevention and Management* 540, 546-548.

207 OECD Watch (n 13).

208 Of the two cases, which were concluded by a final statement, one was successful and one was prevalingly unsuccessful, see: *CCC et al. v Adidas* (2020) (OECD NCP Germany); *Obelle Concern Citizens & FOCONE v Shell* (2020) (OECD NCP Netherlands).

209 OECD, 'National contact points for responsible business conduct' <<https://mneguidelines.oecd.org/Flyer-OECD-National-Contact-Points.pdf>> accessed 7 June 2020.

210 Ibid.

211 ECCHR, 'ECCHR Evaluation: Die OECD Verfahren zu Überwachungstechnologie gegen Gamma und Trovicor sowie zu Arbeitsbedingungen gegen KiK, C&A und Carl Rieker' (2015) 11 <<https://bit.ly/3DhHV8S>> accessed 29 March 2022.

212 See for example: *CCC et al. v Adidas* (n 208); *Obelle Concern Citizens & FOCONE v Shell* (n 208).

213 *Germanwatch v Volkswagen* (n 83); *Norwegian Climate Network et al. v Statoil* (n 35); *BankTrack et al. v ING Bank* (n 35).

al. v ING Bank, is of particular interest for the prospect of success of the now pending files.

The ING complaint was the first successful OECD complaint with regard to climate change.²¹⁴ Even though eventually an agreement was reached among the parties, the NCP made some remarkable points in its final statement. The complainants accused ING of not adequately reporting its emissions.²¹⁵ They alleged that ING did not observe the regulations on Disclosure (Chapter III), Environment (Chapter VI), and Consumer Interests (Chapter VIII), as set out in the Guidelines, which also require the fulfilment of ‘due diligence’ with regard to the value chain.²¹⁶ *BankTrack et al.*²¹⁷ urged ING to publish its carbon footprint, including indirect emissions related to loans and investments, and to publish concrete and measurable emission reduction targets. ING, in response, argued that there were no methods available to measure the indirect emissions of a bank’s lending portfolio.²¹⁸ It subsequently agreed to improve its reporting (and already did so in 2019) and stated that it will assess its most carbon-intensive sectors including automotive, shipping, aviation, steel etc.²¹⁹ The NCP decided not to make a statement on whether or not the ING reporting was in compliance with the guidelines. However, it stressed that, with regard to the Paris Agreement, it could be expected that the government will also impose binding regulations on the private sector and suggested further monitoring the progress in 2020.²²⁰

Regarding climate change, ‘the OECD Guidelines include a number of expectations extending to business action on climate change.’²²¹ The climate relevance of the OECD Guidelines was also highlighted in the Responsible Business and Human Rights Forum in Bangkok 2019.²²² According to the OECD Climate Action Summit, held in the context of the COP25, ‘these expectations include setting science based targets that are consistent with international commitment, disclosure of social and environmental risk reporting with a particular focus on GHG emissions’ as well as

214 The former case of *Norwegian Climate Network et al. v Statoil* (2011) was rejected.

215 *BankTrack et al.*, ‘*BankTrack et al. v ING Bank – Complaint*’ (08 May 2017) 9 <<http://climatecasechart.com/non-us-case/banktrack-et-al-vs-ing-bank/>> accessed 10 June 2020.

216 *BankTrack et al. v ING Bank* (n 35) 3.

217 *BankTrack et al.* (n 215) 9.

218 ING had started to publish its direct carbon emissions and had started to develop a methodology to measure emissions from financing in 2015. In 2017, they started to use a new methodology according to the Paris Agreement Capital Transition Assessment, see: *BankTrack et al. v ING Bank* (n 35) 4.

219 *Ibid.*

220 *Ibid* 3, 7.

221 OECD, ‘COP 25 – Climate Action Side Event: Background Note’ 2 <<https://bit.ly/3uAy4aq>> accessed 4 June 2020.

222 Responsible Business and Human Rights Forum, ‘Summary report’ (2019) <www.unescap.org/events/responsible-business-and-human-rights-forum> accessed 4 June 2020.

the respective consumer information.²²³ The ING decision is the first indicator that these expectations are actually taken up in practice. Accordingly, the Dutch NCP stressed that climate impact assessment is part of the due diligence requirement of the OECD Guidelines and that this includes impact assessment within the value chain.²²⁴

In general, the OECD complaints do raise a variety of arguments targeting corporate behaviour, e.g., misleading advertisement,²²⁵ improper involvement in local politics,²²⁶ insufficient environmental impact assessment,²²⁷ and more. Stunningly, five of the recently filed complaints refer to international climate agreements (Paris Agreement/Kyoto Protocol), assuming that corporate obligations can be directly derived from the agreements in conjunction with the OECD Guidelines' requirements of due diligence.²²⁸ Since the trend to strategic litigation seems to focus on carbon majors, this also holds true for OECD claims. However, the OECD Guidelines seem to also open opportunities to target other industries and their climate policies – especially the finance sector. Accordingly, the UK Export Finance Corporation is facing an OECD complaint, as well as several other banks (ANZ Bank Australia, ING Bank, Mizuho Bank). In *Australian Bush fire victims and Friend of the Earth v ANZ Bank*, the complainants alleged that the bank, one of Australia's largest financiers of fossil fuel industries, failed to adhere to the Paris Agreements reduction targets meaningfully.

5 Socio-political analysis – 20 years of litigation: where do we stand?

Climate change litigation has increased continuously since its beginning in the early 2000s and has received more public attention with the climate debate entering main-

223 OECD (n 221) 2.

224 *BankTrack et al. v ING Bank* (n 35) 3.

225 Client Earth, '*Client Earth v BP*: Complaint to the OECD National Contact Point UK' (5 Dec 2019) <https://complaints.oecdwatch.org/cases/Case_556> accessed 10 June 2020.

226 FOCUS et al., '*Focus v Ascent Resources plc*: Complaint to the OECD National Contact Point UK' (12 November 2019) <https://complaints.oecdwatch.org/cases/Case_555> accessed 10 June 2020.

227 Market Forces, '*Market Forces v SMBC, MUFG and Mizuho*: Complaint to the OECD National Contact Point Japan' (Nov 2016) <<http://climatecasechart.com/non-us-case/market-forces-v-smbc-mufg-and-mizuho/>> accessed 10 June 2020.

228 Ch. II - Commentary on general policies, OECD Guidelines for Multinational Enterprises (n 185) 14; *Norwegian Climate Network et al. v Statoil* (n 35); *BankTrack et al. v ING Bank* (n 35); Friends of the earth Australia, '*Australian bush fire victims v ANZ Bank*: Complaint to the OECD National Contact Point Australia' (30 Jan 2020) <https://complaints.oecdwatch.org/cases/Case_564> accessed 10 June 2020; Global Witness, '*Global Witness v UK Export Finance*: Complaint to the OECD National Contact Point UK' (17 March 2020) <https://complaints.oecdwatch.org/cases/Case_568> accessed 10 June 2020; Market Forces (n 227).

stream debates. After roughly twenty years of litigation, it is a convenient time to look back and take stock.

5.1 General trend and lessons learned

From the above-assessed cases, some general trends in non-US private litigation can be identified. NGOs are increasingly involved and have launched a series of claims within the last two years. This also stands for an increasing amount of strategic litigation.²²⁹ So far, the vast majority of cases has been filed in the global north, even though there might actually be quite some potential for claims in the global south.²³⁰ Another trend in recent private climate change litigation is that international climate agreements are invoked in national courts more often – even with regard to the private sector. A quite strong argument has been made in France and in the Netherlands, in line with the OECD complaints: for due diligence, ‘the only way to act accordingly is to submit themselves under the 2°C threshold’. Additionally, while in the earlier cases, climate change oftentimes was made only as a side argument (e.g., *Gbemre*), in the ‘second wave’ of cases, it constitutes the core argument.

Wilensky, in her assessment of Non-US Litigation in 2015, notes that ‘cases against corporations were the most successful group’ with a success rate of close to 90 percent.²³¹ She also notes that this number might not be representative.²³² Success rates have been analysed in detail above. On the other hand, with regard to strategic litigation, success should not only be measured by the legal outcome. In fact, it should be distinguished into legal success and strategic, i.e., socio-political success.

With regard to the legal success and although roughly one-third of the cases are still pending, it is possible to indicate some developments from particular cases, which are capable of having a knock-on effect on future cases.

One of these cases is certainly *Lliuya v RWE*, which seems to open the door to actually prove a causal link between the behaviour of a certain emitter and specific climate damage. If the court actually recognises a causal link, this could have an enormous impact on climate litigation worldwide since there is an astonishing trend of cross-referencing to decisions from other jurisdictions.²³³ Nonetheless, linking

229 Nicole Rogers, ‘If you obey all the rules you miss all the fun: Climate change litigation, climate change activism and lawfulness’ (2015) 13 NZJPI 179, 179; See also: Setzer and Byrnes (n 9) 8.

230 César Rodríguez-Garavito, ‘Human rights – The Global South’s route to climate litigation’ (2020) 114 AJIL 40.

231 *Wilensky* (n 16) 173.

232 *Ibid.*

233 *Rumpf* (n 79) 154.

particular damages to specific emissions of corporations remains difficult.²³⁴ Hence, private law remains to be a very rocky road for establishing corporate climate accountability.

Surprisingly, OECD complaints have turned out to be a quite successful way of holding corporations accountable due to their increasingly recognised moral duty. An obstacle, which takes up some of the benefits, is the fact that the NCPs practice varies in different countries.²³⁵ Still, statistics show that the OECD complaint mechanism does impact the corporate policies in question. It seems like the expected negative publicity is worthwhile to be avoided. However, it should also be assessed in how far a changed corporate policy also leads to changes on the ground.

The relevance of climate change to businesses is also revealed by the sheer number of companies, which are claiming to be or to become carbon neutral.²³⁶ Especially when climate change is gaining more and more public attention, an enforceable judgment will not be necessary in some cases. The OECD Guidelines, thus, might well turn out to be the most effective way of addressing corporate climate responsibilities.

It is more difficult to define success outside of the legal sphere. In general, the (strategic) success of climate cases should not be underestimated. A number of cases have been quite successful in driving the public discourse, and media coverage has been high. In the US, the law firm defending Exxon Mobil has been subject to law students protest and critique; and in Germany, RWEs attempts to cut an ancient forest for a mining project has been put on halt due to protest and legal action.²³⁷ The socio-political success of climate lawsuits is also reflected in the taking up of its goals by non-judicial shareholder initiatives. Ultimately, the legitimacy of law is tested by means of its performance on a case-to-case basis.²³⁸ As such, reality reflects the law and can either form it or point to its defectiveness. Thus, it is indispensable to illustrate regulatory gaps and contradictions that occur due to societal or environmental changes.

234 See: *Smith v Fronterra Co-Operative Group Ltd* (n 51); Ganguly, Setzer and Heyvaert (n 77) 25.

235 Da Costa (n 206) 547.

236 Climate Neutral, 'Climate Neutral certified brands' (2020) <www.climateutral.org/certified-brands> accessed 15 June 2020; Climate Partner, 'Success stories' (2020) <www.climatepartner.com/en/success-stories#customers> accessed 17 June 2020; Kristian Frigelj, 'Die subversive Energie über den Hambacher Forst hinauszutragen' *Die Welt* (21 January 2020) <www.welt.de/politik/deutschland/article205224983/Aktivisten-gegen-Kohle-Die-subversive-Energie-ueber-den-Hambacher-Forst-hinaustragen.html> accessed 10 June 2020.

237 Emily Holden, 'Harvard law students ramp up protest against ExxonMobil climate firm' *The Guardian* (16 January 2020) <www.theguardian.com/business/2020/jan/15/harvard-law-students-protest-firm-representing-exxon-climate-lawsuit> accessed 16 June 2020.

238 Oliver Gerstenberg, 'Radical democracy and the rule of law: Reflections on J. Habermas' legal philosophy' (2019) 17(4) *ICON* 1054.

On the other hand, *Lliuya v RWE* also points to another aspect of strategic litigation: In some instances, the strategic success for the societal and legal change might be a lot bigger than the one for the plaintiff personally. The case, filed in 2015, is still pending. The German court has requested the Peruvian agencies' permission to take evidence, which is expected to be completed by the end of this year.²³⁹ Meanwhile, as time passes and the glaciers continue to melt, the plaintiff still faces severe risks in his day-to-day life.²⁴⁰ Aspects, which have to be carefully assessed and clearly communicated, especially in cases that do indirectly incorporate human rights aspects and aspects of global climate justice.²⁴¹ Moreover, while in *Gbemre v Shell*, the human rights obligation of Shell was clearly pointed out by the court, the judgement was never enforced.²⁴²

5.2 The way forward for strategic litigation

Nowadays, private climate change litigation primarily focuses on carbon majors. Yet, the responsibility of other private players should also be addressed. This observation does not imply that carbon majors do not have a responsibility and large influence.²⁴³ Neither does it mean that they should not be pressured to assume a fair amount of responsibility. However, the economy we live in today is not (yet) capable of functioning without fossil fuels, and other players also do have quite some influence on the path to change.

Agriculture and land use, for example, still amount to 24% of global greenhouse gas emissions.²⁴⁴ Thus, it is worth taking a look at how eating habits and land use are influenced by some major corporate players, considering that the food market is by and large apportioned among a handful of multinational corporations.²⁴⁵ Moreover, the role of digitalisation is hardly ever addressed, even though it is estimated that

239 Germanwatch, 'The Huaraz case at a glance' (2019) <<https://germanwatch.org/de/16451>> accessed 12 June 2020.

240 Germanwatch, 'The Huaraz case in its fourth year: Further Delay in taking evidence worrying in the light of harzardous situation on site' (2019) <www.germanwatch.org/en/huaraz> accessed 15 June 2020.

241 Emphasising the importance of transnational cooperation, Arite Keller and Karina Theurer, 'Menschenrechte mit rechtlichen Mitteln durchsetzen: Die Arbeit des ECCHR' in Alexander Graser and Christian Helmrich (eds), *Strategic litigation: Begriff und Praxis* (1st edn, Nomos 2019) 55, 56.

242 Sinden (n 188) 174.

243 Corporate Accountability (n 2).

244 EPA, 'Global Emissions by Economic Sector' <www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions> accessed 11 June 2020.

245 Kate Taylor, 'These 10 companies control everything you buy' *The Independent* (31 May 2017) <<https://bit.ly/3iMdIFs>> accessed 29 March 2022; William J. Ripple, Christopher Wolf and Thomas Newsome, 'World scientists' warning of a climate emergency' (2020) 70(1) *Bio-Science* 8, 11.

information and communication technology products and services accounted for more than 4.6% of world-wide electricity consumption.²⁴⁶

One reason why carbon majors are primarily targeted is the related progress in science with regard to attributing certain amounts of (historic) carbon emissions to certain corporations. In addition, counting emissions in other sectors does not seem to be so much of a problem when corporations apply for carbon neutrality certificates or commit themselves to the carbon disclosure project. Many of these companies have entered into a competition of boasting about their climate neutrality and climate targets, frequently making inadequate claims on the carbon savings related to their products.²⁴⁷ Moreover, many companies have voluntarily participated in the carbon disclosure project.²⁴⁸ With regard to causation, it will be necessary to also refer to historical emissions of the company in question, for which the data available on the conventional sector is rather poor.²⁴⁹ However, from the above assessment, it seems to be worth trying to benchmark them against their own promises.

When considering the above assessment regarding the conventional private sector, the focus should be on claims that do not require proof of damage and causation. This applies to shareholder and consumer protection claims, targeting greenwashing and invoking responsibility under the OECD Guidelines and other international soft law instruments.

Cases under consumer protection and competition law, which have been filed in Australia, have been very successful. Consumer protection law may obviously vary throughout different jurisdictions. While, for example, in Australia, anybody may file a claim concerning misleading or deceptive conduct in trade and commerce, in other countries, only certain associations do have the right to file general consumer protection claims.²⁵⁰ In jurisdictions where a state agency has to pursue the claim, there is only limited potential from a strategic litigation perspective. In some constellations, civil actors may file a complaint to an agency, which could be accompanied by public campaigns. Such complaints are capable of attracting the state's attention if the government is generally willing to take up action.²⁵¹ However, these cases are highly

246 Joshua Aslan et al., 'Electricity intensity of internet data transmission: Untangling the estimates' (2018) 22(4) *Journal of Industrial Ecology* 785.

247 Russell (n 93) 2.

248 'Carbon Disclosure Project' <www.cdp.net/en/info/about-us/what-we-do> accessed 12 June 2020.

249 Since GHG emissions remain in the atmosphere for decades and thus affect the climate cumulatively over time, historic emissions are decisive, see Allen et al. (n 116) 1369.

