

Climate Change Adaptation and the Law

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Abstract

A number of arguments have been made for legal developments aimed at promoting adaptation to the impacts of climate change, for instance, through a protection of “climate migrants” or measures to reduce the risks related to “climate disasters”. This article questions the need for such substantive legal developments. It argues that climate change adaptation should not be conceived as a separate policy or legal field, but rather as a consideration to be mainstreamed in various policy and legal regimes, for instance on disaster risk reduction, the protection of human rights, economic development, and ecological conservation. For one, it is likely impossible to attribute particular events (e.g., an individual’s migration or a disaster) to climate change. Overall, causal attribution is not relevant to determining how societies ought to respond to these events. If a “law” on adaptation is necessary, it is only as a minimal set of procedural norms aimed at ensuring that the objective of adapting to climate change is considered in other fields of law, such as disaster-risk reduction, human rights protection, economic development and ecological conservation.

Keywords

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Climate change adaptation, law, climate migration, climate disasters, attribution

Introduction

Clear scientific evidence shows that our climate system is changing² due to anthropogenic emissions of greenhouse gases (GHGs).³ The global average temperature has already increased by around 1 °C above pre-industrial levels.⁴ Climate change is already causing widespread impacts, ranging from slow-onset environmental changes such as sea-level rise⁵ and

² Lisa V. Alexander et al., *Summary for Policymakers*, in CLIMATE CHANGE 2013: THE PHYSICAL SCIENCE BASIS. THE WORKING GROUP I CONTRIBUTION TO THE FIFTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 1, 4-5 (Thomas F Stocker et al. eds., 2013).

³ *Id.* at 15-17.

⁴ Myles Allen et al., *Summary for Policymakers*, in 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 1, 4 (Valérie Masson-Delmotte et al. eds, 2019)

⁵ Christopher B. Field et al, *Summary for Policymakers*, in CLIMATE CHANGE 2014: IMPACTS, ADAPTATION, AND VULNERABILITY, PART A: GLOBAL AND SECTORAL ASPECTS. THE WORKING GROUP II CONTRIBUTION TO THE FIFTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 1, 17 (Christopher B. Field et al. eds, 2014).

desertification,⁶ to an increase in the frequency and severity of extreme weather events.⁷ It thus impacts multiple ecological and social systems, with far-reaching consequences for the enjoyment of human rights⁸ and human welfare more generally.⁹

There are two main ways societies can respond to climate change. On the one hand, measures can be taken to mitigate climate change by reducing GHG emissions.¹⁰ For instance, states have sought to incentivize emission reduction by introducing carbon taxes¹¹ or establishing cap-and-trade mechanisms,¹² while they have also imposed command-and-control regulation

⁶ *Id.* at 14.

⁷ *Id.* at 12.

⁸ *See, e.g.*, JOHN H. KNOX, REPORT OF THE SPECIAL RAPPORTEUR ON THE ISSUE OF HUMAN RIGHTS OBLIGATIONS RELATING TO THE ENJOYMENT OF A SAFE, CLEAN, HEALTHY AND SUSTAINABLE ENVIRONMENT, U.N. Doc. A/HRC/31/52 (Feb. 1, 2016); and generally Stephen Humphreys, *Competing Claims: Human Rights and Climate Harms*, in HUMAN RIGHTS AND CLIMATE CHANGE 37 (Stephen Humphreys ed., 2010).

⁹ *See, e.g.*, Richard S.J. Tol, *The Economic Impacts of Climate Change*, 12 REVIEW OF ENVIRONMENTAL ECONOMICS AND POLICY 4 (2018).

¹⁰ For the sake of simplicity, I refer in this paper to net emissions. Thus, reducing emissions includes enhancing sinks and reservoirs of GHGs.

¹¹ *See, e.g.*, Carbon Tax Act, S.B.C. 2008, c. 40 (Can. B.C.); Carbon Pricing Act 2018, No. 23 (Sing.).

¹² *See, e.g.*, Parliament and Council Directive 2003/87, 2003 O.J. (L 275) 32 (EC); and generally Harro van Asselt, *The Design and Implementation of Greenhouse Gas Emissions*

on various economic sectors.¹³ On the other hand, measures can also be taken to adapt to climate change, either by enhancing the resilience of individuals and assets to the physical impacts of climate change, or by reducing their exposure and vulnerability to such impacts.¹⁴ Mitigation and adaptation are not alternative priorities — societies must at the same time adapt to the impacts of climate change that are already taking place and reduce their GHG emissions in order to prevent more severe impacts for which adaptation would not be a realistic option.¹⁵

A parallel is often drawn between mitigation and adaptation, leading to a general sense that these two priorities are to be pursued in similar ways, in particular through international cooperation. For instance, the UN General Assembly has affirmed that “[t]he global nature of climate change calls for the widest possible international cooperation aimed at accelerating the reduction of global [GHG] emissions and addressing adaptation to the adverse impacts of climate change.”¹⁶ The United Nations Framework Convention on Climate Change requires each of its parties to formulate and implement “measures to mitigate climate change ... and

Trading, in THE OXFORD HANDBOOK OF INTERNATIONAL CLIMATE CHANGE LAW 332 (Cinnamon P. Carlarne et al. eds., 2016).

¹³ See, e.g., Parliament and Council Regulation 2019/1242, 2019 O.J. (L 198) 202 (EU); Parliament and Council Regulation 2019/631, 2019 O.J. (L 111) 13 (EU).

¹⁴ See generally Field, *supra* note 5, at 3-5.

¹⁵ See Christopher B. Field et al., *Technical Summary*, in CLIMATE CHANGE 2014, *supra* note 5, at 35, 93.

¹⁶ G.A. Res. 70/1, Transforming our world: the 2030 Agenda for Sustainable Development ¶31 (Sept. 25, 2015).

measures to facilitate adequate adaptation to climate change”.¹⁷ The Paris Agreement defines a (mitigation) objective of holding the increase in global temperature “well below” 2 °C and possibly close to 1.5 °C above preindustrial levels and an (adaptation) objective of “[i]ncreasing the ability to adapt to the adverse impacts of climate change”.¹⁸ Out of the 167 first intended nationally determined contributions, the UNFCCC Secretariat reported that 137 included an adaptation component in addition to their mitigation targets.¹⁹

Likewise, law and policy scholars have repeatedly suggested that, just like action on climate change relies on substantive legal rules and principles,²⁰ there *is, will soon be, or at any rate ought to be*, a legal field aimed at promoting adaptation to climate change.²¹ Like mitigation

¹⁷ United Nations Framework Convention on Climate Change art. 4(1)(b), May 9, 1992, S. Treaty Doc No. 102–38 (1992), 1771 U.N.T.S. 107 [hereinafter UNFCCC].

¹⁸ Paris Agreement art. 2(1)(a)-(b), Dec. 12, 2015, 55 I.L.M. 740 (2016). *See also* the parallel between the global objective on mitigation and the “global goal on adaptation” defined in *Id.* arts. 4(1) and 7(1).

¹⁹ UNFCCC Secretariat, *Aggregate Effect of the Intended Nationally Determined Contributions: An Update* ¶7, 59, UN Doc. FCCC/CP/2016/2, May 2, 2016.