250 Abbs, Cashman and Stephens (n 37) 107; Wagner (n 39) 188, 189.

251 See for example the 'Bayer-Case': ECCHR, 'Bayer: Doppelstandards beim Vertrieb von Pestiziden' (2016) <<https://bit.ly/3uEcRft>> accessed 11 June 2020; after the ECCHR had filed a complaint to the plant protection agency of North-Rhine-Westphalia in 2016, a national task force for export control of pesticides was established.

dependent on the political will and thus vulnerable to political changes.²⁵² While in Australia, the ACCC did not raise any more claims since political changes in 2013, the development in the US was to the contrary. With the election of the Trump Administration, an increased number of cases have been filed by counties and states.²⁵³

As shown above, a bunch of claims against the corporate sector has been filed concerning corporate law and finance. But it seems like this sphere has not yet gained as much attention as other laws (e.g., human rights and public nuisance). These areas may have been underestimated in the past. At least, they are underrepresented in present climate litigation. The prospects of financial claims have been assessed in detail by Solana.²⁵⁴ Accordingly, there is a potential for either financial institutions to be held responsible for their lending portfolio and the subsequent GHG emissions.²⁵⁵ Or the debtor as the bank's contractual partner may be sued for not implementing green policies as set out by the contract/policy of the bank.²⁵⁶ In the first instance, the investing consumer would be the plaintiff, whereas, in the second, the bank would have to be the one who takes legal actions. Moreover, projects the World Bank Group finances can be reviewed with regard to the IFC Performance Standards.²⁵⁷ Anyone who is affected by such a project can file a complaint to the IFC ombudsman who reports directly to the President of the World Bank Group.²⁵⁸

Shareholder claims can invoke a duty of disclosure with regard to financial risks from climate change and/or climate change litigation. But they can also review false promises and address greenwashing activities. As has been shown with regard to the French cases, shareholder action can put pressure on corporations even ahead of legal action. Yet, strategic litigation should not perpetuate the belief that combatting the climate crisis has to be economically profitable.

Moreover, in some cases, corporations have sued other corporations for unfair competition. While the issuing of an injunction for false advertisement is difficult to reach for a consumer, corporations do have a right to take legal action if they, as competitors, are affected.²⁵⁹ The notion of 'corporate partnering' in strategic litigation has also been pointed out by Peel.²⁶⁰ With an increasing number of truly climate concerned or green companies, competitors' interest in climate litigation may also

252 Jacqueline Peel, Hari Osofsky and Anita Foerster, 'Shaping the 'next generation' of climate change litigation' (2017) 41 MULR 793, 844.

253 Adler (n 18) iii.

254 Solana (n 81).

255 Ibid.

256 Ibid 124.

257 Performance Standards on Environmental and Social Sustainability 2012 (International Finance Corporation).

258 Elisa Morgera, 'From corporate social responsibility to accountability mechanisms' in Pierre-Marie Dupuy and Jorge E Vinales (eds), *Harnessing foreign investment to promote environmental protection* (CUP 2013) 342-345.

259 Wagner (n 39) 187.

260 Peel, Osofsky and Foerster (n 252) 836, 837.

increase. Thereby, NGOs would rather not be in the courtrooms but instead would support the digging out of facts about greenwashing and subsequent unjust competitive advantages. A strategic starting point could also be found in educating green companies and startups about the possibilities and advantages of climate change litigation and promoting it.

As has already been pointed out by *Bouwer*, climate change litigation should not stick to ‘searching for the holy grail’ but also take into account small and apparently incon siderable climate cases.²⁶¹ In terms of stressing its nature as ‘strategic litigation’, private climate change litigation should not be afraid of legal defeats but also take into account the indispensability of an overall systemic change.²⁶² According to climate scientists, ‘excessive extraction of materials and overexploitation of ecosystems, driven by economic growth, must be quickly curtailed to maintain long-term sustainability of the biosphere’.²⁶³ Addressing responsibility of the private sector should thus also address responsibility for a systemic change and questioning the idea of constant economic growth. *In concreto*, this means taking a look at corporate responsibility for development towards sustainability, for example, with regard to the lifecycle of products, waste management and the influence on consumer habits. To include this in strategic climate litigation will surely not be an easy task or be acknowledged by courts straight away. But, quoting *Wolfgang Kaleck* of the European Center for Constitutional and Human Rights, ‘strategic litigation takes part similarly within and without the legal system. It includes demanding of rights as much as the utopia of justice.’²⁶⁴ If we are not willing to tackle the systemic question, we should also be honest enough and consequently turn to climate change adaptation instead of mitigation.

6 Conclusion

While writing this, just another corona-miracle has occurred: The German government has warded off the car industry’s request for subsidies on combustion engines. In light of the current pandemic, facing the economic crisis ahead, global climate justice and climate change mitigation will have to be eked out at all fronts. This means broadening the horizon of private climate litigation beyond carbon majors towards influential multinational corporations in general and assessing further avenues of litigation, including corporate partnering and addressing fundamental systemic questions.

261 *Bouwer* (n 10).

262 See also: Andreas Fischer-Lescano, ‘Kassandras Recht’ (2019) 52(4) KJ 407, 421.

263 Ripple, Wolf and Newsome (n 245) 11.

264 Kaleck (n 5) 25 (unofficial translation by the author).

Even though it is certainly debatable, whether it is necessary or even helpful to address such fundamental questions in the courtroom, speaking about strategic litigation, one should not forget that driving a societal discourse for change is a crucial part of it.²⁶⁵ Pointing to the weaknesses of the existing law will often come at the cost of legal success, yet nothing can be achieved by avoiding the dispute. Whatever the current corona crisis will finally be good for, it may already have assured us that the unthinkable is actually possible once we realise that the threat of climate change is as real and as current as this virus – even though neither of them we can see.

Bibliography

- Abbs R, Cashman P and Stephens T, 'Australia' in Lord R et al. (eds), *Climate change liability: Transnational law and practice* (CUP 2012).
- ACCC, '2020 ACCC compliance and enforcement priorities' (2020) <www.accc.gov.au/publications/2020-compliance-and-enforcement-priorities> accessed 10 June 2020.
- Adler DP, 'U.S. climate change litigation in the age of Trump: Year one' (2018) <<https://climate.law.columbia.edu/content/searchable-library#/filter/categories/Climate%20Litigation>> accessed 4 June 2020.
- Allen M et al., 'Scientific challenges in the attribution of harm to human influence on climate' (2007) 155(6) U Pa L Rev 1353.
- Aslan J et al., 'Electricity intensity of internet data transmission: untangling the estimates' (2018) 22(4) Journal of Industrial Ecology 785.
- Bauchmüller M, 'Warum es für 'Klimaneutralität' starke Regeln braucht' *Süddeutsche Zeitung* (9 December 2019) <www.wri.org/publication/estimating-and-reporting-comparative-emissions-impacts-products> accessed 10 June 2020.
- Betlem G and Nollkaemper A, 'Giving effect to public international law and European Community law before domestic courts: A comparative analysis of the practice of consistent interpretation' (2003) 14(3) EJIL 569.
- Bialek J, 'Evaluating the zero draft on a UN Treaty on Business and Human Rights: What does it regulate and how likely is its adoption by states?' (2019) 9(3) Goettingen J Intl L 501.
- Bilchitz D and Deva S (eds), *Building a Treaty on Business and Human Rights* (CUP 2017).
- Bouwer K, 'The unsexy future of climate change litigation' (2018) 30 JEL 438.
- Brabant S and Savourey E, 'Law on the corporate duty of vigilance' (2017) <www.bhrinlaw.org/frenchcorporatedutyaw_articles.pdf> accessed 14 June 2020.
- Brunnée J et al., 'Overview of legal issues relevant to climate change' in Lord R et al. (eds), *Climate change liability: Transnational law and practice* (CUP 2012).
- Burger M, Wentz J and Horton R, 'The law and science of climate change attribution' (2020) 45(1) Columbia JEL 57.
- Business & Human Rights Resource Center, 'Turning up the heat: Corporate legal accountability for climate change: Corporate Legal Accountability Annual Briefing' (2018) <[---

265 Rogers \(n 229\) 199; Fischer-Lescano \(n 262\) 420-425.](http://www.business-</p></div><div data-bbox=)

- humanrights.org/en/turning-up-the-heat-corporate-legal-accountability-for-climate-change> accessed 4 June 2020.
- Carbon Disclosure Project <www.cdp.net/en/info/about-us/what-we-do> accessed 12 June 2020.
- , ‘Committing to climate action in the supply chain: CDP Report’ (2015) <www.cdp.net/en/reports/archive?page=19&per_page=5&sort_by=published_at&sort_dir=desc&utf8=%E2%9C%93> accessed 10 June 2020.
- , ‘Out of the starting blocks: Tracking progress on corporate climate action’ (2016) <www.cdp.net/en/reports/archive?page=17&per_page=5&sort_by=published_at&sort_dir=desc&utf8=%E2%9C%93> accessed 10 June 2020.
- Client Earth, ‘*Client Earth v BP*: Complaint to the OECD National Contact Point UK’ (05 Dec 2019) <https://complaints.oecdwatch.org/cases/Case_556> accessed 10 June 2020.
- , ‘Briefing: Ostrołęka C: Energa’s and Enea’s Board Members’ Fiduciary Duties to the Companies and Shareholders’ (2018) <http://climatecasechart.com/non-us-case/clientearth-v-enea/> accessed 13 June 2020.
- Climate Action Tracker, ‘Country summary – EU’ <https://climateactiontracker.org/countries/eu/> accessed 13 June 2020.
- Climate Neutral, ‘Climate neutral certified brands’ (2020) <www.climateneutral.org/certified-brands> accessed 15 June 2020.
- Climate Partner, ‘Success stories’ (2020) <www.climatepartner.com/en/success-stories#customers> accessed 17 June 2020.
- Corporate Accountability, ‘Polluting Paris: How big polluters are undermining global climate policy’ (2017) <https://bit.ly/3Ls9Cyx> accessed 31 March 2022.
- Corporate Europe Observatory, ‘EU ETS myth busting: Why it can’t be reformed and shouldn’t be replicated’ (2013) <https://corporateeurope.org/en/climate-and-energy/2013/04/eu-ets-myth-busting-why-it-can-t-be-reformed-and-shouldn-t-be-replicated> accessed 11 June 2020.
- Cullet P, ‘Human rights and climate change: Broadening the right to environment’ in Carlarne CP, Gray KR and Tarasofsky RG (eds), *The Oxford handbook of international climate change law* (OUP 2016).
- Da Costa K, ‘Corporate accountability in the Samarco chemical sludge disaster’ (2017) 26(5) *Disaster Prevention and Management* 540.
- Davies W, ‘The last global crisis didn’t change the world. But this one could.’ *The Guardian* (24 March 2020) www.theguardian.com/commentisfree/2020/mar/24/coronavirus-crisis-change-world-financial-global-capitalism accessed 4 March 2022.
- Delfino A, Wallace M and Watchmann PQ, ‘Corporate social responsibility and climate change’ in Watchman PQ (ed), *Climate change: A guide to carbon law and practice* (Globe Law & Business 2008).
- Dellinger M, ‘See you in court: Around the world in eight climate change lawsuits’ (2018) 42 *Wm & Mary Env’t L & Pol’y Rev* 525.
- ECCHR, ‘ECCHR Evaluation: Die OECD Verfahren zu Überwachungstechnologie gegen Gamma und Trovicor sowie zu Arbeitsbedingungen gegen KiK, C&A und Carl Rieker’ (2015) <https://bit.ly/3DhHV8S> accessed 29 March 2022.
- , ‘Bayer: Doppelstandards beim Vertrieb von Pestiziden’ (2016) <www.ecchr.eu/fall/bayer-doppelstandards-beim-vertrieb-von-pestiziden/#case_case> accessed 11 June 2020.
- EPA, ‘Global emissions by economic sector’ <www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions> accessed 11 June 2020.

- 'EU Carbon neutrality: Leaders agree 2050 target without Poland' *BBC News* (13 December 2019) <www.bbc.com/news/world-europe-50778001> accessed 5 June 2020.
- Expert Group on Climate Obligations of Enterprises, *Principles on Climate Obligations of Enterprises – commentary* (Eleven International Publishing 2018).
- Fischer-Lescano A, 'Kassandras Recht' (2019) 52(4) KJ 407.
- Frank W, 'Klimahaftung und Kausalität' (2013) ZUR 28.
- Frigelj K, 'Die subversive Energie über den Hambacher Forst hinauszutragen' *Die Welt* (21 January 2020) <www.welt.de/politik/deutschland/article205224983/Aktivisten-gegen-Kohle-Die-subversive-Energie-ueber-den-Hambacher-Forst-hinaustragen.html> accessed 10 June 2020.
- Fritz T, 'VwGH bejaht Antragsrecht von Umweltorganisationen für Luftreinhaltungsmaßnahmen' (2018) *Recht der Umwelt* 211.
- Ganguly G, Setzer J and Heyvaert V, 'If at first you don't succeed: Suing corporations for climate change' (2018) OJLS 1.
- , 'The Huaraz Case at a glance' (2019) <<https://germanwatch.org/de/16451>> accessed 12 June 2020.
- , 'The Huaraz Case in its fourth year: Further delay in taking evidence worrying in the light of hazardous situation on site' (2019) <www.germanwatch.org/en/huaraz> accessed 15 June 2020.
- Gerrard M and Wannier GE (eds), *Threatened island nations: Legal implications of rising seas and a changing climate* (First paperback edn, CUP 2014).
- Gerstenberg O, 'Radical democracy and the rule of law: Reflections on J. Habermas' legal philosophy' (2019) 17(4) *ICON* 1054.
- Glinski C, 'Haftung multinationaler Unternehmen für Umweltschäden bei Auslandsdirektinvestitionen' in Winter G (ed), *Die Umweltverantwortung multinationaler Unternehmen* (Nomos 2005).
- Grabosch R, 'Unternehmen und Menschenrechte: Gesetzliche Verpflichtungen zur Sorgfalt im weltweiten Vergleich' (2019) <www.fes.de/themenportal-die-welt-gerecht-gestalten/weltwirtschaft-und-unternehmensverantwortung/wirtschaft-und-menschenrechte> accessed 15 June 2020.
- Grantham Research Institute on Climate Change and the Environment, 'Climate change laws of the world – case database (GRICC)' <https://climate-laws.org/cclow/litigation_cases> accessed 4 June 2020.
- Greenhouse Gas Protocol, 'Technical guidance for calculating scope 3 emissions' (2013) <https://ghgprotocol.org/sites/default/files/standards/Scope3_Calculation_Guidance_0.pdf> accessed 10 June 2020.
- , 'A corporate accounting and reporting standard' (2015) <<https://bit.ly/3Uj6tDL>> accessed 31 March 2022.
- Greenpeace Canada, 'Press release: Alberta Securities Commission reviewing Greenpeace complaint of inadequate disclosure of climate risks by Kinder Morgan' (2018) <www.greenpeace.org/canada/en/press-release/285/press-release-alberta-securities-commission-reviewing-greenpeace-complaint-of-inadequate-disclosure-of-climate-risk-by-kinder-morgan/> accessed 1 June 2020.
- Greenpeace Southeast Asia and Philippine Rural Reconstruction Movement, 'Petition to the Commission on Human Rights of the Philippines: Requesting for investigation of the responsibility of the carbon majors for human rights violations or threats of violations resulting from the impacts of climate change' (5 December 2015) <<http://climatecasechart.com/non-us-case/in-re-greenpeace-southeast-asia-et-al/>> accessed 7 June 2020.
- Griffin P, 'CDP carbon majors report 2017: 100 fossil fuel producers and nearly 1 trillion tonnes of greenhouse gas emissions' (2017) <<https://bit.ly/3Lcfs7g>> accessed 31 March 2022.

- Grossman DA, 'Tort-based climate litigation' in Osofsky HM and Burns WCG (eds), *Adjudicating climate change: State, national, and international approaches* (CUP 2009).
- Heede R, 'Carbon majors: Accounting for carbon and methane emissions 1854-2010' (Methods & Results Report 2014) <<https://climateaccountability.org/pdf/MRR%209.1%20Apr14R.pdf>> accessed 15 June 2020.
- Holden E, 'Harvard law students ramp up protest against ExxonMobil climate firm' *The Guardian* (16 January 2020) <www.theguardian.com/business/2020/jan/15/harvard-law-students-protest-firm-representing-exxon-climate-lawsuit> accessed 16 June 2020.
- Hollaus B, 'Zur dezentralen Umsetzung der Aarhus-Konvention in Österreich' (2019) 17(2) EurUP 169.
- Hurowitz G, 'The coronavirus climate profiteers: ... and the climate heroes doing the right thing in a time of crisis' *Mighty Earth* (14 April 2020) <<https://stories.mightyearth.org/the-coronavirus-climate-profteers/index.html>> accessed 12 June 2020.
- IEA, 'Tracking Transport 2019' (2019) <www.iea.org/reports/tracking-transport-2019> accessed 10 June 2020.
- IPCC, *Global warming of 1,5°C: Summary for policymakers* (2018) <www.ipcc.ch/sr15/> accessed 2 June 2020.
- Jarass H (ed), *Federal Emission Control Act – commentary* (C.H. Beck 2017).
- Kaleck W, 'Mit Recht gegen Macht' in Graser A and Helmrich C (eds), *Strategic litigation: Begriff und Praxis* (1st edn, Nomos 2019).
- Karavias M, *Corporate obligations under international law* (OUP 2013).
- Keller A and Theurer K, 'Menschenrechte mit rechtlichen Mitteln durchsetzen: Die Arbeit des ECCHR' in Graser A and Helmrich C (eds), *Strategic litigation: Begriff und Praxis* (1st edn, Nomos 2019).
- Keller M and Kapoor S, 'Climate change litigation: Zivilrechtliche Haftung für Treibhausgasemissionen' (2019) Business Berater 706.
- Khare R and Verma A, 'Green federalism and climate change: Challenges and options: An Indian perspective' (2019) 6 J Envtl L Pol'y & Dev 61.
- Klein N, *This changes everything: Capitalism vs. the climate* (Simon & Schuster 2014).
- Klimke R, 'German Civil Code sec. 906', *Beck'scher Grosskommentar* (C.H. Beck 2020).
- Knox JH, 'Human rights principles and climate change' in Carlarne CP, Gray KR and Tarasofsky RG (eds), *The oxford handbook of international climate change law* (OUP 2016).
- Kobe Steel Ltd, 'Corporate profile' <<https://bit.ly/3JQ0jIu>> accessed 29 March 2022.
- Lord R et al. (eds), *Climate change liability: Transnational law and practice* (CUP 2012).
- Markell D and Ruhl JB, 'An empirical assessment of climate change in the courts: A new jurisprudence or business as usual' (2012) 64(15) FLR 15.
- Martin-Ortega O and Hoekstra J, 'Reporting as a means to protect and promote human rights?: The EU Non-Financial Reporting Directive' (2019) 44(5) EnvLRev 622.
- McAllister LK, 'Litigating climate change at the coal mine' in Osofsky HM and Burns WCG (eds), *Adjudicating climate change: State, national, and international approaches* (CUP 2009).
- McPhail K and Adams CA, 'Corporate respect for human rights: Meaning, scope and the shifting order of discourse' (2016) 29(4) Accounting, Auditing & Accountability Journal 650.
- Moghaddam MH and Zare A, 'Responsibilities of multinational corporations on environmental issues' (2017) 10(5) J Pol & L 78.
- Morgera E, *Corporate accountability in international environmental law* (OUP 2009).