²⁰ *See, e.g.*, Kyoto Protocol to the United Nations Framework Convention on Climate Change art. 3(1), Dec. 10, 1997, 2303 U.N.T.S. 162 [hereinafter Kyoto Protocol]; Paris Agreement, *supra* note 18, art. 4(2); and references cited *supra* notes 11-13. *See also* BENOIT MAYER, *THE INTERNATIONAL LAW ON CLIMATE CHANGE* 108-131 (2018).

²¹ *See, e.g.*, Anne Saab, *Climate-Resilient Crops and International Climate Change Adaptation Law* *International Law and Practice*, 29 *LEIDEN JOURNAL OF INTERNATIONAL LAW* 503 (2016); Maria L. Banda, *Climate Adaptation Law: Governing Multi-Level Public Goods*

law, climate change adaptation law would consist in a set of substantive rules and principles in domestic and international law creating rules, in particular obligations, applicable to national authorities and possibly some other actors. Legal scholars, highlighting the urgency of adapting to climate change, have called for “a new legal framework”²² to be created, assuming that a dedicated legal field would be either the only way, or necessarily the “best tool”,²³ for public authorities to prompt adaptation action. Attempts have also been made to determine ways to “measure” adaptation as a way to facilitate an international monitoring and review of national adaptation action²⁴ in much the same way as international institutions and processes keep track of the implementation of national commitments on mitigation action and of the evolution of states’ GHG emissions.²⁵

Across Borders, 51 VANDERBILT JOURNAL OF TRANSNATIONAL LAW 1027 (2018); RESEARCH HANDBOOK ON CLIMATE CHANGE ADAPTATION LAW (Jonathan Verschuuren ed., 2013).

²² Robin Kundis Craig, *Stationarity is Dead — Long Live Transformation: Five Principles for Climate Change Adaptation Law*, 34 HARVARD ENVIRONMENTAL LAW REVIEW 9, 17 (2010).

²³ Jane McDonald, *Creating Legislative Frameworks for Adaptation*, in CLIMATE ADAPTATION FUTURES 12, 128 (Jean Palutikof et al. eds., 2013).

²⁴ See, e.g., Brianna Craft & Susannah Fisher, *Measuring the Adaptation Goal in the Global Stocktake of the Paris Agreement*, 18 CLIMATE POLICY 1203 (2018); Alexandre K. Magnan & Teresa Ribera, *Global Adaptation after Paris*, 352 SCIENCE 1280 (2016); James D. Ford et al., *How to Track Adaptation to Climate Change: A Typology of Approaches for National-Level Application*, 18 ECOLOGY AND SOCIETY 40 (2013).

²⁵ See UNFCCC, *supra* note 17, art. 12; Kyoto Protocol, *supra* note 20, arts. 5 and 7; Paris Agreement, *supra* note 18, art.13. See generally, for an overview of rules on monitoring, reporting and verification and on transparency in the context of mitigation action, Benoit Mayer,

Even more frequently, scholars have pleaded for the adoption of substantive norms that would seek to address particular impacts of climate change. In particular, many scholars have called for a legal protection of “climate migrants”, whether through the adoption of a specific treaty,²⁶ a reform of existing treaties,²⁷ or otherwise.²⁸ Others have framed “climate disasters” as an

Transparency Under the Paris Rulebook: Is the Transparency Framework Truly Enhanced?, 9 CLIMATE LAW 40 (2019).

²⁶ See, e.g., Frank Biermann & Ingrid Boas, *Towards a Global Governance System to Protect Climate Migrants: Taking Stock*, in RESEARCH HANDBOOK ON CLIMATE CHANGE, MIGRATION AND THE LAW 405 (Benoit Mayer & François Crépeau eds., 2017); Bonnie Docherty & Tyler Giannini, *Confronting a Rising Tide: A Proposal for a Convention on Climate Change Refugees*, 33 HARVARD ENVIRONMENTAL LAW REVIEW 349 (2009).

²⁷ See, e.g., MATTHEW SCOTT, CLIMATE CHANGE, DISASTERS, AND THE REFUGEE CONVENTION (2020); Matthew Scott, *Climate Refugees and the 1951 Convention*, in RESEARCH HANDBOOK ON INTERNATIONAL REFUGEE LAW 343 (Satvinder Singh Juss ed., 2019).

²⁸ See, e.g., AVIDAN KENT & SIMON BERHMAN, FACILITATING THE RESETTLEMENT AND RIGHTS OF CLIMATE REFUGEES AN ARGUMENT FOR DEVELOPING EXISTING PRINCIPLES AND PRACTICES (2019); Michael Addaney, *The Legal Challenges of Offering Protection to Climate Refugees in Africa*, in GOVERNANCE, HUMAN RIGHTS, AND POLITICAL TRANSFORMATION IN AFRICA 333 (Michael Addaney et al. eds., 2020); CLIMATE REFUGEES: BEYOND THE LEGAL IMPASSE? (Simon Behrman & Avidan Kent eds., 2018); CLIMATE CHANGE, MIGRATION AND HUMAN RIGHTS: LAW AND POLICY PERSPECTIVES (Dimitra Manou et al. eds., 2018); JANE MCADAM, CLIMATE CHANGE, FORCED MIGRATION, AND INTERNATIONAL LAW (2012); Jane McAdam, *Swimming against the Tide: Why a Climate Change Displacement Treaty is Not the Answer*,

issue requiring specific legal and policy responses.²⁹ At times, the impacts of climate change on public health have also been presented as a distinct governance issue.³⁰

This article questions the existence of, and the need for, a law on climate change adaptation. To be perfectly clear, it does not challenge the need to adapt to climate change and the role that states can and should play in pursuing this objective — the argument is only concerned with the way this objective is to be pursued. This article does not intend to cast any doubt on the need to take climate change adaptation into account by reforming various existing legal fields (e.g., rules on urban planning and littoral property). This article accepts that some legal provisions have occurred or are needed, for instance in the form of amendments to existing statutes. Rather, what this article questions is the need for a distinct set of substantive rules and principles dedicated to promoting climate change adaptation — in short, a field of “climate change adaptation law”. Climate change adaptation is and needs to be reflected in the law but, this article argues, not through distinct substantive norms. Substantive norms applicable to the

23 INTERNATIONAL JOURNAL OF REFUGEE LAW 2 (2011); Benoit Mayer, *The International Legal Challenges of Climate-Induced Migration: Proposal for an International Legal Framework*, 22 COLORADO JOURNAL OF INTERNATIONAL ENVIRONMENTAL LAW AND POLICY 357 (2011).

²⁹ See, e.g., ROSEMARY LYSTER, CLIMATE JUSTICE AND DISASTER LAW (2015); RESEARCH HANDBOOK ON CLIMATE DISASTER LAW (Rosemary Lyster & Robert R.M. Verchick eds, 2018).

³⁰ See, e.g., CLIMATE CHANGE, PUBLIC HEALTH, AND THE LAW (Michael Burger & Justin Gundlach eds., 2018); Lindsay F. Wiley, *Moving Global Health Law Upstream: A Critical Appraisal of Global Health Law as a Tool for Health Adaptation to Climate Change*, 22 GEORGETOWN INTERNATIONAL ENVIRONMENTAL LAW REVIEW 439 (2009).

impacts of climate change fall within the scope of disaster-risk reduction, human rights protection, economic development and ecological conservation, among other existing legal and institutional fields, and the need to adapt to climate change does not justify reinventing the wheel. The relevant laws and institutions could often be improved, but there is no reason to create a parallel legal regime, for instance, to protect a population of migrants or a type of disaster which would be (artificially) attributed to climate change.

Next section looks further into the concept of adaptation, in particular its origins in international negotiations, its definition, and its relations with the law. Section II shows that climate change adaptation has not emerged as a distinct legal field: contrary to what specialized legal scholars have sometimes suggested, international and domestic law hardly defines any substantive right or obligation relating to climate change adaptation. Section III turns to arguments about what the law ought to be. It refutes the three most likely arguments in favor of a law on climate change adaptation — arguments that frame this putative field of law as, respectively, the response to a collective action problem, the management of phenomena attributable to climate change, and a way to convey reparation for the injury that some states' GHG emissions cause to other states.

I. The Concept of Adaptation to Climate Change

This section provides a background analysis of the concept of adaptation. First, it recounts how the concept emerged in UNFCCC negotiations. Second, it attempts to define this concept. Third, it starts exploring the conceptual links between adaptation and the law.

A. The UNFCCC Regime's Increasing Emphasis on Climate Change Adaptation

The main focus of climate law has long been the mitigation of climate change. Thus, the UNFCCC’s ultimate objective is unmistakably a mitigation objective — to stabilize GHG concentrations in the atmosphere “at a level that would prevent dangerous anthropogenic interference with the climate system”.³¹ This objective mentions adaptation, but merely as a natural phenomenon, a benchmark to determine what is to be considered as “dangerous”: climate change mitigation should be achieved “within a time-frame sufficient to allow ecosystems to *adapt* naturally to climate change”.³² Nonetheless, the UNFCCC does mention adaptation in some commitments, albeit vaguely defined. In particular, states are required to adopt “measures to facilitate adequate adaptation to climate change”³³ and to “[c]ooperate in preparing for adaptation to the impacts of climate change”.³⁴ The developed countries included in Annex II further committed to contributing financially to adaptation in developing countries.³⁵

The Kyoto Protocol, likewise, focused essentially on climate change mitigation, by requiring each developed country party included in Annex I of the UNFCCC to achieve a quantified emission limitation or reduction commitment.³⁶ Some provisions of the Protocol reaffirmed the

³¹ UNFCCC, *supra* note 17, art. 2.

³² *Id.* (emphasis added).

³³ *Id.* art. 4(1)(b).

³⁴ *Id.* art. 4(1)(e).

³⁵ *Id.* art. 4(4).

³⁶ Kyoto Protocol, *supra* note 20, art. 3. Unlike Annex II, Annex I includes Eastern European countries that were undergoing an economic transition in the early 1990s.

provisions of the UNFCCC on the adoption of measures to “facilitate adequate adaptation to climate change”,³⁷ adding only that “adaptation technologies and methods for improving spatial planning would improve adaptation to climate change”.³⁸ An Adaptation Fund was established to channel a share of the proceeds of the Clean Development Mechanism — a procedure allowing developed states to implement mitigation action in developing states — in order to “assist developing country Parties that are particularly vulnerable to the adverse effects of climate change to meet the cost of adaptation”.³⁹

Over time, states have agreed on a stronger emphasis on adaptation, often as part of “package deals”, whereby developed country parties offered some concessions to developing country parties in exchange of them taking on enhanced mitigation commitments.⁴⁰ In particular, the 2007 Bali Action Plan and the 2010 Cancún Agreements called for “enhanced action” on climate change adaptation while also considering the role of developing states in enhanced international cooperation on climate change mitigation.⁴¹ Overall, the Paris Agreement

³⁷ KP art. 10(b).

³⁸ KP art. 10(b)(i).

³⁹ KP art. 12(8).

⁴⁰ See Nina Hall and Åsa Persson, *Global Climate Adaptation Governance: Why Is It Not Legally Binding?*, 24 EUROPEAN JOURNAL OF INTERNATIONAL RELATIONS 540, 547 (2018); DANIEL BODANSKY, JUTTA BRUNNÉE AND LAVANYA RAJAMANI, INTERNATIONAL CLIMATE CHANGE LAW 237 (2017).

⁴¹ UNFCCC Decision 1/CP.13, Bali Action Plan ¶1(3), UN Doc. FCCC/CP/2007/6/Add.1, Mar. 14, 2008; UNFCCC Decision 1/CP.16, Cancun Agreements ¶¶11-35, UN Doc. FCCC/CP/2010/7/Add.1, Mar. 15, 2011.

included an adaptation objective, sandwiched between a mitigation objective and a finance objective, of “[i]ncreasing the ability to adapt to the adverse impacts of climate change”.⁴² A dedicated article, Article 7 specifies “the global goal ... of enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change”.⁴³ Article 7 further asserts that “adaptation is a global challenge faced by all with local, subnational, national, regional and international dimensions”⁴⁴ and that “adaptation efforts by developing country Parties shall be recognized”.⁴⁵ The article also affirms that “adaptation action should follow a country-driven, gender-responsive, participatory and fully transparent approach, taking into consideration vulnerable groups, communities and ecosystems”.⁴⁶

Yet, this increasing emphasis on adaptation has come with little clarity about the meaning and implications of this concept. Treaty provisions and COP decisions suggest that the international cooperation on climate change adaptation is not just remedial (finance is only a component of it), nor does it intend to be substantive (adaptation action should “follow a country-driven ... approach”),⁴⁷ begging questions as to what precisely international legal provisions on adaptation seek to achieve. In fact, most treaty provisions or COP decisions on climate change adaptation range from hortatory to nugatory, imposing few if any obligations on states,⁴⁸ while

⁴² Paris Agreement, *supra* note 18, art. 2(1)(b).

⁴³ *Id.* art. 7(1).

⁴⁴ *Id.* art. 7(2).

⁴⁵ *Id.* art. 7(3).

⁴⁶ *Id.* art. 7(5).

⁴⁷ *Id.*

⁴⁸ See further discussion below in section II.A.

nevertheless requiring them to adopt measures and report on their implementation. On the domestic plane, meanwhile, it is noteworthy that virtually no state appears to have adopted any dedicated statutory law on climate change adaptation; states, rather, have mainstreamed climate change adaptation in their efforts in various aspects of sustainable development.⁴⁹

B. Defining Adaptation

The IPCC's Fifth Assessment Report defines adaptation as "[t]he process of adjustment to actual or expected climate and its effects" in order "to moderate or avoid harm or exploit beneficial opportunities."⁵⁰ This definition was changed from the IPCC's previous definition of adaptation in order to reflect what the IPCC presents as "progress in science".⁵¹ The Fourth Assessment Report defined adaptation as measures "to reduce the vulnerability" of human systems.⁵² This left open the question of the inclusion of measures on human migration, displacement, and relocation, which aim at reducing exposure rather than vulnerability.⁵³ The

⁴⁹ See below section II.B.

⁵⁰ 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 118 (2014).