- , ‘From corporate social responsibility to accountability mechanisms’ in Dupuy P-M and Vinales JE (eds), *Harnessing foreign investment to promote environmental protection* (CUP 2013).
- Muffett C and Feit S, ‘Smoke and fumes: The legal and evidentiary basis for holding big oil accountable for the climate crisis’ (2017) <www.ciel.org/wp-content/uploads/2017/11/Smoke-Fumes-FINAL.pdf> accessed 6 June 2020.
- Nachtwey O, ‘Wenn der Kapitalismus eine Vollbremsung macht’ *Spiegel Online* (4 April 2020) <www.spiegel.de/kultur/corona-krise-es-ist-zeit-fuer-eine-reform-von-wohlfahrt-und-wirtschaftsleben-a-afda945f-b58c-4295-bf3c-7869023d6b54> accessed 4 March 2022.
- , ‘Total: The climate chaos strategy: Synthesis in English of the French report’ (2019) <https://notreaffaireatous.org/wp-content/uploads/2019/05/ResumeTOTAL_A4_ENGLISH.pdf> accessed 3 June 2020.
- OECD, ‘COP 25 – Climate action side event: Background note’ <<https://bit.ly/3uAy4aq>> accessed 29 March 2022.
- , ‘National contact points for responsible business conduct’ <<https://bit.ly/3tJemKd>> accessed 29 March 2022.
- OECD Guidelines for Multinational Enterprises 2011 (OECD).
- OECD Watch, ‘OECD watch case database’ <<https://complaints.oecdwatch.org>> accessed 4 June 2020.
- Osofsky HM and Burns WCG (eds), *Adjudicating climate change: State, national, and international approaches* (CUP 2009).
- Pattajoshi N, ‘*Ridhima Pandey v Union of India*: The onset of climate change litigation in India’ (2019) 6 J Envtl L Pol’y & Dev 83.
- Peel J, ‘Issues in climate change litigation’ (2011) CCLR 15.
- Peel J, Osofsky H and Foerster A, ‘Shaping the ‘next generation’ of climate change litigation’ (2017) 41 MULR 793.
- Peel J and Osofsky HM, *Climate change litigation: Regulatory pathways to cleaner energy* (CUP 2017).
- Pfrommer T et al., ‘Establishing causation in climate litigation: admissibility and reliability’ (2019) 152(1) Climatic Change 67.
- Quirico O, Bröhmer J and Szabó M, ‘States, climate change, and tripartite human rights: The missing link’ in Boumghar M and Quirico O (eds), *Climate change and human rights: An international and comparative law perspective* (Routledge 2016).
- Responsible Business and Human Rights Forum, ‘Summary report’ (2019) <www.unescap.org/events/responsible-business-and-human-rights-forum> accessed 4 June 2020.
- Reuters, ‘Detroit automakers’ big transition to electric cars? Don’t hold your breath: Trucks and SUVs are 82% of Ford and GM sales – by 2026, they’ll increase to 87%’ (26 March 2020) <www.autoblog.com/2020/03/26/gm-ford-truck-suv-sales-electric-cars/?guccounter=1> accessed 10 June 2020.
- , ‘Investors plan to push Total to do more on climate change’ (15 April 2020) <www.reuters.com/article/us-climatechange-total-investors/investors-plan-to-push-total-to-do-more-on-climate-change-idUSKCN21X1EH> accessed 10 June 2020.
- Ripple WJ, Wolf C and Newsome T, ‘World scientists’ warning of a climate emergency’ (2020) 70(1) bioscience 8.

- Rodríguez-Garavito C, 'Business and human rights: Beyond the end of the beginning' in Rodríguez-Garavito C (ed), *Business and human rights: Beyond the end of the beginning* (Globalization and human rights, CUP 2017).
- , 'Human rights – the global South's route to climate litigation' (2020) 114 AJIL 40.
- Rogers N, 'If you obey all the rules you miss all the fun: Climate change litigation, climate change activism and lawfulness' (2015) 13 NZJPII 179.
- Roy S, 'Urgenda II and its discontents' (2019) Climate Change L Rev 130.
- Ruggie JG, *Just business: Multinational corporations and human rights* (W. W. Norton & Company 2013).
- , 'Incorporating human rights: Lessons learned, and next steps' in Nolan J and Baumann-Puly D (eds), *Business and human rights: From principles to practice* (Routledge 2016).
- Rumpf M, 'Der Klimawandel als zunehmendes Haftungsrisiko für "Carbon Majors"' (2019) 17(2) EurUP 145.
- Ruppel OC, Roschmann C and Ruppel-Schlichting K (eds), *Climate change: International law and global governance. Volume I: Legal responses and global responsibility* (Nomos 2013).
- Russell S, 'Estimating and reporting the comparative emissions impacts of products' (2019) <www.wri.org/publication/estimating-and-reporting-comparative-emissions-impacts-products> accessed 10 June 2020.
- Sabin Center for Climate Change Law, 'Climate change litigation database (SCCC)' <<http://climatecasechart.com>> accessed 4 June 2020.
- Schmidt A, Stracke K and Wegener B, 'Die Umweltverbandsklage in der rechtspolitischen Debatte' (2017) <www.umweltbundesamt.de/publikationen> accessed 13 June 2020.
- Seeberger M, *Der Wandel der Automobilindustrie hin zur Elektromobilität: Veränderungen und neue Wertschöpfungspotenziale für Automobilhersteller* (Universität St. Gallen 2016).
- Setzer J and Benjamin L, 'Climate litigation in the global South: Constraints and innovations' (2020) 9(1) TEL 77.
- Setzer J and Byrnes R, 'Global trends in climate change litigation: 2019 snapshot' (2019) <www.lse.ac.uk/GranthamInstitute/publication/global-trends-in-climate-change-litigation-2019-snapshot/> accessed 4 June 2020.
- Sherpa, 'Vigilance plans reference guide' <www.asso-sherpa.org/wp-content/uploads/2019/02/Sherpa_VPRG_EN_WEB-VF-compressed.pdf> accessed 11 June 2020.
- Simanovski S, 'Could Net-Zero Emissions prove to be a fatal blow for climate justice?' *Völkerrechtsblog* (13 May 2020) <<https://voelkerrechtsblog.org/could-net-zero-emissions-prove-to-be-a-fatal-blow-for-climate-justice/>> accessed 10 June 2020.
- Sinden A, 'An emerging human right to security from climate change: The case against gas flaring in Nigeria' in Osofsky HM and Burns WCG (eds), *Adjudicating climate change: State, national, and international approaches* (CUP 2009).
- Solana J, 'Climate litigation in financial markets: A typology' (2020) 9(1) TEL 103.
- Sotos M, 'GHG Protocol – Scope 2 Guidance: An amendment to the GHG Protocol Corporate Standard' (World Resources Institute 2015) <<https://bit.ly/3DiJ00j>> accessed 29 March 2022.
- Spier J, 'Legal strategies to come to grips with climate change' in Ruppel OC, Roschmann C and Ruppel-Schlichting K (eds), *Climate change: International law and global governance. Volume I: Legal responses and global responsibility* (Nomos 2013).
- Spiesshofer B, *Responsible enterprise* (C.H. Beck 2018).
- Stark A, 'Umweltrechtsschutz in China' (2019) 17(2) EurUP 193.

- Takamura Y, 'Japan' in Lord R et al. (eds), *Climate change liability: Transnational law and practice* (CUP 2012).
- Taylor K, 'These 10 companies control everything you buy' *The Independent* (31 May 2017) <www.independent.co.uk/extras/these-10-companies-control-everything-you-buy-a7765461.html> accessed 10 June 2020.
- The Energy Mix, 'Alberta regulator probes Kinder Morgan's failure to disclose climate risks' (2018) <<https://theenergymix.com/2018/04/10/alberta-regulator-probes-kinder-morgans-failure-to-disclose-climate-risk/>> accessed 1 June 2020.
- UN Global Compact, '87 major companies lead the way towards a 1,5°C future at UN Climate Action Summit' (2019) <www.unglobalcompact.org/news/4476-09-21-2019> accessed 11 June 2020.
- UNEP, 'Climate change and human rights' (2015) <<https://bit.ly/3817vU1>> accessed 28 March 2022.
- UNFCCC, 'Information on climate finance negotiations and events at COP 25' (2019) <<https://unfccc.int/topics/climate-finance/the-big-picture/climate-finance-in-the-negotiations/climate-finance/information-on-climate-finance-negotiations-and-events-at-cop-25>> accessed 10 June 2020.
- Verma A, 'Green federalism and climate change: Challenges & options – An Indian Perspective' (2019) 6 *J Envtl L Pol'y & Dev* 61.
- von Bar C, 'Chapter 1: Fundamental provisions' in von Bar C et al. (eds), *Non-contractual liability arising out of damage caused to another: (PEL Liab. Dam.)* (Principles of European law 7, OUP 2009).
- , 'Chapter 3: Accountability' in von Bar C et al. (eds), *Non-contractual liability arising out of damage caused to another: (PEL Liab. Dam.)* (Principles of European law 7, OUP 2009).
- Wagner E, 'Die Notwendigkeit einer Verbandsklage im Klimaschutzrecht' (2019) 17(2) *EurUP* 185.
- Wallace J, 'Oil price crash revives fossil fuel divestment campaigns' *Foreign Pol'y* (15 May 2020) <<https://foreignpolicy.com/2020/05/15/oil-price-crash-revives-fossil-fuel-divestment-campaigns-climate-change-activism/>> accessed 10 June 2020.
- Wedy G, 'Climate legislation and litigation in Brazil' (2017) <<https://climate.law.columbia.edu/sites/default/files/content/Wedy-2017-10-Climate-Legislation-and-Litigation-in-Brazil.pdf>> accessed 10 June 2020.
- Weiss A, 'The essence of strategic litigation' in Graser A and Helmrich C (eds), *Strategic litigation: Begriff und Praxis* (1st edn, Nomos 2019).
- Wilensky M, 'Climate change in the courts: An assessment of non-U.S. climate litigation' (2015) 26 *DELPF* 131.

Cases

Argentina

- Mapuche Confederation of Neuquén v YPF et al.* Mapuche Confederation, 'Mapuche Confederation of Neuquén v YPF et al. – Complaint' (2018) <<http://climatecasechart.com/non-us-case/mapuche-confederation-of-neuquen-v-ypf-et-al/>> accessed 5 June 2020. *Mapuche Confederation of Neuquén v YPF et al. – Case Summary* (Pending) (2018) SCCC.

Mareike Rumpf

Australia

Abrahams v Commonwealth Bank of Australia - Case Summary (2017) VID879/2017 SCCC (Federal Court of Australia).

ACCC v De Longhi Australia Pty Ltd (2008) MR 112/08.

ACCC v Global Green Plan Ltd (2010) FCA 1057.

ACCC v GM Holden Ltd (2008) MR 008/08.

ACCC v Goodyear Tyres (2008) M181/08.

ACCC v Prime Carbon Ltd (2010) NR043/10.

ACCC v V8 Supercars Australia Pty Ltd (2008) MR 265/08.

Friends of the earth Australia, 'Australian bush fire victims v ANZ Bank: Complaint to the OECD National Contact Point Australia' (30 Jan 2020) <https://complaints.oecdwatch.org/cases/Case_564> accessed 10 June 2020.

Gloucester Resources Limited v Minister for Planning (2019) NSWLEC 7, (2017).

Mc Veigh v Retail Employees Superannuation Trust – Case Summary (Pending) FCA 14, (2019) GRICC.

Youth Verdict v Waratah Coal – Case Summary (Pending) (2020) SCCC (Queensland Land Court).

Austria

In re Vienna-Schwechat Airport Expansion (2017) W109 2000179-1/291E (Austrian Constitutional Court).

Brazil

Federal Environmental Agency (IBAMA) v Siderúrgica Sao Luiz Ltd and Martins – Case Summary (Pending) 1010603–35.2019.4.01.3800, (2019) SCCC (15th Civil Federal Court).

Public Prosecutor's Office v H Carlos Schneider S/A Comércio e Indústria & Others – Case Summary (2007) Appeal No 650.728-SC, (2007) SCCC (Superior Court of Justice).

Public Prosecutor's Office v Oliveira & Others – Case Summary (2008) 2008/0215494-3 SCCC (Superior Court of Justice).

Sao Paulo Public Prosecutor's Office v United Airlines and Others – Case Summary (2014) Civil Appeal N° 000292010.2014.4.03.9999 SCCC/ GRICC (Regional Federal Court).

Canada

In re Amended and Restated Preliminary Prospectus of Kinder Morgan Canada Ltd's Initial Public Offering – Case Summary (Pending) (2017) GRICC.

Norwegian Climate Network et al. v Statoil (2012) (OECD NCP Norway).

France

Les Amis de la Terre France, 'Manquements Graves à la loi sur le devoir de vigilance – Le cas Total en Ouganda' (2019) <<http://climatecasechart.com/non-us-case/friends-of-the-earth-et-al-v-total/>> accessed 5 June 2020.

Notre Affaire à Tous and Others v Total – Case Summary (Pending) (2019) SCCC (Nanterre District Court); *Notre Affaire à Tous and Others v Total – Complaint* (28 Jan 2020)' <<http://climatecasechart.com/non-us-case/notre-affaire-a-tous-and-others-v-total/>> accessed 5 June 2020; *Notre Affaire à Tous and Others v Total – Formal Notice to comply with the duty of*

Vigilance Law (19 July 2020) (unofficial translation) <<http://climatecasechart.com/non-us-case/notre-affaire-a-tous-and-others-v-total/>> accessed 5 June 2020.

Society for the protection of landscape and aesthetics of France et al. v The Mills of Lohan – Case Summary (2019) GRICC (Administrative Court of Appeal of Nantes).

Germany

Germanwatch v Volkswagen (2007) (OECD NCP Germany).

Lliuya v RWE Plaintiff – Claim (23 November 2015) <<https://germanwatch.org/de/14198>> accessed 2 June 2020; (2016) 2 O 285/15 (District Court Essen); *Lliuya v RWE* (2017) 2 O 285/15 (Higher Regional Court Hamm); Defendant: Statement of Defence – Summary’ (28 April 2016) <<https://germanwatch.org/de/14198>> accessed 5 June 2020; Written Submission – Summary’ (15 November 2016) <<https://germanwatch.org/de/14198>> accessed 5 June 2020; Plaintiff: Written Submission (28 November 2016) <<https://germanwatch.org/de/14198>> accessed 6 June 2020. *Grounds of appeal*’ (23 February 2017) <<https://germanwatch.org/de/14198>> accessed 2 June 2020; response to the appeal – Summary’ (10 July 2017) <<https://germanwatch.org/de/14198>> accessed 3 June 2020.

India

Goa Foundation v M/S Sea Sterlite & Others (2018) 4 SCC 218.

Indonesia

CCC et al. v Adidas (2020) (OECD NCP Germany).

Japan

Citizens’ Committee on the Kobe Coal Fired Power Plant v Kobe Steel ltd et al. – Case Summary (Pending) (2018) SCCC (Kobe District Court).

Market Forces, ‘Market Forces v SMBC, MUFJ and Mizuho: Complaint to the OECD National Contact Point Japan’ (Nov 2016) <<http://climatecasechart.com/non-us-case/market-forces-v-smbc-mufj-and-mizuho/>> accessed 10 June 2020.

Netherlands

BankTrack et al. v ING Bank (2019) (OECD NCP Netherlands). Complaint (08 May 2017) <<http://climatecasechart.com/non-us-case/banktrack-et-al-vs-ing-bank/>> accessed 10 June 2020.

Milieudefensie v Royal Dutch Shell Milieudefensie, ‘The summons of the climate case against Shell summarized in 4 pages’ (unofficial translation) <<http://climatecasechart.com/non-us-case/milieudefensie-et-al-v-royal-dutch-shell-plc>> accessed 1 June 2020; *Milieudefensie et al. v Toyal Dutch Shell plc - Case Summary* (Pending) (2019) SCCC (The Hague District Court); Milieudefensie, ‘Summons: Unofficial Translation of the Dutch Original’ (2019) <http://blogs2.law.columbia.edu/climate-change-litigation/wp-content/uploads/sites/16/non-us-case-documents/2019/20190405_8918_summons.pdf> accessed 15 June 2020.

Urgenda Foundation v State of the Netherlands (2019) ECLI:NL:HR:2019:2007 (Supreme Court of the Netherlands).

New Zealand

Royal Forest and Bird v Buller Coal Ltd (2012) NZHC 2156.