⁵¹ *Id.*

⁵² CLIMATE CHANGE 2007: SYNTHESIS REPORT. CONTRIBUTION OF WORKING GROUPS I, II AND III TO THE FOURTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 76 (2007).

⁵³ In the IPCC conceptual framework, vulnerability and exposure are two independent factors that define the risk of impacts. *See, e.g.,* Field et al., *supra* note 15, at 37. *See generally, e.g.,*

new definition clarifies that adaptation includes any measure that seeks to reduce the harm caused by climate change, including through human mobility.

Early international policy debates sometimes featured mitigation and adaptation as competing priorities, or otherwise approached adaptation as merely a natural phenomenon.⁵⁴ In contrast, there is now a relative consensus among scholars and state representatives that adaptation policies are an essential complement to mitigation action.⁵⁵ It is also well accepted that adaptation could be prompted “through complementary actions across levels, from individuals to Governments”.⁵⁶ The IPCC and scholars have highlighted the complementary roles of national and sub-national governments, the private sector, communities, households, and civil society in promoting adaptation.⁵⁷ Jan McDonald points out the importance of regulation “when future

François Gemenne & Julia Blocher, *How Can Migration Serve Adaptation to Climate Change? Challenges to Fleshing Out a Policy Ideal*, 183 GEOGRAPHICAL JOURNAL 336 (2017).

⁵⁴ Robert W. Kates, *Cautionary Tales: Adaptation and the Global Poor*, 45 CLIMATIC CHANGE 5, 5-6 (2000); E. Lisa F. Schipper, *Conceptual History of Adaptation in the UNFCCC Process*, 15 REVIEW OF EUROPEAN COMMUNITY & INTERNATIONAL ENVIRONMENTAL LAW 82, 83-84 (2006).

⁵⁵ See Field et al., *supra* note 15, at 93.

⁵⁶ *Id.* at 85.

⁵⁷ See, e.g., Heleen L.P. Mees et al., *Exploring the Scope of Public and Private Responsibilities for Climate Adaptation*, 14 JOURNAL OF ENVIRONMENTAL POLICY & PLANNING 305 (2012); Lee Godden et al., *Law, Governance and Risk: Deconstructing the Public-Private Divide in Climate Change Adaptation the Evolution of the Public/Private Divide*, 36 UNSW LAW

climate impacts are potentially irreversible or the costs of preventive measures are significantly lower than longer-term remedial efforts”.⁵⁸ She also notes the role that law could play in “erecting the legal architecture to support fiscal policies for adaptation, such as subsidies, rebates and other incentives.”⁵⁹

Adaptation is not just about *preserving* societies in their current state; rather, it always implies a *transformative* project.⁶⁰ Adaptation implies value judgments about what “adapted societies” ought to be like — or, more concretely, about what needs to be protected from the impacts of climate change (e.g., human lives, property, or ecological resources) with what level of priority and at what costs, and what can be forfeited.⁶¹ Thus, framing an adaptation strategy involves an arbitrage between different types of resources or different levels of risk. Societies may have different levels of readiness and ability to pay for measures that reduce casualties; they may also have different perceptions on the need to invest large amounts of resources to avoid a small chance of disastrous consequences.⁶² Consequently, adaptation is not a purely technical matter

JOURNAL 223 (2013); Daniel A. DeCaro et al., *Legal and Institutional Foundations of Adaptive Environmental Governance*, 22 *ECOLOGY & SOCIETY* 1 (2017).

⁵⁸ McDonald, *Creating Legislative Frameworks*, *supra* note 23, at 126.

⁵⁹ *Id.* at 128.

⁶⁰ Craig, *supra* note 22, at 30.

⁶¹ See generally Gigi Owen, *What Makes Climate Change Adaptation Effective? A Systematic Review of the Literature*, 62 *GLOBAL ENV'T CHANGE* 102071, 2.

⁶² See, e.g., E. Michel-Kerjan et al., *Catastrophe Risk Models for Evaluating Disaster Risk Reduction Investments in Developing Countries*, 33 *RISK ANALYSIS* 984 (2013); Joost

best decided by experts;⁶³ it implies inherently political choices which, when they are made by a state, are best made through participatory and deliberative processes led by the political branches of the government.⁶⁴

It is difficult to delimit the scope of adaptation action. Adaptation is highly context-specific, “with no single approach for reducing risks appropriate across all settings”.⁶⁵ Craig justly observes that “adaptation measures can be as broad-ranging as the scope of climate change impacts”.⁶⁶ These impacts, Craig highlights, are “ever-changing, often unpredictable, and subject to feedback mechanisms that may not be completely understood and that may change over time, often leading to nonlinear alterations of ecosystems and their services.”⁶⁷ Consequently, measures on climate change adaptation could extend to many different aspects

Buurman & Vladan Babovic, *Adaptation Pathways and Real Options Analysis: An Approach to Deep Uncertainty in Climate Change Adaptation Policies*, 35 POLICY & SOCIETY 137 (2016).

⁶³ See Siri H. Eriksen et al., *Reframing Adaptation: The Political Nature of Climate Change Adaptation*, 35 GLOBAL ENVIRONMENTAL CHANGE 523 (2015); and generally MIKE HULME, *WHY WE DISAGREE ABOUT CLIMATE CHANGE: UNDERSTANDING CONTROVERSY, INACTION AND OPPORTUNITY* (University Press, 2009).

⁶⁴ See, e.g., Stephan Hügel & Anna R. Davies, *Public Participation, Engagement, and Climate Change Adaptation: A Review of the Research Literature*, 11 WIREs Climate Change e645, 12 (2020); Rebecca Romsdahl et al., *Action on Climate Change Requires Deliberative Framing at Local Governance Level*, 149 CLIMATIC CHANGE 277 (2018).

⁶⁵ Field et al., *supra* note 15, at 85.

⁶⁶ Craig, *supra* note 22, at 21.

⁶⁷ *Id.* at 29.

of regulation. In practice, measures that are presented as adaptation action often relate to areas of governance typically associated with sustainable development, touching on issues of land-use planning, agricultural policies, construction standards, freshwater management, poverty alleviation, public health policies, ecological conservation, and so on.⁶⁸

Determining the scope of climate change adaptation raises questions about what, concretely, can be attributed to climate change. Contemporary debates on climate change adaptation are often influenced by scientific studies that seek to attribute particular extreme weather events (e.g., hurricanes, heatwaves or floods) to anthropogenic climate change.⁶⁹ One must keep in mind, however, that these studies are not uncontroversial in scientific circles. Critical voices have warned against the simplistic and misleading conclusions echoed in the media. Greg Lusk, for instance, has noted that “[t]he attribution of specific events just doesn’t have the purported social benefits that motivate its use and development”;⁷⁰ in particular, event attribution “is unlikely to substantially contribute to litigation or adaptation”.⁷¹ As event attribution is

⁶⁸ E.L.F. Schipper et al., *The Debate: Is Global Development Adapting to Climate Change?*, 18 WORLD DEVELOPMENT PERSPECTIVES 100205 (2020).

⁶⁹ See, e.g., Aglaé Jézéquel et al., *Behind the Veil of Extreme Event Attribution*, 149 CLIMATIC CHANGE 367 (2018).

⁷⁰ Greg Lusk, *Attributing Individual Extreme Events to Anthropogenic Factors Is Not as Useful as You Might Think*, in CONTEMPORARY CLIMATE CHANGE DEBATES: A STUDENT PRIMER 42, 47 (Mike Hulme ed., 2020).

⁷¹ Greg Lusk, *The Social Utility of Event Attribution: Liability, Adaptation, and Justice-Based Loss and Damage*, 143 CLIMATIC CHANGE 201, 201 (2017). See also Mike Hulme, *Attributing*

probabilistic, it can seldom determine that a weather event could not have occurred *but for* climate change. This observation applies mainly to sudden-onset events whose likelihood is increasing in the context of climate change, but it may also apply to some extent to slow-onset events such as coastal flooding. The impacts of sea-level rise, for now at least, cannot always be clearly distinguished from other factors that affect coastal flooding, such as erosion (natural and possibly exacerbated by human activities)⁷² and subsidence (a natural phenomenon that can be exacerbated for instance by oil, gas or groundwater extraction).⁷³

Even when climate change can be construed as *the* cause of a physical event, the same may not be true of its social implications. Physical events, whether sudden- and slow-onset, do not affect societies in a vacuum. It is common wisdom, in disaster risk reduction circles, that there is no such thing as an entirely “natural” disaster — a disaster only takes place when a society is vulnerable and exposed to a physical trigger.⁷⁴ Individuals are affected by a disaster because they are exposed to it — they are situated at the place where the disaster occurs — and vulnerable to it — the house in which they live, for instance, is not built to resist the event.

Weather Extremes to “Climate Change”: A Review, 38 *PROGRESS IN PHYSICAL GEOGRAPHY: EARTH & ENVIRONMENT* 499 (2014).

⁷² See generally Poh Poh Wong et al., *Coastal Systems and Low-Lying Areas*, in *CLIMATE CHANGE 2014*, *supra* note 5, at 361, 372-374.

⁷³ *Id.* at 369. See, e.g., H.Z. Abidin et al., *On correlation between urban development, land subsidence and flooding phenomena in Jakarta*, 370 *Proceedings of the International Association of Hydrological Sciences* 15 (2015).

⁷⁴ See generally *supra* note 53.

Most of the time, observed variations in the impacts from extreme weather events have far more to do with social, economic, demographic, and other factors, than with climate change.⁷⁵

As it is difficult to attribute events to climate change, it is also difficult “to distinguish climate adaptation from related activities, such as reducing risk to environmental disasters or alleviating poverty”.⁷⁶ What is considered as “adaptation action” typically relates to efforts aimed at reducing exposure and vulnerability to physical events that climate change makes more likely, for instance strong hurricanes, drought, or coastal flooding. The outcomes of such measures, however, are never confined to climate change adaptation. For instance, new hurricane shelters are useful whenever a hurricane affects an area, whether or not the hurricane can be attributed to climate change. The policy objective of adapting to climate change may contribute to justify the construction of new hurricane shelters, but the ultimate decision has to build on a broader disaster-risk management perspective.

C. The Connections between Adaptation and the Law

The law relates to climate change adaptation in various ways.⁷⁷ First, it can hinder adaptation when it imposes a stability in social relations (e.g., contracts) that prevents spontaneous

⁷⁵ See, e.g., Field et al., *supra* note 15, at 71; Fabian Barthel & Eric Neumayer, *A Trend Analysis of Normalized Insured Damage from Natural Disasters*, 113 CLIMATIC CHANGE 215, 215 (2012).

⁷⁶ Owen, *supra* note 61, at 1.

⁷⁷ See, e.g., Lea Berrang-Ford et al., *What Drives National Adaptation? A Global Assessment*, 124 CLIMATIC CHANGE 441 (2014).

adaptation efforts. Arnold, for instance, suggests that “[l]egal systems typically have not done a very good job at facilitating flexible responses to extraordinary situations that have many causes and effects and are continually changing.”⁷⁸ Second, legal norms can facilitate adaptation by introducing “more flexibility” to allow actors to adapt.⁷⁹ For instance, as freshwater resources are set to change in previously unpredictable ways, arrangements to regulate their concurrent use among states, subnational governments or private actors will often need to be reconsidered. Third, the law may incorporate new rules and principles aimed at promoting adaptation, in particular by regulating activities such as urban development or construction standards in order to reduce vulnerability and exposure to the impacts of climate change.

Ruhl and Salzman have argued that the need to adapt to climate change challenges the assumption of stationarity underlying the law: in various aspects of governance, new norms must no longer be based entirely on the premise that the future will be like the past.⁸⁰ Thus, climate change adaptation will require the adaptation of various fields of the law, such as

⁷⁸ Craig Anthony Arnold, *Adaptive Law*, in RESEARCH HANDBOOK ON CLIMATE DISASTER LAW, *supra* note 29, at 169. *See also* Craig Anthony Arnold and Lance H. Gunderson, *Adaptive Law and Resilience*, 43 ENVIRONMENTAL LAW REPORTER NEWS & ANALYSIS 10426 (2013); Alejandro E. Camacho, *Transforming the Means and Ends of Natural Resources Management Adaptation and Resiliency in Legal Systems*, 89 NORTH CAROLINA LAW REVIEW 1405 (2010).

⁷⁹ Robin Kundis Craig et al., *Balancing Stability and Flexibility in Adaptive Governance: An Analysis of Tools Available in US Environmental Law*, 22 ECOLOGY & SOCIETY 1 (2017).

⁸⁰ J.B. Ruhl & James Salzman, *Climate Change Meets the Law of the Horse*, 62 DUKE LAW JOURNAL 975, 993 (2013).

environmental law, water law, and land-use law,⁸¹ or even rules and principles applicable to particular issues such as littoral property rights.⁸² As Wenta, McDonald, and McGee note, the adaptation of the law will take place through statutory reforms, but also possibly through the evolution of legal concepts and doctrines, including through precedents.⁸³ For instance, case-law definitions of the duty of care, in the common law of negligence, may have to develop in ways that take the foreseeable impacts of climate change into account.⁸⁴

The observation that the law must adapt to climate change may appear obvious, almost banal. After all, the law is not cast in stone; it is constantly evolving in response to changes in the societies, economies, and environments in which it applies. Yet, climate change adaptation may call for more systematic evolution — not just a one-off reform, but a reform towards a more adaptive law, one which may for instance allow more discretion in the application of pre-existing rules when relevant circumstances have changed.⁸⁵ Procedural legal rules on adaptation could require that legal and policy reforms are considered on a regular basis — thus promoting a continuing evolution of the law in response to the changing circumstances in which it applies, including changes in the prevalent climatic conditions.

⁸¹ *Id.* at 1010.

⁸² *Id.* at 994.

⁸³ Joseph Wenta et al., *Enhancing Resilience and Justice in Climate Adaptation Laws*, 8 TRANSNATIONAL ENVIRONMENTAL LAW 89, 108 (2019).

⁸⁴ See generally, on the adaptation of tort law, R. Henry Weaver & Douglas A. Kysar, *Courting Disaster: Climate Change and the Adjudication of Catastrophe*, 93 NOTRE DAME L. REV. 295 (2017).