Mareike Rumpf

Smith v Fronterra Co-Operative Group Ltd (2020) NZHC 419.

Nigeria

Gbemre v Shell Petroleum Development Company of Nigeria Ltd and Others (2005) FHC/B/CS/53/05.

Obelle Concern Citizens & FOCONE v Shell (2020) (OECD NCP Netherlands).

Philippines

In re Greenpeace Southeast Asia and Others (Pending) No CHR-NI-2016-0001, (2015) SCCC (Philippine Commission on Human Rights).

Poland

Client Earth v Enea – Case Summary (2019) IX GC 1118/18 SCCC (District Court Poznan).

Client Earth v Polska Grupa Energetyczna – Case Summary (Pending) (2019) SCCC (Regional Court Lodz).

Greenpeace Poland v PGE GiEK – Case Summary (Pending) (2020) SCCC (Regional Court Lodz).

Slovenia

Focus v Ascent Resources plc: Complaint to the OECD National Contact Point UK' (12 November 2019) <https://complaints.oecdwatch.org/cases/Case_555> accessed 10 June 2020.

United Kingdom

CF Partners (UK) LLP v Barclays Bank PLC – Case Summary (2014) EWHC 3049 SCCC.

Deutsche Bank v Global Steel (2012) EWHC 1201 (Comm.).

Global Witness v UK Export Finance: Complaint to the OECD National Contact Point UK' (17 March 2020) <https://complaints.oecdwatch.org/cases/Case_568> accessed 10 June 2020.

United States

Chicago Climate Exchange v Bourse de Montreal (2014) TMOB 78.

Juliana v United States (Pending) 18-36082, (2015) (9th Circuit Court of Appeals).

Native Village of Kivalina v Exxon Mobil Corp (2012) 09-17490 (9th Circuit Court of Appeals).

Part III:

Climate change litigation and enforcement:

Crosscutting issues

Climate change, public interest litigation and the development of renewable energy law in China – based on the analysis of *Friends of Nature v Ningxia Grid Company*

Cao Wei

Abstract

To alleviate the effects of climate change, grid companies in China are obliged to follow the full-purchase system under the country's Renewable Energy Law. Nevertheless, the abandonment of wind and solar resources is a significant problem among these grid companies. In the case of *Friends of Nature v State Grid Gansu Company*, the court's judgment did not extend to prosecution. Litigation and administration solutions are better ways to address this problem.

1 Introduction

The Paris Agreement set the stage for post-2020 global action on climate change, with the main goal of limiting the rise in global average temperatures to no more than 2 degrees Celsius this century and to no more than 1.5 degrees Celsius above pre-industrial levels. As a contracting party, China is obliged to adopt measures to mitigate climate change. One of the measures is to embrace renewable energy, which leads to a conflict between grid companies and acquisitions of renewable energy. We will demonstrate this first by presenting a case and then introducing China's environmental civil public interest litigation and Renewable Energy Law.

2 *Friends of Nature v State Grid Ningxia Company*

Friends of Nature v State Grid Ningxia Company is a famous environmental civil public interest litigation case in China dealing with State Grid Ningxia Company's default on renewable energy acquisitions.¹

Friends of Nature, a well-known non-governmental environmental organisation in China, which was registered in 1994, is the plaintiff in this case. It has over 20,000

1 'Friends of Nature (FoN) sued State grid for refusing to purchase clean energy in Ningxia, China' see <<https://ejatlas.org/print/friends-of-natures-sued-state-grid-unit-for-refusing-to-buy-clean-energy-in-ningxia-china>> accessed 18 January 2022.

members, with three working entities in Beijing and 22 member groups across China. It has traditionally focused on environmental education, publicity and public participation. However, after the new Civil Procedure Law and Environmental Protection Law came into force in 2013 and 2014, respectively, lawsuits are now also within its ambit.

As the defendant, State Grid Ningxia Company is a branch of the State Grid Company, which was founded in 2002. It is a wholly state-owned company, in charge of electricity transmission. In addition, it is one of the Global Fortune 500 companies.

It has been said that the Ningxia region has some of the most abundant wind and solar energy resources in the country. From Yinchuan Airport to the urban area, one can see striking billboards advertising photovoltaic power generation. In Ningdong Town, east of Lingwu City, large wind farms coexist with thermal power bases. However, the National Energy Administration data paint a different picture. From January 1, 2015 to June 30, 2016, Ningxia abandoned 2.79 billion kWh of wind power, amounting to 570 million kWh of electricity. The gap between the electricity that should have been acquired and the actual electricity purchased was filled with coal-fired power generation.

In August 2016, State Grid Ningxia Company did not make full purchases of wind power and photovoltaic power in the province, as it should have done in accordance with the provisions of the Renewable Energy Law. As a result, State Grid Ningxia Company was sued by Friends of Nature for the full purchase of the renewable energy power according to the law and was required to provide compensation for the cost of the ecological and environmental loss caused by the replacement of renewable energy power generation with coal power generation. As such, Friends of Nature claimed 310 million Yuan (about 39 million Euros).

The plaintiff believed that coal-fired power generation, compared with wind power and photovoltaic power generation, produced air pollutants, including sulphur dioxide, nitrogen oxide and a large amount of smoke, which can cause great harm to human health, crops, buildings, and so on. It is the main source of PM2.5 and PM10 in the atmosphere. In addition, coal-fired power generation produces large quantities of greenhouse gases, causing global climate change and negatively impacting the ecological environment. This has seriously damaged the well-being of people in society and thus the company should bear the legal responsibility for environmental tort. In a way, the case could be deemed a climate suit.

Liu Xiang, an attorney for Friends of Nature, told Pengpai News that the grid company was cooperating with the government. The government asked the grid company to acquire more thermal power, which the grid company would implement as directed. The purpose of the lawsuit was to pass on the information to the government through the grid company, so that it could achieve the full acquisition of renewable energy power generation.

Once the case is won, the interests of the grid company are damaged, they will take the initiative to find the government to find a solution. Solve the problem of renewable energy consumption.²

Friends of Nature v State Grid Ningxia Company is still in the trial phase. However, there is a judicial decision on another case. In *Friends of Nature v State Grid Gansu Company*, the Lanzhou Intermediate People's Court of Gansu made a ruling on August 14, 2018, applying environmental civil public interest litigation, in the case between the plaintiff, Friends of Nature, and State Grid Gansu Company. It is believed that the State Grid Gansu Electric Power Co. Ltd., a power grid enterprise that purchases and sells electricity and allocates electricity, is not a power generation enterprise. It does not induce pollution-related or ecological destruction, and therefore it disregarded the prosecution of Friends of Nature. In this case, there were four questions that needed to be considered:

- Is Friends of Nature qualified to embark on litigation?
- Is there a causal relationship between the behaviour of the grid company and the consequences of the damage?
- What kind of responsibility should the grid company take?
- Are there better ways of addressing the abandonment of the wind and solar resources?

To arrive at answers, we need to understand China's environmental civil public interest litigation.

3 The environmental civil public interest litigation of China

Firstly, we have to distinguish between three concepts: private interest litigation, public interest litigation and civil public interest litigation.

The purpose of private interest litigation is to resolve disputes between civil subjects and to safeguard individual interests. The plaintiff in this situation must have a direct interest in the subject matter of the litigation; otherwise, the court will not file a case or dismiss the indictment.

In contrast, the purpose of public interest litigation is to safeguard public interests. The plaintiff in environmental civil public interest litigation need not have a legal interest in the litigation. It is similar to a citizen suit.

Civil public interest litigation is a type of public interest litigation. According to Article 55 of the Civil Procedure Law (modified in 2013), for conduct that pollutes the environment, infringes upon the lawful rights and interests of consumers in gen-

2 Diao Fanchao, 'Environmental groups claim 300 million Yuan in damages for wind and light abandonment, Ningxia power grid: Unable to fully buy' *Pengpai News* (14 April 2018) <https://www.thepaper.cn/newsDetail_forward_2069105> accessed 24 May 2020.

eral or otherwise harms the public interest, an authority or relevant organisation (as prescribed by the law) may bring an action in a people's court. Where the people's procuratorate finds, in performing its functions, any conduct that undermines the protection of the ecological environment and resources, infringes upon consumers' lawful rights and interests in the field of food and drug safety or engages in any other conduct that is damaging to the social interest, it may file a lawsuit with the people's court if there is no authority or organisation (as described above) or the relevant authority or organisation does not file a lawsuit. If the authority or organisation does file a lawsuit, the people's procuratorate may support the filing of such a lawsuit.

Moreover, the environmental civil public interest litigation is specially stipulated in the Environmental Protection Law (modified in 2014). Article 58 shows that for an act that pollutes the environment or causes ecological damage in violation of the public interest, a social organisation that satisfies the following conditions may institute an action in a people's court: firstly, it has been legally registered with the civil affairs department of the people's government at or above the level of a district; secondly, it has specially engaged in environmental protection for the public good for five consecutive years or more without any recorded legal violation.

A people's court shall, according to the law, accept an action instituted by a social organisation that satisfies the provision outlined in the preceding paragraph. A social organisation may not seek any economic benefit from an action that it has instituted.

According to Article 58, Friends of Nature was qualified to bring the case to the court.

4 Renewable energy law in China

The full-purchase system was introduced in 2006 through the implementation of the Renewable Energy Law. Called the 'compulsory grid-connected' system, it requires all renewable energy power to be purchased by grid enterprises or to be connected to a grid. According to Article 14, the relevant electricity grid enterprise shall – by entering into a grid synchronisation agreement with the enterprise that has obtained an administrative licence for using renewable energy (or a report for archival purposes on electricity generation) – purchase the full amount of the synchronised electricity, as covered by its grid, of the project of synchronised electricity generation by using renewable energy, and also provide a synchronisation service for electricity generation by using renewable energy.

The 'full-purchase' system was modified to become the 'full-guarantee purchase' system in 2009. The Renewable Energy Law determines three 'guarantee' measures:

Firstly, relevant state departments determine the annual purchase target of generating capacity and allocate this to each grid enterprise, and also dispatch the minimum purchase target for each grid enterprise.

Secondly, for the access cost and other relevant costs that cannot be recovered in the selling price of electricity, the power grid enterprises may apply to the Renewable Energy Development Fund for subsidies. This article addresses the problem of how to recover the costs of grid connections.

Thirdly, the law requires that ‘power grid enterprises shall strengthen the power grid construction, expand the scope of areas where electricity generated by using renewable energy resources is provided, develop and apply intelligent power grid and energy storage technologies, improve the operation and management of power grids, improve the ability for absorbing electricity generated by using renewable energy resources, and provide services for bringing electricity generated by using renewable energy resources on grid’.

However, wind and solar abandonment is a popular practice. According to the report of the National Energy Administration in February 2021, China’s abandonment of wind power in 2020 amounted to 16.61 billion kWh, which could not meet the requirements of the Renewable Energy Law for a fully guaranteed acquisition system. For example, with reference to the ‘three norths’ with outstanding wind abandonment problems, the wind power disposal rates of the five provinces of Gansu, Xinjiang, Jilin, Inner Mongolia and Heilongjiang exceeded 10%. While the wind curtailment rate in Gansu decreased by 10%, it still reached 33%.

What causes this disjunction between perception and reality?

Firstly, the regions with abundant wind power are generally falling behind in terms of grid construction, with grid construction unable to keep up with the rapid development of wind power generation. Another reason is that the current technology in grid enterprises cannot guarantee secure grid connections using renewable energy power. Moreover, the investment cycle for grid-connected enterprises is longer, with fewer rewards. These factors cannot be fully attributed to grid companies.

If the grid company fails to guarantee the full purchase of the renewable power, it will compensate the renewable energy generator for any economic loss derived from power that it has not purchased. SERC (the electricity regulatory commission) shall order the grid companies to correct the harm done within a stipulated period. In the event of their refusal to make such a correction, they will be liable for a fine of no more than 200% of the economic loss sustained by the renewable power generation enterprises. However, as the grid company is in an advantageous and powerful position, it is hard to prove the harm that has allegedly been caused. In practice, since the promulgation of the Renewable Energy Law, it has been common for renewable energy power generators not to be able to connect to the grid. However, SERC has in practice not followed up on any case.

With reference again to the case, I support the verdict of the court. Friends of Nature was qualified to bring the suit. While there is no causality between the behaviour of the grid company and the consequences of the damage, the causal chain cannot be extended in the name of environmental public interest.

5 Better ways to address the abandonment of wind and solar resources

Are there any other ways to solve the problem? The abandonment of wind and solar resources can be addressed through litigation or through an administrative solution.

From a legal standpoint, a lawsuit relating to the abandonment of wind and solar resources is more suitable for private interest litigation than for public interest litigation. This is because it is not difficult for the power generation enterprise to prove its economic losses. However, it is not easy for Friends of Nature to prove damage to the environmental public interest. As a result, if Friends of Nature wants to bring a public interest case to the court, it should sue the fire company instead of the grid company. In addition, environmental public administrative interest litigation can be conducted to urge the government to perform its duties. China revised its Organic Law of the People's Procuratorates in 2018 and, according to Article 20(4), people's procuratorates shall execute the powers and functions to file public interest litigation in accordance with the law.

The administrative solution relies on four aspects: reasonable planning, which should not develop too rapidly since the grid network cannot keep pace with the expansion of the renewable energy generation company; the central government's macroeconomic regulation; the regulatory agency's coordination; and financial support and tax incentives. In the case of climate change, the court and common law approach is not always the best choice; an administrative approach might be more suitable for addressing broad-based policy issues.

Bibliography

- Fanchao D, 'Environmental groups claim 300 million Yuan in damages for wind and light abandonment, Ningxia power grid: Unable to fully buy' (*Pengpai News*, 14 April 2018) <https://www.thepaper.cn/newsDetail_forward_2069105> accessed 24 May 2020.
- 'Friends of Nature (FoN) sued State grid for refusing to purchase clean energy in Ningxia, China' <<https://ejatlas.org/print/friends-of-natures-sued-state-grid-unit-for-refusing-to-buy-clean-energy-in-ningxia-china>> accessed 18 January 2022.

Fostering responsibility through compliance mechanisms

Birgit Hollaus

Abstract

The Paris Agreement (PA) has been described as a major leap for humankind. In ensuring treaty parties adapt their behaviour to this treaty, its complex and sophisticated design will present a major challenge. Traditional enforcement instruments are not fully equipped to rise to this (particular) challenge. Instruments of treaty management, however, such as compliance mechanisms, are capable of filling the resulting gap. The contribution argues that the reach of compliance mechanisms extends beyond achieving compliance with treaty norms. Indeed, they have the potential of fostering responsibility for the common goals and objectives of the treaty community. In this spirit, if designed diligently, its compliance mechanism can make a vital contribution to the PA's effectiveness.

1 Introduction

In 2015, delegates of states and the European Union (EU) agreed on a new instrument steering future climate action, the Paris Agreement (PA).¹ Marking a new beginning in international climate policy,² agreement on this treaty was described as a giant leap for humankind.³ Despite a new beginning though, an old challenge will remain: ensuring that treaty parties implement their obligations and comply with them.

Arguably, this challenge of ensuring treaty compliance will be particularly pronounced in the context of the PA: On the one hand, the climate crisis has become more severe to the end that ever more ambitious action is necessary.⁴ On the other, as

1 Paris Agreement (adopted 12 December 2015, entered into force 4 November 2016) UNTC No 54113.

2 See Charlotte Streck, Paul Keenlyside and Moritz von Unger, 'The Paris Agreement: A new beginning' (2016) 13 *Journal for Environmental & Planning Law* 3.

3 John Vidal, Adam Vaughan, Suzanne Goldenberg, Lenore Taylor and Daniel Boffey, 'World leaders hail Paris climate deal as "major leap for mankind"' *The Guardian* (London, 13 December 2015) <www.theguardian.com/environment/2015/dec/13/world-leaders-hail-paris-climate-deal> accessed 15 October 2021.

4 See Lukas Hermville, 'Climate change as a transformative challenge. A new climate policy paradigm?' (2016) 25 *GAIA* 19.

a consequence also of difficult and long negotiations,⁵ the design of the PA presents both sophisticated and complex. In this way, the treaty's design emphasises the known shortcomings of enforcement instruments, thereby limiting their potential for ensuring compliance. Consequently, it is crucial to look beyond enforcement instruments and indeed towards another approach for inducing compliance with the PA. However, even more is necessary than mere conformity of state behaviour to treaty obligations, i.e., compliance. In view of the PA's specifics, it is necessary to foster responsibility for the common goals and objectives of the PA which underly these obligations.

The present contribution argues that treaty management and compliance mechanisms effectuating such management provide a promising avenue in this regard. It thus engages with their purpose and rationale, and demonstrates how compliance mechanisms are capable of filling the gap left by enforcement instruments. In this light, compliance mechanisms are complementing those latter instruments. The contribution then discusses several features of the compliance mechanism as designed under the PA. In doing so, it illustrates how the compliance mechanism under the PA can contribute to the treaty's effectiveness.

2 The Paris Agreement: A giant leap, and a challenge

Negotiations for an instrument steering international climate action after 2020 were held in light of experiences gained with the Kyoto Protocol.⁶ In particular, the Protocol's top-down approach and the somewhat artificial distinction between groups of states had caused frustration.⁷ Accordingly, it became clear that a future instrument would have to be based on a different approach.⁸

The resulting PA is based on a bottom-up approach, meaning that it relies heavily on the ambition of its treaty parties.⁹ In this way, the PA is indeed a giant leap in international climate policy. Its success in addressing a 'major concern of [hu-

5 See Jeffrey McGee and Jens Steffek, 'The Copenhagen turn in global climate governance and the contentious history of differentiation in international law' (2016) 28 *Journal of Environmental Law* 37.