⁸⁵ Wenta, *supra* note 83, at 108.

Beside the *adaptation of existing laws*, a more controversial question concerns the need to *adopt laws* — including substantive rules and principles — specifically dedicated to climate change adaptation,⁸⁶ and, more broadly, the need to create a new field of law⁸⁷ or policy,⁸⁸ new institutions,⁸⁹ rather than merely mainstreaming certain considerations in existing fields and institutions. This question needs to be weighed in relation to climate change adaptation in general, but also in relation to particular aspects of it, for instance in response to calls to treat “climate disasters” and “climate migration” as distinct governance issues.

Using an analogy with the contrived notion of a “horse law”, Ruhl and Salzman showed that applying the law to an issues does not necessarily involve the creation or imply the existence of a distinct legal field: no unique set of rules and principles arise when the law is applied to activities whose only commonality is that they involve horses, alternatively as meat or racing devices.⁹⁰ Ruhl and Salzman suggest that “[m]ost of the law and legal institutions will see climate change adaptation as just another set of challenging issues to work through the

⁸⁶ Victor B. Flatt, *Adapting Laws for a Changing World: A Systemic Approach to Climate Change Adaptation* *Climate Change Special Issue*, 64 *Florida Law Review* 269 (2012).

⁸⁷ See in particular Ruhl & Salzman, *supra* note 80.

⁸⁸ See, e.g., Schipper, *supra* note 68.

⁸⁹ See, e.g., Thomas J. Timberlake & Courtney A. Schultz, *Policy, Practice, and Partnerships for Climate Change Adaptation on US National Forests*, 144 *CLIMATIC CHANGE* 257 (2017).

⁹⁰ Ruhl & Salzman, *supra* note 80.

system”.⁹¹ For land law, for instance, “climate change would just be a new purpose” justifying building restrictions.⁹²

II. The Paucity of Legal Norms on Climate Change Adaptation

This section argues that there is currently no distinct set of substantive rules and principles dedicated to promoting climate change adaptation. The literature on climate change adaptation and the law often assumes or asserts the existence of a law on climate change adaptation without demonstrating it.⁹³ Some authors concede the “inherent difficulty” that “adaptation measures have to be implemented through a wide range of policies,”⁹⁴ but then carry on talking about “climate change adaptation law” as if it was a distinct set of rules and principles. This section shows that this field of law currently exists neither in international law, nor in domestic law.

A. The Dearth of International Norms on Climate Change Adaptation

⁹¹ *Id.* at 1013.

⁹² *Id.*

⁹³ See, e.g., Arnold, *supra* note 78; RESEARCH HANDBOOK ON CLIMATE CHANGE ADAPTATION LAW, *supra* note 21.

⁹⁴ Jonathan Verschuuren, *Introduction*, in RESEARCH HANDBOOK ON CLIMATE CHANGE ADAPTATION LAW, *supra* note 21, at 1, 3. See also Jacqueline Peel, *Climate Change Law: The Emergence of a New Legal Discipline*, 32 MELBOURNE UNIVERSITY LAW REVIEW 922 (2008).

Verschuuren suggests that climate change adaptation law “originates at the international level”⁹⁵ and that the UNFCCC imposes an “impressive list of adaptation duties”.⁹⁶ These duties may exist, but, in closer scrutiny, the list is hardly impressive. The main commitment on adaptation arising from the UNFCCC, under Article 4(1)(b), is to “formulate, implement, publish and regularly update national ... programmes containing ... measures to facilitate adequate adaptation to climate change”.⁹⁷ It is difficult to imagine any realistic hypothesis where a state would not already have at least one programme containing some measures that facilitate climate change adaptation in one way or another, for instance by regulating land use in coastal areas, managing freshwater resources, reducing risks related to natural disasters, pursuing poverty eradication, or developing public health infrastructure. It is even more difficult to imagine a hypothesis where this state would not already be in breach of various international legal obligations, for instance obligations to take appropriate measures to protect the human rights of individuals within its jurisdiction.⁹⁸ In other words, it is unclear what

⁹⁵ Jonathan Verschuuren, *Climate Change Adaptation under the United Nations Framework Convention on Climate Change and Related Documents*, in RESEARCH HANDBOOK ON CLIMATE CHANGE ADAPTATION LAW, *supra* note 21, at 16.

⁹⁶ *Id.* at 18.

⁹⁷ UNFCCC, *supra* note 17, art. 4(1)(b).

⁹⁸ *See, e.g.*, International Covenant on Civil and Political Rights, art. 2(1), Dec. 16, 1966, 999 U.N.T.S. 171; International Covenant on Economic, Cultural and Social Rights, art. 2(1), Dec. 16, 1966, 993 U.N.T.S. 3; Convention on the Rights of the Child, art. 2(1), Nov. 20, 1989, 1577 U.N.T.S. 3. *See also* Draft Articles on the Protection of Persons in the Event of Disasters, [2016] 2(2) YEARBOOK OF THE INTERNATIONAL LAW COMMISSION 17; Sendai Framework for Disaster Risk Reduction 2015-2030 (2015); and generally, on the interpretation of obligation as

Article 4(1)(b) requires states to do, and even more difficult how this could do anything else than reaffirm pre-existing obligations.

Article 4(1)(e) requires parties to “[c]ooperate in preparing for adaptation to the impacts of climate change”, including by developing and elaborating “appropriate and integrated plans for coastal zone management, water resources and agriculture, and for the protection and rehabilitation of areas, particularly in Africa, affected by drought and desertification, as well as floods”.⁹⁹ This list is not prescriptive —landlock countries are obviously not required to adopt plans for coastal zone management — but merely illustrative of the type of measures that states may consider implementing under Article 4(1)(b). Under Article 4(1)(f), parties must further “[t]ake climate change consideration into account, to the extent feasible, in their relevant social, economic and environmental policies and actions”,¹⁰⁰ a provision that applies both to climate change mitigation and adaptation. This obligation is purely procedural (“take ... into consideration”), and it is so heavily qualified (“to the extent feasible”, “relevant”) that it may be entirely ineffective.

requiring the state to take “appropriate measures”, Human Rights Committee, *General Comment No. 31: The Nature of the General Obligation Imposed on States Parties to the Covenant* ¶8, U.N. Doc. CCPR/C/21/Rev.1/Add.13 (May 26, 2004); Eur. Ct. H.R., *Stoicescu v. Romania* ¶59, Application 9718/03 (July 26, 2011); *Velásquez-Rodríguez v. Honduras*, Merits, Judgment, Inter-Am. Ct. H.R. (ser. C) No. 4, ¶172 (July 29, 1988); WALTER KÄLIN & JÖRG KÜNZLI, *THE LAW OF INTERNATIONAL HUMAN RIGHTS PROTECTION* 87-105 (2nd ed., 2019); Knox, *supra* note 8, ¶¶47–61.

⁹⁹ *Id.* art. 4(1)(e).

¹⁰⁰ UNFCCC, *supra* note 17, art. 4(1)(f).