6 Kyoto Protocol to the United Nations Framework Convention on Climate Change (adopted 11 December 1997, entered into force 16 February 2005) 2303 UNTS 162.

7 Annalisa Saravesi, 'The Paris Agreement: An early assessment' (2016) 48 *Environmental Policy and Law* 14, 15.

8 Christina Voigt and Felipe Ferreira, 'Differentiation in the Paris Agreement' (2016) 6 *Climate Law* 58, 63.

9 See Alexander Proelß, 'Klimaschutz im Völkerrecht nach dem Paris Agreement: Durchbruch oder Stillstand?' (2016) *ZfU* 58, 65. More critical Felix Ekardt, 'Das Paris-Abkommen zum globalen Klimaschutz' (2016) *NVwZ* 355, 357.

man]kind'¹⁰ depends, however, on how successfully the necessary ambition can be ensured.¹¹ Enforcement instruments, in view of their scope of application and ultimate rationale, are not quite equipped to fulfil this task. Instruments of treaty management, in contrast, prove more promising.

2.1 The Paris Agreement's sophisticated design

Given the sobering experiences with the Kyoto Protocol, the switch to a bottom-up approach for its successor instrument was described as a 'reasonable gamble'.¹² Indeed, this approach renounces traditional top-down ideas: 'Bottom-up' essentially embodies the idea that treaty parties are much more likely to fulfil self-imposed obligations than obligations imposed *on* them.¹³ Accordingly, the respective treaty framework is less prescriptive to leave treaty parties appropriate scope of manoeuvre.¹⁴ Shared aims and objectives, in turn, are meant to steer the necessary ambition in the interest of the treaty community.¹⁵

The design of the PA and its obligations must be understood in light of its bottom-up approach.¹⁶ Accordingly, the temperature goal of well-below +2°C,¹⁷ and the

10 Resolution of the General Assembly 43/53, regarding the protection of global climate for present and future generations of mankind (6 December 1998) UN Doc A/RES/43/53. See further, Friedrich Soltau, 'Common concern of humankind' in Cinnamon P Carlane, Kevin R Gray and Richard G Tarasofsky (eds), *The Oxford handbook of international climate change law* (Oxford University Press 2016) 202.

11 Of course, the effectiveness of an international agreement, understood as its capability of achieving its objective, must not be equated with compliance only. Compliance is still one of the essential elements permitting to assess the effectiveness of an international agreement. See for the PA, Vegard H Tørstad, 'Participation, ambition and compliance: Can the Paris Agreement solve the effectiveness trilemma?' (2020) 29 *Environmental Politics* 761.

12 Meinhard Doelle, 'The Paris Agreement: Historic breakthrough or high stakes experiment?' (2016) 6 *Climate Law* 1, 20. On the need for such an approach, Richard B Stewart, Michael Oppenheimer and Bryce Rudyk, 'Building a more effective global climate regime through a bottom-up approach' (2013) 14 *Theoretical Inquiries in Law* 273, 276ff.

13 Doelle (n 12) 3. Note also Louis Henkin's assertion that 'every nation's foreign policy depends substantially (...) on (...) the expectation that it will live up to international (...) obligations', Louis Henkin, *How nations behave* (2nd edn, Columbia University Press 1974) 52. Generally, for the role of reputation, and specifically a reputation for compliance, in international relations, Jana von Stein, 'The engines of compliance' in Jeffrey Dunoff and Mark Pollack (eds), *Interdisciplinary perspectives on international law and international relations: The state of the art* (Cambridge University Press 2013) 477, 481f.

14 Annalisa Savaresi and Francesco Sindico, 'The role of law in a bottom-up international climate governance architecture: Early reflections on the Paris Agreement' (2016) 26 *QIL Zoom-in* 1, 2.

15 Doelle (n 12) 4, 16.

16 See Proelß (n 9) 64f.

17 Paris Agreement, Article 2(1)(a).

aspiration for carbon-neutrality after 2050 set the overall framework for substantive climate action.¹⁸ Under this framework, treaty parties are required to prepare, communicate and maintain their nationally-determined climate contributions (NDCs).¹⁹ The quality of these NDCs is not determined by the treaty.²⁰ Rather, it is within the individual responsibility of each party to design its NDC in the spirit of the common goals and objectives.²¹ While the PA requires those NDCs to be ambitious and to progress in their ambition,²² it does not define such ambition in a normative way; after all, ambition is also dependent on the specifics of a treaty party.²³

Effectively, the PA relies heavily on procedural obligations to ensure ambitious climate action.²⁴ Conversely, substantive requirements for climate action are rather expressed by means of expectations or aspirations.²⁵ These expectations and aspirations aim to inform the required action by treaty parties.²⁶ It is thus necessary to foster responsibility also for these expectations and aspirations in order to steer ambitious climate action.²⁷

18 Paris Agreement, Article 4(1). In the qualification as an aspiration and therefore non-obligations, see Lavanya Rajamani, 'The 2015 Paris Agreement: Interplay between hard, soft and non-obligations' (2016) 28 *Journal of Environmental Law* 337, 345. Distinguishing these objectives from collective obligations, Alexander Zahar, 'Collective obligation and individual ambition in the Paris Agreement' (2020) 9 *Transnational Environmental Law* 165.

19 Paris Agreement, Article 4(1).

20 According to Article 4(4) Paris Agreement, developed countries should undertake economy-wide absolute emission reduction targets as part of their NDCs. However, this requirement can only be understood encouraging state to do so ('should') rather than constituting an obligation.

21 See further Benoit Mayer, 'Interpreting states' general obligations on climate change mitigation: A methodological review' (2019) 27 *RECIEL* 107, 112ff.

22 Paris Agreement, Article 3.

23 Christina Voigt, 'The Paris Agreement: What is the standard of conduct for parties?' (2016) 26 *QIL Zoom-in* 17, 24ff.

24 See Jonathan Pickering et al., 'Global climate governance between hard and soft law: Can the Paris Agreement's 'crème brûlée' approach enhance ecological reflexivity?' (2019) 31 *Journal of Environmental Law* 1, 13f. See further, also touching on the implementation phase, Johannes Saurer, 'Verfahrensregeln im internationalen Klimaschutzrecht. Bedeutung und Entwicklung von der Klimarahmenkonvention bis zum Rulebook zum Pariser Abkommen' (2019) 41 *NuR* 145, 148ff.

25 Note Ralph Bodle, Lena Donat and Matthias Duwe, 'The Paris Agreement: Analysis, assessment and outlook' (2016) 10 *Carbon & Climate Law Review* 5, 9.

26 Nuanced with a focus on NDCs, Benoit Mayer, 'International law obligations arising in relation to nationally determined contributions' (2018) 7 *Transnational Environmental Law* 251. On the purpose of the review mechanism in this context, see Manjana Milkoreit and Kate Haapala, 'The global stocktake: Design lessons for a new review and ambition mechanism in the international climate regime' (2019) 19 *International Environmental Agreements* 89, 92ff.

27 See Steinar Andresen, 'The Paris Agreement and its Rulebook in a problem-solving perspective' (2019) 9 *Climate Law* 122, 133.

2.2 How to induce compliance with the Paris Agreement

The PA is thus marked by a mix of hard, soft and even non-obligations. Together, all these types of obligations are designed to contribute to the agreement's objectives. Therefore, it is essential that parties deliver on all of them, whether legally binding or not. Ensuring that parties do that, however, is a challenge. While the traditional enforcement approach and its instruments are not entirely equipped to meet this challenge, treaty management appears to be.

2.2.1 The traditional approach: Treaty enforcement

Long-time, a rationalist understanding dominated the domain of international relations and the role of international law within them. In this understanding, states would only make international treaties where it was in their own rational interest.²⁸ Equally, following a treaty's conclusion, treaty parties would adapt their behaviour to treaty obligations only where it matched their interests.²⁹ Thus, where non-compliance was more favourable, they would choose not to observe their obligations.³⁰ Therefore, to prevent such course of action, non-compliance would ultimately have to appear less favourable than compliance.

Within this logic, enforcement instruments present a traditional solution to this problem. These instruments are designed to sanction non-compliant behaviour and thereby raise the costs of such behaviour.³¹ Crucially though, the costs of non-compliant behaviour must be high enough to incentivise treaty parties to adapt their behaviour. Thus, typically, the higher the level of necessary adaption of state behaviour, the higher the costs of non-compliance must be.³²

With its inherent call for ambition,³³ the PA is undeniably a case for a treaty which requires quite extensive changes to state behaviour. As a result, enforcement instru-

28 See Andrew T Guzman, *How international law works: A rational choice theory* (Oxford University Press 2008) 121ff.

29 Carmela Lutmar and Cristiane L Carneiro, 'Compliance in international relations', *Oxford Research Encyclopedia of Politics* (2018) 3 <<https://doi.org/10.1093/acrefore/9780190228637.013.576>> accessed 13 March 2022.

30 See Harold Hongju Koh, 'Why do nations obey international law?' (1997) 106 *The Yale Law Journal* 2599, 2602.

31 Tseming Yang, 'International treaty enforcement as a public good: Institutional deterrent sanctions in international environmental agreements' (2006) 27 *Michigan Journal of International Law* 1131, 1150.

32 See George W Downs, David M Roche and Peter N Barsoom, 'Is the good news about compliance good news about cooperation?' (1996) 50 *International Organization* 379, 383f.

33 See e.g., the Report of 18 April 2019 on the 2018 stocktake on pre-2020 implementation and ambition, FCCC/CP/2019/2, para 9.

ments would have to raise the costs of non-compliance significantly in order to steer state behaviour. Its specific design, however, requires these costs to rise even more:

The PA is a typical case for a treaty which includes obligations owed to the community of treaty parties (*erga omnes partes* obligations).³⁴ In requiring states to fulfil their obligations even when others disregard them,³⁵ these obligations arguably lack an essential incentive for compliance.³⁶ Accordingly, enforcement instruments would have to raise the costs of non-compliance enough to compensate for that lacking incentive. However, the instruments available – the law of state responsibility and liability, and treaty-based dispute settlement – are not capable of doing so.

In view of *erga omnes partes* obligations, the available enforcement instruments encounter difficulties already at the outset. As these obligations are owed equally to all treaty parties, it proves difficult to establish which state is entitled to rely on them.³⁷ These difficulties are furthered by requirements for a proof of causality between (in)action and damage,³⁸ and the need for actual damage.³⁹ Particularly in view of damage to the climate system and environmental damage caused as a result, both appears more than difficult.⁴⁰

Some of these shortcomings can perhaps be overcome.⁴¹ Yet, the recourse to enforcement instruments still remains unsatisfactory. Successfully invoked, enforcement instruments mainly entitle to financial or non-financial reparation, the latter in the form of compensatory measures. The possibility of either is questionable in the

34 See for an analysis of other cases, Antonio Cardesa-Salzmann, 'Constitutionalising secondary rules in global environmental regimes: Non-compliance procedures and the enforcement of multilateral environmental agreements' (2011) 24 *Journal of Environmental Law* 103, 108ff.

35 Maas M Goote, 'Non-compliance procedures in international environmental law: The middle way between diplomacy and law' (1999) 1 *International Law Forum Du Droit International* 82, 83f.

36 Winfried Lang, 'Compliance control in international environmental law: Institutional necessities' (1996) *ZaöRV* 685, 685.

37 See Alan Boyle, 'Saving the World? Implementation and enforcement of international environmental law through international institutions' (1991) 3 *Journal of Environmental Law* 229, 230.

38 Martti Koskenniemi, 'Breach of treaty or non-compliance? Reflections on the enforcement of the Montreal Protocol' (1992) 3 *Yearbook of International Environmental Law* 123, 126.

39 See Robert K Omura, 'Chasing Hamlet's ghost: State responsibility and the use of countermeasures to compel compliance with multilateral environmental agreements' (2010) 15 *Appeal: Review of Current Law and Law Reform* 86, 101f.

40 See the contribution by Monika Hinteregger in this volume. On the notion of 'borderless' climate change impacts and its challenges for governance systems, see Magnus Benzie and Åsa Persson, 'Governing borderless climate risks: Moving beyond the territorial framing of adaptation' (2019) 19 *International Environmental Agreements* 369.

41 See Alan Boyle and Catherine Redgwell, *Birnie, Boyle and Redgwell's international law & the environment* (4th edn, Oxford University Press 2021) 234. Note also the contributions in this volume by Kirsten Schmalenbach, Oliver Dörr and Erika Wagner.

context of environmental damage.⁴² Ultimately though, neither is even desirable as the aim is to *prevent* environmental damage, and further damage to the climate system.⁴³ The reactive rather than proactive nature of the available enforcement instruments is thus not matching the approach of the PA.⁴⁴

In the specific context of the PA, another shortcoming of enforcement instruments is equally significant. Enforcement instruments are designed with hard, legally binding obligations in mind.⁴⁵ Since a state is not required to observe a non-binding rule, it cannot be violated so as to affect another state's legal position. Consequently, a non-binding rule cannot serve as the basis for invoking the main enforcement instruments.⁴⁶ Therefore, these instruments cannot incentivise compliance with soft and non-obligations.⁴⁷ As highlighted though,⁴⁸ the observance and implementation of soft and non-obligations is equally important in view of the PA's objectives.

When applied to multilateral environmental agreements (MEAs),⁴⁹ and the specific context of the PA, enforcement instruments therefore clearly suffer from several shortcomings. In this way, not capable of ensuring states fulfil their commitments, they ultimately leave a responsibility gap.⁵⁰ Filling this gap, however, is crucial in order to ensure achieving the Paris goals.

2.3 The alternative approach: Treaty management

The managerial approach to compliance challenges the basic assumption underlying the enforcement approach. Its pioneers, Chayes and Chayes, argued that states would already enter their treaty relations with a propensity to comply. After all, states

42 Pierre-Marie Dupuy and Jorge E Viñuales, *International environmental law* (2nd edn, Cambridge University Press 2018) 323f.

43 See Fitzmaurice and Redgwell (n 50) 41.

44 See Boyle (n 37) 230.

45 Note though in relation to legally binding obligations of conduct, Mayer (n 21) 138f.

46 See Koskenniemi (n 38) 145.

47 Similar problems are highlighted in view of result-oriented and action-oriented treaty obligations, Ulrich Beyerlin, Peter-Tobias Stoll and Rüdiger Wolfrum, 'Conclusions drawn from the Conference on ensuring compliance with MEAs' in Ulrich Beyerlin, Peter-Tobias Stoll and Rüdiger Wolfrum (eds), *Ensuring compliance with multilateral environmental agreements. A dialogue between practitioners and academia* (Brill | Nijhoff 2006) 359, 361.

48 See above, section 2.1.

49 Boyle (n 37) 230.

50 Malgosia Fitzmaurice and Catherine Redgwell, 'Environmental non-compliance procedures and international law' (2000) 31 *Netherlands Yearbook of International Law* 35, 37.

would simply need to participate in treaty relations to persist in this increasingly interwoven world.⁵¹

As a result of this propensity to comply, non-compliance could not be a wilful act of treaty parties.⁵² Much rather, it was a consequence of different factors relating to the treaty design and the specific circumstances of a state party. Amongst the factors identified by Chayes and Chayes were the ambiguity and indeterminacy of treaties but also capacity problems and changing circumstances in a state.⁵³

The explanatory power of this alternative problem structure may of course be challenged.⁵⁴ Prominently, Downs et al.⁵⁵ did so by arguing that Chayes and Chayes had merely studied treaties which require shallow cooperation. States would be much more likely to sign on to these types of treaties as they required less adaptation of state behaviour, if any at all.⁵⁶ Accordingly, compliance with these types of treaties is to be expected. The situation, however, would be entirely different with treaties requiring deep cooperation where calculated interests dictate any adaptation of state behaviour.⁵⁷

Undoubtedly, in light of its objectives, the PA is indeed a treaty which requires states to adapt their behaviour significantly.⁵⁸ Interests thus surely play a role for compliance under this international agreement.⁵⁹ Nevertheless, the insights provided by the management school continue to be highly relevant:⁶⁰

First, a recent analysis found uncontrollable social or economic changes to provide a convincing explanation for non-compliance under a treaty.⁶¹ Undeniably, such changes would also impact on states' capacities to implement and maintain climate action; a fact that the recent pandemic has shown all too clearly. Second, the PA's

51 Abram Chayes, Antonia Handler Chayes and Ronald Mitchell, 'Active compliance management in environmental treaties' in Winfried Lang (ed), *Sustainable development and international law* (Graham & Trotman | Kluwer 1995) 75, 75.

52 Abram Chayes and Antonia Handler Chayes, 'On compliance' (1993) 47 *International Organization* 175, 188.

53 *Ibid* 179.

54 Summarising Kal Raustiala and Anne-Marie Slaughter, 'International law, international relations and compliance' in Walter Carlsnaes, Thomas Risse and Beth A Simmons (eds), *Handbook of international relations* (SAGE 2002) 538, 545.

55 Downs et al. (n 32) 380 'selection problems'.

56 *Ibid* 399.

57 See *ibid* 388.

58 See already above, section 2.2.1.

59 Pointing to the (domestic) actors also shaping such interests, Peter van den Bossche, 'In search of remedies for non-compliance: The experience of the European Community' (1996) 3 *Maas-tricht Journal of European and Comparative Law* 371, 378.

60 Note Jutta Brunnée, 'The Kyoto Protocol: Testing ground for compliance theories?' (2003) *ZaöRV* 255, 260f, highlighting the interest-based rationale Chayes and Chayes employ.

61 Andreas Kokkvoll Tveit, 'Can the management school explain noncompliance with international environmental agreements?' (2018) 18 *International Environmental Agreements* 491, 506.

reliance on hard, soft and non-obligations may lead to different understandings of what parties actually owe.⁶² Non-compliance as a result of any ambiguities would then indeed not be a wilful act. Yet, it would still need to be resolved.

As Chayes and Chayes argued, for addressing these reasons underlying non-compliance, enforcement instruments are not helpful.⁶³ In addition, these instruments would not be adequate as a response to any type of non-compliance, particularly as non-compliance was not binary.⁶⁴ Therefore, these problems ought to be addressed differently, prompting Chayes and Chayes to propose a shift towards treaty management.

Chayes and Chayes imagine treaty management with three different elements in mind:⁶⁵ First, mechanisms for capacity-building. Second, mechanisms for dispute settlement and dispute avoidance. Third, mechanisms to allow for the change and adaptation of treaty norms, thereby ensuring the continued relevance of the treaty. These elements of treaty management should together be designed to verify whether a treaty party complies with the treaty.⁶⁶ The idea is to achieve a level of 'appropriate compliance' rather than full compliance.⁶⁷ Such a level would have to be high enough to still allow for the functioning and the credibility of the treaty. In Chayes and Chayes' view, the competence to determine this level of compliance would best be placed within a dedicated institution.⁶⁸

Significantly, and contrary to the enforcement approach, treaty management would be based on a dialogue amongst treaty institutions and parties.⁶⁹ The immediate aim of this inclusive and cooperative dialogue was to identify the reasons for non-compliance and find suitable solutions. Yet, ultimately, the resulting 'justificatory discourse'⁷⁰ would have a more far-reaching impact: it would create a common language and, over time, a common interest which influence state behaviour towards compliance.

Quite rightly, Koh stressed that this discourse can only partly explain why states ultimately comply with the resulting norms; their domestic internalisation was equally relevant.⁷¹ Chayes and Chayes, however, had failed to take the crucial role of

62 See Winfried Lang, 'Diplomacy and international environmental law-making: Some observations' (1992) *Yearbook of International Environmental Law* 108, 115.

63 Chayes and Chayes (n 52) 178.

64 *Ibid* 198.

65 Abram Chayes and Antonia Handler Chayes, *The new sovereignty* (Harvard University Press 1995) 197ff.

66 *Ibid* 228.

67 See Chayes and Chayes (n 52) 198. Note, in this context, Martti Koskenniemi, 'Miserable Comforters: International Relations as New Natural Law' (2009) 15 *European Journal of International Relations* 395, 406 who criticises the 'managerial vocabulary'.

68 Chayes and Chayes (n 52) 202.

69 *Ibid* 230f.

70 Chayes and Chayes (n 65) 26.

71 Koh (n 30) 2634.

social, political, and legal internalisation of international rules into account. However, Koh, in turn, failed to explain why and how international rules are internalised.⁷²

Despite his critique, also Koh accepts the importance of continued social interaction of states for their compliance.⁷³ In doing so, he highlights how the legitimacy of the managerial approach ultimately depends on both procedural and substantive fairness: the first refers to the equal and non-discriminatory application of the process, the latter to the fairness and equity of the rules being applied.⁷⁴ Only where the discourse is based on such a fair process, the resulting norms induce a sense of obligation to comply with them.⁷⁵ As a consequence, compliance would be judged simply the appropriate behaviour under the treaty.⁷⁶ In this manner, the justificatory discourse can create benefits and advantages beyond the normative. For the present purpose, it has the crucial potential of creating a sense of responsibility for other than legally binding obligations.

3 The PA's compliance mechanism: Another giant leap?

The managerial approach and its idea of active treaty management underly the general development of compliance mechanisms in MEAs.⁷⁷ Within a rather short period of time, these mechanisms have become 'a sort of 'must'' in these treaties.⁷⁸ As such, they seek to complement enforcement instruments and thereby close the gap these instruments leave.⁷⁹

72 Andrew T Guzman, 'A compliance-based theory of international law' (2002) 90 *California Law Review* 1823, 1845.

73 Koh (n 30) 2656.

74 Ibid 2641.

75 Jutta Brunnée, 'Compliance control' in Geir Ulfstein, Thilo Marauhn and Andreas Zimmerman (eds), *Making treaties work. Human rights, environment and arms control* (Cambridge University Press 2007) 373, 373. See, however, Günther Handl, 'International "lawmaking" by conferences of the parties and other politically mandated bodies' in Rüdiger Wolfrum and Volker Röben (eds), *Developments of international law in treaty making* (Springer 2005) 125, 138.

76 Asher Alkoby, 'Non-state actors and the legitimacy of international environmental law' (2003) 3 *Non-State Actors and International Law* 23, 81.

77 Brunnée (n 75) 380.

78 Attila Tanzi and Cesare Pitea, 'Non-compliance mechanisms: Lessons learned and the way forward' in Tullio Treves et al. (eds), *Non-compliance procedures and mechanisms and the effectiveness of international environmental agreements* (Springer 2009) 569, 569.

79 Sebastian Oberthür, 'Options for a compliance mechanism in a 2015 climate agreement' (2014) 4 *Climate Law* 30, 33.

In this vein, it is not too surprising that the PA also provides for a compliance mechanism.⁸⁰ While the treaty defines certain basic features of this mechanism, details were left to subsequent decision-making by the parties.⁸¹ Though this decision-making is not yet finalised, certain features have already been agreed or finally rejected. In light of general developments across compliance mechanisms, it can thus be discussed how the PA's compliance mechanisms seeks to contribute to the treaty's effectiveness.

3.1 General purpose and common features

While compliance mechanisms can include different elements,⁸² they commonly all include a non-compliance procedure.⁸³ The purpose of this procedure is to support and assist parties in order to prevent and (again) achieve compliance. In doing so, ideally, disputes amongst parties as well as environmental harm are avoided in the first place.

Incorporating the cooperative spirit of international relations,⁸⁴ non-compliance procedures are designed as non-confrontational, non-judicial and non-discriminatory but inclusive processes.⁸⁵ Accordingly, these procedures are not designed to determine or attribute international responsibility, or to decide on a breach of treaty.⁸⁶ Rather, they aim at engaging parties in a dialogue to identify and solve past and possible future problems of compliance.⁸⁷ Such a dialogue permits to take into account

80 Noting though how the inclusion was a 'significant achievement' given the opposition to any sort of compliance management, Christina Voigt, 'The compliance and implementation mechanism of the Paris Agreement' (2016) 25 *RECIEL* 161, 164.

81 Oberthür (n 79) 49.

82 See Malgosia Fitzmaurice, 'Environmental compliance control', *The Max Planck Encyclopedia of Public International Law III* (2012) 541, 545.

83 For the sake of simplification, the following thus uses the terms 'compliance mechanism' and 'non-compliance procedure' interchangeably.

84 Geir Ulfstein, 'Treaty bodies and regimes' in Duncan B Hollis (ed), *The Oxford guide to treaties* (Oxford University Press 2012) 428, 439.

85 Tim Enderlin, 'Alpine Convention: A different compliance mechanism' (2003) 33 *Environmental Policy and Law* 155, 156.

86 Antonino Ali, 'The EU and the compliance mechanisms of multilateral environmental agreements: The case of the Aarhus Convention' in Elisa Morgera (ed), *The external environmental policy of the European Union* (Cambridge University Press 2012) 287, 302.

87 See Jutta Brunnée, 'Enforcement mechanisms in international law and international environmental law' in Ulrich Beyerlin, Peter-Tobias Stoll and Rüdiger Wolfrum (eds), *Ensuring compliance with multilateral environmental agreements. A dialogue between practitioners and academia* (Brill | Nijhoff 2006) 1, 18.

the specific circumstances and challenges of a treaty party.⁸⁸ In this manner, the process seeks to build trust amongst treaty parties and thereby stabilises the treaty system.⁸⁹

By ensuring compliance is being kept ‘within reasonable bounds’,⁹⁰ the procedure sets out to contribute to the effectiveness of a treaty.⁹¹ In this context, the concept of compliance is a broad and inclusive one,⁹² not limited to the notion of a violation of a treaty obligation.⁹³ Rather, as noted by Bodansky, these mechanisms view compliance and non-compliance as part of a continuum, in which the difference between compliance and breach becomes less significant.⁹⁴ In this light, such procedures are capable of responding to situations for which enforcement instruments are not designed.⁹⁵

Ultimately, it is within the power of treaty parties to decide what obligations of the treaty they subject to non-compliance procedures.⁹⁶ Therefore, these procedures can also be applied to other than legally binding obligations. Nevertheless, it has been noted that in relation to soft obligations, generally, the effectiveness of compliance mechanisms requires nuanced assessment.⁹⁷

While compliance mechanisms are tailored to the specific needs of a treaty,⁹⁸ their development is still marked by several common features. Notably, what can be observed, is an increased institutionalisation of these processes.⁹⁹ Indeed, more recently, compliance matters have increasingly been assigned to specifically-established, treaty-based institutions (‘compliance body’).¹⁰⁰ It is this body which establishes facts and assesses a possible situation of non-compliance.¹⁰¹

88 Illustrative, Laura Pineschi, ‘Non-compliance mechanisms and the proposed center for the prevention and management of environmental dispute’ (2004) 20 *Anuario de Derecho Internacional* 241, 247.

89 See Oberthür (n 79) 33.

90 Dupuy and Viñuales (n 42) 344.

91 Lang (n 36) 695.

92 Farhana Yamin and Joanna Depledge, *The international climate change regime: A guide to rules, institutions and procedures* (Cambridge University Press 2004) 380.

93 See Lang (n 36) 693.

94 Daniel Bodansky, *The art and craft of international environmental law* (Harvard University Press 2010) 248.

95 Gerhard Loibl, ‘Compliance procedures and mechanisms’ in Malgosia Fitzmaurice, David M Ong and Panos Merkouris (eds), *Research handbook on international environmental law* (Edward Elgar 2010) 426, 442.

96 See Jutta Brunnée, ‘Environment, multilateral agreements’, *The Max Planck Encyclopedia of Public International Law III* (2012) 484, 496.

97 Peter Lawrence and Daryl Wong, ‘Soft law in the Paris Climate Agreement: Strength or weakness?’ (2017) 26 *RECIEL* 276, 281.

98 Loibl (n 95) 428.

99 See Birnie, Boyle and Redgwell (n 41) 239, 242.

100 Peter G G Davies, ‘Non-Compliance – a Pivotal or secondary function of CoP governance?’ (2013) 15 *International Community Law Review* 77, 78.

101 Brunnée (n 75) 380.

The main political body of a treaty, the Conference or Meeting of the Parties (CoP or MoP), retains final decision-making powers on compliance matters.¹⁰² The normative quality, if any, of the findings on non-compliance is still disputed.¹⁰³ Yet, independent of this uncertainty, observers stress that there appears to be general political willingness to accept such findings.¹⁰⁴

Moreover, it has been highlighted that, over time, compliance mechanisms have become more judicialised. Indeed, such a development was noted in view of different procedural aspects of the compliance mechanism of the Kyoto Protocol,¹⁰⁵ the PA's predecessor.¹⁰⁶ The respective aspects included amongst others rules on conflict of interests, and, significantly, a right to appeal.¹⁰⁷

For the institutions governing non-compliance procedures, no such judicialisation was argued in general.¹⁰⁸ Nevertheless, members of compliance bodies are growingly required to also dispose of legal expertise.¹⁰⁹ At the same time, they often exercise their function independently of their state governments. Yet, neither do these aspects amount to the typical judicial guarantees, nor is there a case of a compliance body

102 Dupuy and Viñuales (n 42) 350 'necessary feature'.

103 See Laurens Ankersmit, 'An incoherent approach towards Aarhus and CETA: The Commission and external oversight mechanisms' in Inge Govaere and Sacha Garben (eds), *The interface between EU and international law* (Hart Publishing 2019) 321, 321f. Highlighting how even parties to treaties which establish non-compliance procedures have different views on the subject, Xueman Wang and Glenn Wiser, 'The implementation and compliance regimes under the Climate Change Convention and its Kyoto Protocol' (2002) 11 RECIEL 181, 197f.

104 See Peter H Sand, 'The role of environmental agreements' Conferences of the Parties' in Yann Kerbrat and Sandrine Maljean-Dubois (eds), *The transformation of international environmental law* (Editions A. Pedone and Hart Publishing 2011) 89, 92.

105 See e.g., Sebastian Oberthür and René Lefeber, 'Holding countries to account: The Kyoto Protocol's compliance system revisited after four years of experience' (2010) 1 *Climate Law* 133, 140f; Loibl (n 95) 442; Yamin and Depledge (n 92) 386; Philippe Sands, 'Non-compliance and dispute settlement' in Ulrich Beyerlin, Peter-Tobias Stoll and Rüdiger Wolfrum (eds), *Ensuring compliance with multilateral environmental agreements. A Dialogue between practitioners and academia* (Brill | Nijhoff 2006) 353, 357.

106 Further on the distinctive design of the compliance mechanism under the Kyoto Protocol, Meinhard Doelle, 'Compliance and enforcement in the climate change regime' in Erkki J Hollo, Kati Kulovesi and Michael Mehling (eds), *Climate change and the law* (Springer 2013) 165, 170ff. For an evaluation of this mechanism, Sebastian Oberthür, 'Compliance under the evolving climate change regime' in Cinnamon P Carlarne, Kevin R Gray and Richard G Tarasofsky (eds), *The Oxford handbook of international climate change law* (Oxford University Press 2016) 120.

107 Jan Klabbers, 'Compliance procedures' in Daniel Bodansky, Jutta Brunnée and Ellen Hey (eds), *The Oxford handbook of international environmental law* (Oxford University Press 2007) 995, 999.

108 Note though Lang (n 36) 687.

109 Alessandro Fodella, 'Structural and institutional aspects of non-compliance mechanisms' in Tullio Treves et al. (eds), *Non-compliance procedures and mechanisms and the effectiveness of international environmental agreements* (Springer 2009) 355, 369.

comprised of lawyers only.¹¹⁰ Based on the function these bodies exercise though, it may very well be possible to compare them to quasi-judicial bodies.¹¹¹

3.2 The design of the PA's compliance mechanism¹¹²

The PA's compliance mechanism is established by Article 15.¹¹³ In line with well-known practice though,¹¹⁴ decision-making on the details of the mechanisms were left to the treaty parties. To assist in this decision-making, an Ad hoc Working Group was mandated to develop the necessary modalities and procedures.¹¹⁵

In December 2018, the parties to the PA, represented in the CMA,¹¹⁶ agreed on the respective modalities and procedures.¹¹⁷ However, in their decision, the parties also set deadlines for further work to be undertaken. In particular, it mandated the future

110 In practice, this is the case for the compliance committee under the Aarhus Convention, Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (adopted 25 June 1998, entered into force 30 October 2001) 2161 UNTS 447. However, this is not mandated by the treaty or subsequent treaty-based decisions-making, see Decision I/7, para 1f. Rather, it can be understood as a logical necessity of the treaty as it constitutes a procedural treaty, thus mainly raising legal questions.

111 See Beyerlin, Stoll and Wolfrum (n 47) 366. For the Implementation Committee of the Montreal Protocol in view of its function, Feja Lesniewska, 'Filling the holes: The Montreal Protocol's non-compliance mechanism' in Malgosia Fitzmaurice, David M Ong and Panos Merkouris (eds), *Research handbook on international environmental law* (Edward Elgar 2010) 471, 479. Also, with reference to the function but also the composition of the body, Veit Koester, 'The Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (Aarhus Convention)' in Geir Ulfstein, Thilo Marauhn and Andreas Zimmerman (eds), *Making treaties work. Human rights, environment and arms control* (Cambridge University Press 2007) 179, 204. Rejecting a quasi-judicial function of the CoP, Enrico Milano, 'The outcomes of the procedure and their legal effects' in Tullio Treves et al. (eds), *Non-compliance procedures and mechanisms and the effectiveness of international environmental agreements* (Springer 2009) 407, 408.

112 The following section was updated since the presentation of the paper at the conference in November 2018. It now reflects the state of affairs as of September 2021.

113 Insightful on the negotiation history of the mechanism, Voigt (n 80) 162ff.

114 Oberthür (n 79) 49.

115 Decision I/CP.21, Adoption of the Paris Agreement, FCCC/CP/2015/10/Add.1, para 103. The work of the Ad Hoc Working Group on the Paris Agreement in relation to the compliance mechanism (item 7) is available at United Nations Framework Convention on Climate Change, 'Information on APA item 7' <<https://unfccc.int/process/bodies/subsidiary-bodies/ad-hoc-working-group-on-the-paris-agreement-apa/information-on-apa-agenda-item-7>> accessed 15 October 2021.

116 Conference of the Parties serving as the Meeting of the Parties to the Paris Agreement, PA, Article 16(1).

117 Decision 20/CMA.1, Modalities and procedures for the effective operation of the committee to facilitate implementation and promote compliance referred to in Article 15, paragraph 2, of the Paris Agreement, FCCC/PA/CMA/2018/3/Add.2.

compliance committee,¹¹⁸ subsequently elected in 2019,¹¹⁹ to develop the rules of procedure to be applied in the process.¹²⁰ These rules were scheduled to be adopted at CMA 3, in 2020.¹²¹

However, recent events have required changes to the respective timeline: In view of the Covid-pandemic, the compliance committee could only hold two virtual meetings in 2020, impacting on the progression of the development of its rules of procedure.¹²² At the end of the second meeting, in October 2020, the committee had managed to agree on a list of possible elements for their rules of procedure, yet their finalising had to be postponed to 2021;¹²³ the start of the PA's operation. With decision-making on the PA's compliance mechanisms expected for CMA 3 in November 2021,¹²⁴ at the time of writing, certain features of the compliance mechanism are thus not finalised;¹²⁵ yet, the existing drafts still allow for a discussion.