Article 4(4) further requires the developed country parties listed in Annex II to “assist the developing country parties that are particularly vulnerable to the adverse effects of climate change in meeting costs of adaptation to these effects”.¹⁰¹ However, this provision neither requires Annex II parties to cover *all* the costs of adaptation,¹⁰² nor creates any obligation for any Annex II party to pay any specific amount.¹⁰³ Under Article 4(8), all parties agreed to “give full consideration to what actions are necessary under the Convention, including actions related to funding, insurance and the transfer of technology, to meet the specific needs and concerns of developing country Parties arising from the adverse effects of climate change”, referring in particular to “[s]mall island countries”, as well as “[c]ountries with low-lying coastal areas”, “with arid and semi-arid areas, forested areas and areas liable to forest decay”, “with areas prone to natural disasters” or to “drought and desertification”, or “with areas with fragile ecosystems, including mountainous ecosystems”, as well as “[l]and-locked and transit countries” and “[c]ountries with areas of high urban atmospheric pollution”.¹⁰⁴ It is far from

¹⁰¹ *Id.* art. 4(4).

¹⁰² Daniel Bodansky, *The United Nations Framework Convention on Climate Change: A Commentary*, 18 *YALE JOURNAL OF INTERNATIONAL LAW* 451, 528 (1993).

¹⁰³ On the existence of financial obligations in climate governance in general (and in particular on climate change mitigation), see Yulia Yamineva, *A Legal Perspective on Climate Finance Debates: How Constructive Is the Current Norm Ambiguity?*, in *DEBATING CLIMATE LAW* (Benoit Mayer & Alexander Zahar eds, 2021); ALEXANDER ZAHAR, *CLIMATE CHANGE FINANCE AND INTERNATIONAL LAW* 71-74 (2016); Alexander Zahar, *The Paris Agreement and the Gradual Development of a Law on Climate Finance*, 6 *CLIMATE LAW* 75, 76-77 (2016).

¹⁰⁴ UNFCCC, *supra* note 17, art. 4(8).

clear what, concretely, such “full consideration” requires states to do. On the other hand, the list of grounds justifying special consideration is so long as to include virtually every developing state.¹⁰⁵

The Kyoto Protocol did not make up for the lack of obligations on climate change adaptation in the UNFCCC. After all, the Protocol was negotiated¹⁰⁶ and adopted¹⁰⁷ based on a clear understanding that it would not be introducing any new commitments for developing country parties (i.e. parties not included in Annex I) — its objective was to strengthen the commitments

¹⁰⁵ Thus, among the 154 developing country parties to the UNFCCC, 40 are generally considered as small island developing states and 32 are landlocked countries: see respectively “Small Island Developing States”, <https://sustainabledevelopment.un.org/topics/sids/list> (last accessed 22 January 2021); and UNCTAD, “List of Landlocked Developing Countries”, <https://unctad.org/topic/landlocked-developing-countries/list-of-LLDCs> (last accessed 22 January 2021), while many others have an arid- or semi-arid climate, suffer from desertification, flood, cyclones, or urban air pollution. Once all countries with these issues were removed from the list, based on information from the CIA World Factbook, only six countries remained (Democratic People’s Republic of Korea, El Salvador, Gabon, Guatemala, Liberia and Panama). These countries could however require “full consideration” under Article 4(8) on other reasons, for instance because they have low-lying coastal areas, areas liable to forest decay, or areas with fragile ecosystem. *See generally* CIA, The World Factbook, <https://www.cia.gov/the-world-factbook/> (last accessed 22 January 2021).

¹⁰⁶ UNFCCC Decision 1/CP.1, The Berlin Mandate ¶2(b), UN Doc. FCCC/CP/1995/7/Add.1, June 6, 1995.

¹⁰⁷ Kyoto Protocol, *supra* note 20, art. 10 (chapeau).

of developed country parties on the mitigation of climate change by defining quantified emission limitation and reduction commitments.¹⁰⁸ Beside establishing a financial channel to support adaptation in developing countries,¹⁰⁹ the Protocol's contribution to the climate change adaptation was limited to the reaffirmation of the general commitments the parties had made under the UNFCCC.¹¹⁰ The adaptation programmes and projects funded by the Kyoto Protocol's Adaptation Fund are to follow "[a] country-driven approach" to adaptation.¹¹¹

Sharing Verschuuren's optimism, scholars have hailed Article 7 of the Paris Agreement as "a significant step forward"¹¹² and the foundation of "a new framework or regime"¹¹³ on climate change adaptation. Here again, however, this vindication of an international law on climate change adaptation is not supported by a dispassionate reading of the treaty. Only two provisions

¹⁰⁸ See The Berlin Mandate, *supra* note 106, para. 2(a); and Kyoto Protocol, *supra* note 20, Pmbl. ¶6 and art. 3(1).

¹⁰⁹ See Kyoto Protocol, *supra* note 20, art. 12(8). *See also* Kyoto Protocol decision 28/CMP.1 ¶1, UN Doc. FCCC/KP/CMP/2005/8/Add.4, Mar. 30, 2006.

¹¹⁰ *Id.*, art. 10.

¹¹¹ Decision 28/CMP.1, *supra* note 109, para. 3(a).

¹¹² Alexandra Lesnikowski et al., *What Does the Paris Agreement Mean for Adaptation?*, 17 CLIMATE POLICY 825, 825 (2017).

¹¹³ Irene Suárez Pérez & Angela Churie Kallhauge, *Adaptation (Article 7)*, in *The Paris Agreement on Climate Change: Analysis and Commentary* 196, 221 (Daniel Klein et al. eds, 2017).

of Article 7 are phrased as obligations (i.e., with the word “shall” applied to legal persons).¹¹⁴ Like the relevant provisions of the UNFCCC, these two provisions are purely procedural, vague, and heavily qualified. Moreover, they are largely duplicative of the commitments defined by the UNFCCC. The first binding provision requires parties, “as appropriate,” to “engage in adaptation planning processes and the implementation of actions, including the development or enhancement of relevant plans, policies and/or contributions”.¹¹⁵ The second binding provision requires parties, if they submit an adaptation communication (which they are not obliged to do),¹¹⁶ and “if appropriate”, to submit and update this communication “periodically, as a component of or in conjunction with other communications or documents”.¹¹⁷ A decision of the Meeting of the Parties to the Paris Agreement listing what “Parties that choose to submit an adaptation communication”¹¹⁸ could include in the said communication further highlights

¹¹⁴ Comp. Lavanya Rajamani, *The 2015 Paris Agreement: Interplay Between Hard, Soft and Non-Obligations*, 28 *Journal of Environmental Law* 337, 344-351 (2016), suggesting that Article 7(13) creates a “hard” obligation while Articles 7(7) and 7(10) create “soft” obligations. Yet, Article 7(13) uses the word “shall”, but in the passive form, without indicating who would bear the putative obligation (“support shall be provided”). Article 7(7) and (10) use the word “should”, which does not indicate a legal obligation. The absence of an obligation under Article 7(10) was confirmed by the Meeting of the Parties: see Paris Agreement Decision 9/CMA.1 ¶6, UN Doc. FCCC/PA/CMA/2019/6/Add.1, Mar. 16, 2020.

¹¹⁵ Paris Agreement, *supra* note 18, art. 7(9).

¹¹⁶ See *id.* art. 7(10) (“should”).

¹¹⁷ *Id.* art. 7(11).