118 The first compliance committee was to be elected by November 2019, Decision 20/CMA.1, para 8.

119 Members of the compliance committee were indeed elected at CMA 2 in 2019, with nominations for (alternate) members from certain regions outstanding at that time, see Report of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement on its second session, held in Madrid from 2 to 15 December 2019, FCCC/PA/CMA/2019/6, para 8f. The current composition of the committee is available at United Nations Framework Convention on Climate Change, 'Committee to facilitate implementation and promote compliance referred to in Article 15, paragraph 2, of the Paris Agreement' <<https://unfccc.int/playground-20/level-2/level-3/committee-to-facilitate-implementation-and-promote-compliance-referred-to-in-article-15-paragraph-2#>> accessed 15 October 2021.

120 Decision 20/CMA.1, para 17.

121 Ibid.

122 Annual report of the Paris Agreement Implementation and Compliance Committee to the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement, FCCC/PA/CMA/2020/1, para 9.

123 Committee to facilitate implementation and promote compliance referred to in Article 15, paragraph 2, of the Paris Agreement, 'Report of the second meeting of the committee referred to in Article 15, paragraph 2, of the Paris Agreement' (2-5 December 2018) UN Doc PA/ICC/2020/M2/7, Annex 3.

124 United Nations Climate Change Secretariat, 'Message to parties, observers states and observer organizations on information regarding new dates for CoP 26', CAS/MTP/O/COP 26 (28 May 2020) <<https://unfccc.int/news/cop-26-to-take-place-from-1-12-november-2021>> accessed 15 October 2021.

125 Meanwhile, until the CMA in 2021, the committee relies on interim organisational arrangements, Committee to facilitate implementation and promote compliance referred to in Article 15, paragraph 2, of the Paris Agreement, 'Report of the second meeting of the committee referred to in Article 15, paragraph 2, of the Paris Agreement' (26-28 October 2018) UN Doc PA/ICC/2020/M2/7, Annex 2.

3.2.1 Independent expert-based compliance body

The treaty text merely establishes that the compliance committee, forming part of the compliance mechanism, shall be expert-based.¹²⁶ In the decision adopting the agreement though, this feature was fleshed out further: the CoP decided that this expert-based treaty-body should consist of 12 members. The members ought to dispose of recognised competence in relevant scientific, technical, socioeconomic or legal fields.¹²⁷

The decision for experts from different disciplines rather than administrative experts can be explained by the nature of the agreement. For one, the agreement is based on the best available science. For another, implementing climate action must be understood and assessed against the background of scientific evidence.¹²⁸ Scientific knowledge is thus crucial to understand the workings of the PA. Nevertheless, the decision can also be understood to recognise more generally the importance of legal expertise to facilitate implementation of and compliance with the agreement. In doing so, the requirement can be understood to take account of the legal complexities reflected in the PA.

According to the adopting decision, the election of the committee members has to observe the goal of equitable geographical representation.¹²⁹ Thus, the members stem from the five regional groups of the United Nations, from the small island developing States and the least developed countries. What remained unclear was whether these members, while being experts, were to represent the views of their respective governments.

In line with more recent trends,¹³⁰ the CMA in 2018 decided that members of the compliance committee shall serve in their individual expert capacity.¹³¹ Thus, they exercise their function independent of state governments. Critically though, in other agreements, such a requirement has not prevented nominations of members who were at the same time governmental civil servants.¹³²

The decision for an independent, expert-based body suggests that both qualities are considered to raise the legitimacy of that body: The expertise of the committee

126 Paris Agreement, Article 15(2).

127 Decision 1/CP.21, Adoption of the Paris Agreement, FCCC/CP/2015/10/Add.1, para 102. These requirements are repeated in the modalities and procedures of the compliance mechanisms, Decision 20/CMA.1, para 5.

128 See Gu Zihua, Christina Voigt and Jacob Werksman, 'Facilitating implementation and promoting compliance with the Paris Agreement under Article 15: Conceptual challenges and pragmatic choices' (2019) 9 *Climate Law* 65, 75f.

129 Decision 1/CP.21, Adoption of the Paris Agreement, FCCC/CP/2015/10/Add.1, para 102.

130 Loibl (n 95) 430.

131 Decision 20/CMA.1, para 10.

132 Koester (n 111) 193.

members enhances the substantive legitimacy of the body's work.¹³³ The independence and impartiality of the members enhances its procedural legitimacy.¹³⁴

3.2.2 Triggering by parties and the compliance body

Non-compliance procedures can be initiated in different ways ('triggering'). In line with the supportive nature of the procedure, it is always possible for treaty parties to trigger the procedure with regard to their own situation.¹³⁵ In addition, there may be a trigger for other treaty parties. At times, there is also a possibility for other treaty-bodies to trigger the mechanism.¹³⁶

The CMA decided for the possibility of self-triggering.¹³⁷ At the same time, it follows from the CMA's decision that parties are not capable of triggering the process in view of another party.¹³⁸ This decision is quite surprising as such trigger possibilities are generally considered to highlight the common interest underlying the treaty.¹³⁹ In this vein, such possibilities are considered a 'rational strategy in the collective 'self-interest' of parties'.¹⁴⁰ Under the PA's compliance mechanism, this rational strategy is omitted. It appears that views according to which such trigger rights are not a rational strategy but resemble adversarial judicial proceedings have prevailed.¹⁴¹

Similarly, triggering possibilities by the compliance body are often considered to compensate for any reluctance by treaty parties to initiate procedures themselves.¹⁴² At the same time though, with such powers, the compliance body's role is arguably no longer that of a neutral institution.¹⁴³ As a result, the procedure would convey the

133 Petra Lea Láncoš, 'Flexibility and legitimacy – the emissions trading System under the Kyoto Protocol' (2008) 9 *German Law Journal* 1625, 1650.

134 See Fiona Marshall, 'Two years in the life: The pioneering Aarhus Convention Compliance Committee 2004-2006' (2006) 8 *International Community Law Review* 123, 128.

135 See Brunnée (n 75) 383.

136 See Markus Ehrmann, *Erfüllungskontrolle im Umweltvölkerrecht* (Nomos 2000) 422.

137 Decision 20/CMA.1, para 20.

138 Decision 20/CMA.1, para 21 'verifying'.

139 Fodella (n 109) 366ff.

140 Peter H Sand, 'Institution-building to assist compliance with international environmental law: Perspectives' (1996) *ZaöRV* 774, 784.

141 See e.g., Hugh Adsett et al., 'Compliance committees and recent multilateral environmental agreements: The Canadian experience with their negotiation and operation' (2004) 42 *Canadian Yearbook of International Law* 91, 108 'the very antithesis of a non-confrontational process'.

142 See Oberthür and Lefeber (n 105) 141.

143 Cesare Pitea, 'The non-compliance procedure of the Aarhus Convention: Between environmental and human rights control mechanisms' (2006) 16 *The Italian Yearbook of International Law Online* 85, 94; Geir Ulfstein, 'Dispute resolution, compliance control and enforcement in environmental law' in Geir Ulfstein, Thilo Marauhn and Andreas Zimmerman (eds), *Making*

image of an inquisitorial process.¹⁴⁴ This image, however, would not be matching the supportive and facilitative nature of the compliance process.

In view of these considerations, the triggering powers of the PA's compliance committee appear to be a compromise solution. The initial draft negotiation text included two different options: one broader possibility for the compliance committee to initiate proceedings, the other more selective.¹⁴⁵ The latter option found agreement amongst the parties represented in the CMA.¹⁴⁶

Some triggering possibility for the compliance committee were still agreed though. Indeed, the compliance committee can initiate proceedings where a party has not observed selected procedural obligations.¹⁴⁷ In doing so, the content of the item associated with the procedural obligation, the contributions, communications, information and reports, are not addressed.¹⁴⁸ This distinction thus matches the approach reflected in the PA as a whole.

3.2.3 Decision-making powers of the compliance committee

The decision-making powers of the compliance committee were slightly modified by the decision of the CMA.¹⁴⁹ What remained though is a distinction based on who initiated the procedure. Accordingly, where a procedure was initiated by self-triggering, these decision-making powers are more limited; they relate to soft measures only, such as the facilitation of a dialogue.¹⁵⁰ The compliance committee can take these measures directly in view of the non-compliant party. In its decision-making, the committee is thus not dependent on confirmation by the main political body. However, in line with standard models of compliance mechanisms,¹⁵¹ other

treaties work. Human rights, environment and arms control (Cambridge University Press 2007) 115, 127.

144 See Veit Koester, 'The compliance mechanisms of the Aarhus Convention and the Cartagena Protocol on Biosafety: A comparative analysis of the negotiation histories and their outcomes' in Tullio Treves et al. (eds), *Non-compliance procedures and mechanisms and the effectiveness of international environmental agreements* (Springer 2009) 277, 297.

145 Draft text on APA 1.7, agenda item 7, Modalities and procedures for the effective operation of the committee to facilitate implementation and promote compliance referred to in Article 15, para 2, of the Paris Agreement, Version of 8 December 2018, para 22.

146 Decision 20/CMA.1, para 22.

147 Decision 20/CMA.1, para 22(a). Currently, there is not agreement as to the exact rules to be followed by the committee in this context, Report of the 5th meeting of the committee to facilitate implementation and promote compliance referred to in Article 15, paragraph 2, of the Paris Agreement, PAICC/2021/M5/3, Annex 3, Rue 21.

148 Decision 20/CMA.1, para 23.

149 See Draft text (n 145) para 29.

150 Decision 20/CMA.1, para 30(a)-(b).

151 See Loibl (n 95) 436.

measures than advice and assistance are limited to recommendations.¹⁵² They are thus not binding the respective non-compliant party.

It is unclear whether such recommendations are meant to serve as the basis for subsequent decision-making by the CMA. Within other compliance mechanisms this is indeed the case, to the effect that the respective main political body can take further measures on the subject.¹⁵³ However, already their mere confirmation by the main political body is deemed to provide any such recommendations with more authority.¹⁵⁴ The relationship between the compliance committee and the CMA is thus one of the issues to be clarified in the rules of procedure.¹⁵⁵

Where the compliance committee initiated the non-compliance procedure, it can also adopt a further measure: it can issue findings of facts.¹⁵⁶ In view of the facilitative and cooperative nature of compliance mechanisms, such a measure is considered a hard measure.¹⁵⁷ The finding of facts exposes a non-compliant party not only to other treaty parties but also to the outside world. Therefore, relying on a ‘name and shame’ approach, it works similar to a sanction.¹⁵⁸ Accordingly, it can only apply where the procedure was not initiated by the non-compliant party itself. The initially proposed possibility for the issuing of a statement of concern, also working as a sanction, was not confirmed by the CMA.¹⁵⁹

3.3 A role for civil society?

The crucial role of civil society in bringing about the PA is frequently acknowledged.¹⁶⁰ In a similar vein, authoritative voices have highlighted the role civil society could play in ensuring that states effectuate the PA.¹⁶¹ However, this role is not immediately reflected in the context of the treaty’s compliance mechanism.

152 Decision 20/CMA.1, para 30(c)-(d).

153 See Lang (n 36) 694.

154 See e.g., Milano (n 111) 414.

155 Committee to facilitate implementation and promote compliance referred to in Article 15, paragraph 2, of the Paris Agreement, ‘Report of the second meeting of the committee referred to in Article 15, paragraph 2, of the Paris Agreement’ (26-28 October 2018) UN Doc PAICC/2020/M2/7, Annex 2, Section I, institutional arrangements.

156 Decision 20/CMA.1, para 30(a)-(c).

157 See Ulfstein (n 84) 442.

158 See Adsett et al. (n 141) 111.

159 Draft text (n 145) para 29(e)(i).

160 E.g., Maria Ivanova, ‘Politics, economics and society’ in Daniel Klein et al. (eds), *The Paris Agreement on Climate Change. Analysis and commentary* (Oxford University Press 2017) 17, 25.

161 E.g., Harro van Asselt, ‘The role of non-state actors in reviewing ambition, implementation, and compliance under the Paris Agreement’ (2016) 6 *Climate Law* 91, 103f.

Most importantly, the CMA did not decide for a trigger possibility for civil society actors. While this is indeed regrettable,¹⁶² renouncing civil society triggering ultimately matches the general pattern: The provision of trigger possibility for civil society in selected compliance mechanisms is regularly explained by reference to the topic and content of the respective MEA.¹⁶³ In short, where treaties grant the public rights or affect its position, compliance mechanisms are more likely to allow for submissions by the public to defend their rights.¹⁶⁴ However, while the PA acknowledges that climate change, adaptation and mitigation affects the situation of the public,¹⁶⁵ it does not grant the public any rights.¹⁶⁶

What is still unclear though is whether the public can *indirectly* engage in non-compliance procedures under the PA. Generally, compliance mechanisms tend to allow for such involvement via the avenue of information.¹⁶⁷ In the context of the PA, this avenue appears to be still open; at least, it appears not to be entirely closed.

Usually, compliance committees can receive information on a compliance matter from different sources. As such rules are often rather broadly termed,¹⁶⁸ in practice, it permits specifically environmental non-governmental organisations (eNGOs) to submit information to the treaty body. How the body proceeds with this information, is of course left to the body's discretion.¹⁶⁹ Yet, examples from compliance practice

162 Recently highlighting the valuable role non-governmental organisations play in the climate regime, Esther Shari Kosa, 'Das Übereinkommen von Paris zum Klimaschutz: Einbindung und Rolle nicht-staatlicher Akteure' (2020) EurUP 17, 20f.

163 The Aarhus Convention, the Protocol on Water and Health to the 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes (adopted 17 June 1999, entered into force 4 August 2005) 2331 UNTS 202; Protocol on Pollutant Release and Transfer Registers to the Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (adopted 21 May 2003, entered into force 8 October 2009) 2626 UNTS 119.

164 Cesare Pitea, 'NGOs in non-compliance mechanisms under multilateral environmental agreements: From tolerance to recognition?' in Tullio Treves et al. (eds), *Civil society, international courts and compliance bodies* (Cambridge University Press 2005) 205, 207f.

165 Preamble, para 14.

166 Note though Annalisa Saravesi and Joanne Scott, 'Implementing the Paris Agreement: Lessons from the global human rights regime' (2019) 9 *Climate Law* 159, 160f. See further, Svitlana Kravchenko, 'Procedural rights as a crucial tool to combat climate change Symposium: International human rights and climate change' (2009-2010) 38 *Georgia Journal of International and Comparative Law* 613.

167 Markus Ehrmann, 'Procedures of compliance control in international environmental treaties' (2002) 13 *Colorado Journal of International Environmental Law* 377, 399 'compensation'.

168 E.g., CITES Resolution Conf. 14.3, para 16, according to which the Secretariat as the treaty body competent to trigger non-compliance procedures can act upon 'information it receives about that Party's compliance'.

169 Astrid Epiney, 'The role of NGOs in the process of ensuring compliance with MEAs' in Ulrich Beyerlin, Peter-Tobias Stoll and Rüdiger Wolfrum (eds), *Ensuring compliance with multilateral environmental agreements. A Dialogue between practitioners and academia* (Brill | Nijhoff 2006) 319, 334.

show that non-compliance procedures are quite often triggered based on such external information.¹⁷⁰ In any case, within non-compliance procedures, such information permits to review and assess information provided by a party.¹⁷¹

In the context of the PA, the respective provision for receiving and relying on external information is somewhat ambiguous. On the one hand, it limits information the committee can receive to ‘processes, bodies, arrangements and forums under or serving the PA’;¹⁷² this would clearly exclude civil society actors. On the other though, the provision states that the committee can seek expert advice. This reference is not qualified in any way, neither in the CMA Decision, nor in the latest version of the committee’s proposed rules of procedure, which has not yet found support in the committee.¹⁷³ The open wording thus prompts the question whether at least the organised public, i.e., eNGOs, could be understood to provide such expert advice.¹⁷⁴ Taking this view would certainly leverage the role of non-state actors within the non-compliance procedure, and the PA’s implementation more generally.¹⁷⁵ Hopefully, the issue will soon be clarified at CMA 3.

4 Conclusion and outlook

The PA has been hailed as a giant leap for humankind. Indeed, in view of its bottom-up approach and its nuanced mix of obligations, it is a turning point in global climate policy. Whether it can deliver on its goals and objectives will depend on the effective implementation of its provisions. This effective implementation must include all of the agreement’s provisions, whether hard and legally binding or not.

However, by focusing merely on an enforcement approach, it is doubtful that compliance with all of the PA’s provisions can be ensured. After all, the available enforcement instruments are not fully equipped to deliver on this task. Other contri-

170 See, for the example of CITES, Convention on International Trade in Endangered Species of Wild Fauna and Flora, 993 UNTS 243, Susan Biniaz, ‘CITES compliance regime’ in Ulrich Beyerlin, Peter-Tobias Stoll and Rüdiger Wolfrum (eds), *Ensuring compliance with multilateral environmental agreements. A dialogue between practitioners and academia* (Brill | Nijhoff 2006) 89, 95.

171 Fodella (n 109) 364.

172 Decision 20/CMA.1, para 35.

173 PAICC/2021/M5/3, Annex 3, Rule 24.2(1) which includes a requirement for consent by the Party concerned, though.

174 E.g., Aarhus Convention MoP, Decision I/7, para 25, for which the relating Guidance Document highlights the instrumental role of NGOs in this information gathering, UNECE (ed), *Guidance document on the Aarhus Convention compliance mechanism* (2nd ed 2019) para 33.

175 See Yamide Dagnet and Eliza Northrop, ‘Facilitating implementation and promoting compliance (Article 15)’ in Daniel Klein et al. (eds), *The Paris Agreement on Climate Change. Analysis and commentary* (Oxford University Press 2017) 338, 349.

butions have demonstrated that it is possible to make the available instrument work to some extent. Yet, whilst doing so, it is fruitful to consider complementary avenues that can secure the effective implementation of the PA.

Treaty-based and tailored compliance mechanisms can present such an avenue. In particular, it could be shown how this mechanism is adaptable to the carefully designed mix of obligations used in the PA. While focusing on procedural obligations, its reliance on expert knowledge and information processed within treaty mechanisms allows addressing substantive issues.

The effectiveness of such a mechanism depends greatly on its design and the willingness of treaty parties to use it. In remaining an inclusive and supportive process though, it can potentially create a sense of obligation and responsibility for the treaty's undertaking. If this potential is successfully exploited, the compliance mechanism can foster the necessary ambition to deliver on the Paris goals.

Bibliography

- Adsett H et al., 'Compliance committees and recent multilateral environmental agreements: The Canadian experience with their negotiation and operation' (2004) 42 *Canadian Yearbook of International Law* 91.
- Ali A, 'The EU and the compliance mechanisms of multilateral environmental agreements: The case of the Aarhus Convention' in Morgera E (ed), *The external environmental policy of the European Union* (Cambridge University Press 2012) 287.
- Alkoby A, 'Non-state actors and the legitimacy of international environmental law' (2003) 3 *Non-State Actors and International Law* 23.
- Andresen St, 'The Paris Agreement and its Rulebook in a problem-solving perspective' (2019) 9 *Climate Law* 122.
- Ankersmit L, 'An incoherent approach towards Aarhus and CETA: The Commission and external oversight mechanisms' in Govaere I and Garben S (eds), *The interface between EU and international law* (Hart Publishing 2019) 321.
- Benzie M and Persson Å, 'Governing borderless climate risks: Moving beyond the territorial framing of adaptation' (2019) 19 *International Environmental Agreements* 369.
- Beyerlin U, Stoll P-T and Wolfrum R, 'Conclusions drawn from the Conference on Ensuring Compliance with MEAs' in Beyerlin U, Stoll P-T and Wolfrum R (eds), *Ensuring compliance with multilateral environmental agreements. A dialogue between practitioners and academia* (Brill | Nijhoff 2006) 359.
- Biniat S, 'CITES compliance regime' in Beyerlin U, Stoll P-T and Wolfrum R (eds), *Ensuring compliance with multilateral environmental agreements. A dialogue between practitioners and academia* (Brill | Nijhoff 2006) 89.
- Bodansky D, *The art and craft of international environmental law* (Harvard University Press 2010).
- Bodle R, Donat L and Duwe M, 'The Paris Agreement: Analysis, assessment and outlook' (2016) 10 *Carbon & Climate Law Review* 5.
- Boyle A, 'Saving the world? Implementation and enforcement of international environmental law through international institutions' (1991) 3 *Journal of Environmental Law* 229.

- and Redgwell C, *Birnie, Boyle and Redgwell's international law & the environment* (4th edn, Oxford University Press 2021).
- Brunnée J, 'The Kyoto Protocol: Testing ground for compliance theories?' (2003) *ZaöRV* 255.
- , 'Enforcement mechanisms in international law and international environmental law' Beyerlin U, Stoll P-T and Wolfrum R (eds), *Ensuring compliance with multilateral environmental agreements. A dialogue between practitioners and academia* (Brill | Nijhoff 2006) 1.
- , 'Compliance control' in Ulfstein G, Marauhn T and Zimmerman A (eds), *Making treaties work. Human rights, environment and arms control* (Cambridge University Press 2007) 373.
- , 'Environment, multilateral agreements' in Wolfrum R (ed), *The Max Planck Encyclopedia of public international law III* (Oxford University Press 2012) 484.
- Cardesa-Salzmann A, 'Constitutionalising secondary rules in global environmental regimes: Non-compliance procedures and the enforcement of multilateral environmental agreements' (2011) 24 *Journal of Environmental Law* 103.
- Chayes A and Handler Chayes A, 'On compliance' (1993) 47 *International Organization* 175.
- , *The new sovereignty* (Harvard University Press 1995).
- Chayes A, Handler Chayes A and Mitchell R, 'Active compliance management in environmental treaties' in Lang W (ed), *Sustainable development and international law* (Graham & Trotman | Kluwer 1995) 75.
- Dagnet Y and Northrop E, 'Facilitating implementation and promoting compliance (Article 15)' in Klein D et al. (eds), *The Paris Agreement on Climate Change. Analysis and commentary* (Oxford University Press 2017) 338.
- Davies PGG, 'Non-compliance – a pivotal or secondary function of CoP governance?' (2013) 15 *International Community Law Review* 77.
- Doelle M, 'Compliance and enforcement in the climate change regime' in Hollo EJ, Kulovesi K and Mehling M (eds), *Climate change and the law* (Springer 2013) 165.
- , 'The Paris Agreement: Historic breakthrough or high stakes experiment?' (2016) 6 *Climate Law* 1.
- Downs GW, Rocke DM and Barsoom PN, 'Is the good news about compliance good news about cooperation?' (1996) 50 *International Organization* 379.
- Dupuy P-M and Viñuales JE, *International environmental law* (2nd edn, Cambridge University Press 2018).
- Ehrmann M, *Erfüllungskontrolle im Umweltvölkerrecht* (Nomos 2000).
- , 'Procedures of compliance control in international environmental treaties' (2002) 13 *Colorado Journal of International Environmental Law* 377.
- Ekardt F, 'Das Paris-Abkommen zum globalen Klimaschutz' (2016) *NVwZ* 355.
- Enderlin T, 'Alpine Convention: A different compliance mechanism' (2003) 33 *Environmental Policy and Law* 155.
- Epiney A, 'The role of NGOs in the process of ensuring compliance with MEAs' in Beyerlin U, Stoll P-T and Wolfrum R (eds), *Ensuring compliance with multilateral environmental agreements. A dialogue between practitioners and academia* (Brill | Nijhoff 2006) 319.
- Fitzmaurice M, 'Environmental compliance control' in Wolfrum R (ed), *The Max Planck Encyclopedia of public international law III* (Oxford University Press 2012) 541.
- and Redgwell C, 'Environmental non-compliance procedures and international law' (2000) 31 *Netherlands Yearbook of International Law* 35.

- Fodella A, 'Structural and institutional aspects of non-compliance mechanisms' in Treves T et al. (eds), *Non-compliance procedures and mechanisms and the effectiveness of international environmental agreements* (Springer 2009) 355.
- Goote M M, 'Non-compliance procedures in international environmental law: The middle way between diplomacy and law' (1999) 1 *International Law Forum Du Droit International* 82.
- Guzman A T, 'A compliance-based theory of international law' (2002) 90 *California Law Review* 1823.
- , *How international law works: A rational choice theory* (Oxford University Press 2008).
- Handl G, 'International "lawmaking" by conferences of the parties and other politically mandated bodies' in Wolfrum R and Röben V (eds), *Developments of international law in treaty making* (Springer 2005) 125.
- Henkin L, *How nations behave* (2nd edn, Columbia University Press 1974).
- Hermville L, 'Climate change as a transformative challenge. A new climate policy paradigm?' (2016) 25 *GAIA* 19.
- Ivanova M, 'Politics, economics and society', in Klein D et al. (eds), *The Paris Agreement on Climate Change. Analysis and commentary* (Oxford University Press 2017) 17.
- Klabbers J, 'Compliance procedures' in Bodansky D, Brunnée J and Hey E (eds), *The Oxford handbook of international environmental law* (Oxford University Press 2007) 995.
- Koester V, 'The Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (Aarhus Convention)' in Ulfstein G, Marauhn T and Zimmerman A (eds), *Making treaties work. Human rights, environment and arms control* (Cambridge University Press 2007) 179.
- , 'The compliance mechanisms of the Aarhus Convention and the Cartagena Protocol on Biosafety: A comparative analysis of the negotiation histories and their outcomes' in Treves T et al. (eds), *Non-compliance procedures and mechanisms and the effectiveness of international environmental agreements* (Springer 2009) 277.
- Koh HH, 'Why do nations obey international law?' (1997) 106 *The Yale Law Journal* 2599.
- Koskenniemi M, 'Breach of treaty or non-compliance? Reflections on the enforcement of the Montreal Protocol' (1992) 3 *Yearbook of International Environmental Law* 123.
- , 'Miserable comforters: International relations as new natural law' (2009) 15 *European Journal of International Relations* 395.
- Kravchenko S, 'Procedural rights as a crucial tool to combat climate change symposium: International human rights and climate change' (2009-2010) 38 *Georgia Journal of International and Comparative Law* 613.
- Láncos PL, 'Flexibility and legitimacy – the emissions trading system under the Kyoto Protocol' (2008) 9 *German Law Journal* 1625.
- Lang W, 'Diplomacy and international environmental law-making: Some observations' (1992) *Yearbook of International Environmental Law* 108.
- , 'Compliance control in international environmental law: Institutional necessities' (1996) *ZaöRV* 685.
- Lawrence P and Wong D, 'Soft law in the Paris Climate Agreement: Strength or weakness?' (2017) 26 *RECIEL* 276.
- Lesniewska F, 'Filling the holes: The Montreal Protocol's non-compliance mechanism' in Fitzmaurice M, Ong DM and Merkouris P (eds), *Research handbook on international environmental law* (Edward Elgar 2010) 471.

- Loibl G, 'Compliance procedures and mechanisms' in Fitzmaurice M, Ong DM and Merkouris P (eds), *Research handbook on international environmental law* (Edward Elgar 2010) 426.
- Lutmar C and Carneiro CL, 'Compliance in international relations' in *Oxford research encyclopedia of politics* (2018) <<https://doi.org/10.1093/acrefore/9780190228637.013.576>>.
- Marshall F, 'Two years in the life: The pioneering Aarhus Convention Compliance Committee 2004-2006' (2006) 8 *International Community Law Review* 123.
- Mayer B, 'International law obligations arising in relation to nationally determined contributions' (2018) 7 *Transnational Environmental Law* 251.
- , 'Interpreting states' general obligations on climate change mitigation: A methodological review' (2019) 27 *RECIEL* 107.
- McGee J and Steffek J, 'The Copenhagen turn in global climate governance and the contentious history of differentiation in international law' (2016) 28 *Journal of Environmental Law* 37.
- Milano E, 'The outcomes of the procedure and their legal effects' in Treves T et al. (eds), *Non-compliance procedures and mechanisms and the effectiveness of international environmental agreements* (Springer 2009) 407.
- Milkoreit M and Haapala K, 'The global stocktake: Design lessons for a new review and ambition mechanism in the international climate regime' (2019) 19 *International Environmental Agreements* 89.
- Oberthür S, 'Options for a compliance mechanism in a 2015 climate agreement' (2014) 4 *Climate Law* 30.
- , 'Compliance under the evolving climate change regime' in Carlane CP, Gray KR and Tarasofsky RG (eds), *The Oxford handbook of international climate change law* (Oxford University Press 2016) 120.
- and Lefeber R, 'Holding countries to account: The Kyoto Protocol's compliance system revisited after four years of experience' (2010) 1 *Climate Law* 133.
- Omura RK, 'Chasing Hamlet's ghost: State responsibility and the use of countermeasures to compel compliance with multilateral environmental agreements' (2010) 15 *Appeal: Review of Current Law and Law Reform* 86.
- Pickering J et al., 'Global climate governance between hard and soft law: Can the Paris Agreement's 'crème brûlée' approach enhance ecological reflexivity?' (2019) 31 *Journal of Environmental Law* 1.
- Pineschi L, 'Non-compliance mechanisms and the proposed center for the prevention and management of environmental dispute' (2004) 20 *Anuario de Derecho Internacional* 241.
- Pitea C, 'NGOs in non-compliance mechanisms under multilateral environmental agreements: from tolerance to recognition?' in Treves T et al. (eds), *Civil society, international courts and compliance bodies* (Cambridge University Press 2005) 205.
- , 'The non-compliance procedure of the Aarhus Convention: Between environmental and human rights control mechanisms' (2006) 16 *The Italian Yearbook of International Law Online* 85.
- Proelß A, 'Klimaschutz im Völkerrecht nach dem Paris Agreement: Durchbruch oder Stillstand?' (2016) *ZfU* 58.
- Rajamani L, 'The 2015 Paris Agreement: Interplay between hard, soft and non-obligations' (2016) 28 *Journal of Environmental Law* 337.
- Raustiala K and Slaughter A-M, 'International law, international relations and compliance' in Carlsnaes W, Risse T and Simmons BA (eds), *Handbook of international relations* (SAGE 2002) 538.

- Sand PH, 'Institution-building to assist compliance with international environmental Law: Perspectives' (1996) *ZaöRV* 774.
- , 'Non-compliance and dispute settlement' in Beyerlin U, Stoll P-T and Wolfrum R (eds), *Ensuring compliance with multilateral environmental agreements. A dialogue between practitioners and academia* (Brill | Nijhoff 2006) 353.
- , 'The role of environmental agreements' conferences of the parties' in Kerbrat Y and Maljean-Dubois S (eds), *The transformation of international environmental law* (Editions A. Pedone and Hart Publishing 2011) 89.
- Saravasi A, 'The Paris Agreement: An early assessment' (2016) 48 *Environmental Policy and Law* 14.
- and Sindico F, 'The role of law in a bottom-up international climate governance architecture: early reflections on the paris agreement' (2016) 26 *QIL Zoom-in* 1.
- and Scott J, 'Implementing the Paris Agreement: Lessons from the global human rights regime' (2019) 9 *Climate Law* 159.
- Saurer J, 'Verfahrensregeln im internationalen Klimaschutzrecht. Bedeutung und Entwicklung von der Klimarahmenkonvention bis zum Rulebook zum Pariser Abkommen' (2019) 41 *NuR* 145.
- Shari Kosa E, 'Das Übereinkommen von Paris zum Klimaschutz: Einbindung und Rolle nicht-staatlicher Akteure' (2020) *EurUP* 17.
- Soltau F, 'Common concern of humankind' in Carlane CP, Gray KR and Tarasofsky RG (eds), *The Oxford handbook of international climate change law* (Oxford University Press 2016) 202.
- Stewart RB, Oppenheimer M, Rudyk B, 'Building a more effective global climate regime through a bottom-up approach' (2013) 14 *Theoretical Inquiries in Law* 273.
- Streck C, Keenlyside P and von Unger M, 'The Paris Agreement: A new beginning' (2016) 13 *Journal for Environmental & Planning Law* 3.
- Tanzi A and Pitea C, 'Non-compliance mechanisms: Lessons learned and the way forward' in Treves T et al. (eds), *Non-compliance procedures and mechanisms and the effectiveness of international environmental agreements* (Springer 2009) 569.
- Tørstad VH, 'Participation, ambition and compliance: Can the Paris Agreement solve the effectiveness trilemma?' (2020) *Environmental Politics* <<https://bit.ly/36zLn2E>> accessed 29 March 2022.
- Tveit AK, 'Can the management school explain noncompliance with international environmental agreements?' (2018) 18 *International Environmental Agreements* 491.
- Ulfstein G, 'Dispute resolution, compliance control and enforcement in environmental law', in Ulfstein G, Marauhn T and Zimmerman A (eds), *Making treaties work. Human rights, environment and arms control* (Cambridge University Press 2007) 115.
- , 'Treaty bodies and regimes' in Hollis DB (ed), *The Oxford guide to treaties* (Oxford University Press 2012) 428.
- van Asselt H, 'The role of non-state actors in reviewing ambition, implementation, and compliance under the Paris Agreement' (2016) 6 *Climate Law* 91.
- van den Bossche P, 'In search of remedies for non-compliance: The experience of the European Community' (1996) 3 *Maastricht Journal of European and Comparative Law* 371.
- Voigt C, 'The compliance and implementation mechanism of the Paris Agreement' (2016) 25.
- , 'The Paris Agreement: What is the standard of conduct for parties?' (2016) 26 *QIL Zoom-in* 17.
- and Ferreira F, 'Differentiation in the Paris Agreement' (2016) 6 *Climate Law* 58.

- Von Stein J, 'The engines of compliance' in Dunoff J and Pollack M (eds), *Interdisciplinary perspectives on international law and international relations: The state of the art* (Cambridge University Press 2013) 477.
- Wang X and Wiser G, 'The implementation and compliance regimes under the Climate Change Convention and its Kyoto Protocol' (2002) 11 *RECIEL* 181.
- Yamin F and Depledge J, *The international climate change regime: A guide to rules, institutions and procedures* (Cambridge University Press 2004).
- Yang T, 'International treaty enforcement as a public good: Institutional deterrent sanctions in international environmental agreements' (2006) 27 *Michigan Journal of International Law* 1131.
- Zahar A, 'Collective obligation and individual ambition in the Paris Agreement' (2020) 9 *Transnational Environmental Law* 165.
- Zihua G, Voigt C and Werksman J, 'Facilitating implementation and promoting compliance with the Paris Agreement under Article 15: Conceptual challenges and pragmatic choices' (2019) 9 *Climate Law* 65.