¹¹⁸ Decision 9/CMA.1, *supra* note 114, ¶6.

that this communication “[s]hall not pose any additional burden on developing country Parties, is not a basis for comparison between Parties and is not subject to review”.¹¹⁹

The Paris Agreement proclaims a “global goal on adaptation”, but this goal is defined in terms that essentially reiterate the definition of adaptation — parties aim at “enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change”.¹²⁰ Overall, this goal does not translate into any specific legal norms: as a saying widely attributed to Antoine de Saint-Exupéry suggests, “a goal without a plan is just a wish”.

Further, the Paris Agreement does not create any effective obligation on its parties to fund adaptation in developing states. Parties do “recognize the importance of support for ... adaptation efforts”¹²¹ and even note that “enhanced international support shall be provided to developing country Parties”,¹²² but they do not define any obligation on any state to provide such support.¹²³ Thus, Bodansky points out that “[m]ost of the provisions on adaptation ... are expressed, not as legal obligations, but rather as recommendations, expectations or understandings.”¹²⁴ For the most part, Article 7 does little more than taking act of states’ action

¹¹⁹ *Id.*, ¶2(b).

¹²⁰ Paris Agreement, *supra* note 18, art. 7(1).

¹²¹ *Id.* art. 7(6).

¹²² *Id.* art. 7(13).

¹²³ See Zahar, *supra* note 103, at 77; and generally Yamineva, *supra* note 103.

¹²⁴ Daniel Bodansky, *The Legal Character of the Paris Agreement*, 25 REVIEW OF EUROPEAN COMMUNITY, COMPARATIVE AND INTERNATIONAL ENVIRONMENTAL LAW 142, 147 (2016). See also Hall and Persson, *supra* note 40, 552-553; Rajamani, *supra* note 114, at 344-351.

on climate change adaptation,¹²⁵ enabling parties to submit adaptation communications to be made publicly available through a public registry maintained by the Convention's secretariat.¹²⁶

B. The Dearth of Domestic Law on Climate Change Adaptation

Given the paucity of international norms on adaptation on the international plane, one could think that substantive rules and principles on climate change adaptation are to be found, instead, in domestic law. When adaptation is viewed not as a matter of compensation (by responsible states) but rather as a matter of protection (by territorially competent states), it is a matter that falls naturally within the realm of domestic law rather than international law. The concept of subsidiarity suggests that the value judgments inherent to any adaptation strategy should be made at the national (or subnational) level rather than on the international plane. In this sense, the Paris Agreement notes that adaptation action “should follow a country-driven ... approach”.¹²⁷ Likewise, Peel points out that adaptation is “naturally suited to consideration at a local level” since “the benefits of adaptation measures tend to be quite localised”.¹²⁸ Banda asserts that “adaptation is still largely treated as a *local* matter”.¹²⁹

¹²⁵ Paris Agreement, *supra* note 18, art. 7(2)-(4), (6), and (14).

¹²⁶ *Id.* art. 7(10)-(12).

¹²⁷ *Id.* art. 7(5).

¹²⁸ Peel, *supra* note 94, at 951.

¹²⁹ Banda, *supra* note 21, at 1031 [emphasis in the original].

However, there is little evidence of law-making at the national level. In sharp contrast to the proliferation of laws on climate change mitigation,¹³⁰ States have virtually no laws dedicated specifically to climate change adaptation. By contrast to its advanced legislation on climate change mitigation,¹³¹ for instance, the EU has not adopted any binding document on climate change adaptation — much to the regret of some observers.¹³² A database of “Climate Change Laws of the World”, developed by the Grantham Research Institute at the London School of Economics, lists 2,070 laws and policies on climate change. Among them are 185 documents that the curators considered to fall — exclusively or not — within the framework of adaptation.¹³³ These results include multiple policies dedicated to climate change adaptation, in particular planning documents, and fewer statutes. The statutes they include are not generally dedicated to climate change adaptation, and all but one fall within one of the two following hypotheses.

First, there are statutes on climate action generally, which include some provisions on adaptation as essentially an afterthought in a document focusing mostly on climate change mitigation. These provisions are vague and, when they create any obligations at all, these obligations are purely procedural. For instance, the UK’s Climate Change Act contains a few

¹³⁰ See *supra* notes 11-1312.

¹³¹ See, e.g., Directive 2003/87, *supra* note 12; Regulation 2019/1242, *supra* note 13; Regulation 2019/631, *supra* note 13.

¹³² See, e.g., Verschuuren, *supra* note 95, at 30.

¹³³ See Grantham Research Institute on Climate Change and the Environment, Climate Change Laws of the World (database), available at <www.lse.ac.uk/GranthamInstitute/climate-change-laws-of-the-world/>, accessed on 29 Oct. 2020.

procedural provisions on adaptation, essentially setting up a mechanism to assess climate-related risks and adopt policy objectives¹³⁴ in a statute otherwise focused on climate change mitigation.¹³⁵ Kenya's Climate Change Act mentions adaptation among the areas in which the government must define policy objectives and in which actions under a domestic Climate Change Fund can be financed.¹³⁶

Second, the database lists statutes focusing on areas of governance that are affected by climate change, and include some provisions requiring consideration for climate change adaptation in other areas of governance. For instance, Vietnam's Law on Natural Disaster Prevention and Control requires climate change to be taken into account, in particular, when devising national and local strategies on disaster risk reduction.¹³⁷ Mozambique's framework law on disaster

¹³⁴ Climate Change Act 2008, c. 27 §§56-70 (UK).

¹³⁵ The Climate Change Act establishes in particular a mitigation target (*id.* §1) and carbon budgets (*id.* §4), sets up a committee in charge of advising on mitigation action (*id.* §§32-38). It also implements a cap-and-trade mechanism (*id.*, §§44-45). It establishes waste-reduction schemes (*id.* §71) and renewable fuel requirements (*id.* §79). It updates a carbon emission reduction target applicable to power utilities (*id.* §79).

¹³⁶ Climate Change Act (2016) Cap. 11 §§14(1)(a), 25(8)(c) (Kenya). See however Clarice Wambua, *The Kenya Climate Change Act 2016: Emerging Lessons from a Pioneer Law*, 13 CARBON & CLIMATE LAW REVIEW 257, 261 (2019), suggesting that, “[c]ompared to other framework laws on climate change, [Kenya’s Climate Change] Act is relatively strong on adaptation”.

¹³⁷ Law on Natural Disaster Prevention on Control 2013 arts. 4(6), 14(3)(d), 15(4)(b), 15(5)(b) and 15(6)(b), No. 33/2013/QH13 (Viet.).

management merely points out the importance of including consideration for climate change in disaster preparedness.¹³⁸ These obligations do not create a legal field of climate change adaptation law, but merely ensure that climate change is duly taken into account, as a policy objective, in relevant pre-existing procedures.

The database's only instance of a law specifically dedicated to climate change adaptation is Japan's Climate Change Adaptation Act, 2018.¹³⁹ This statute highlights the moral responsibility of the national and local government, companies, and the public, to contribute to the adaptation to climate change,¹⁴⁰ and it defines the role of various public bodies in preparing adaptation strategies in consultation with companies and the public on the basis of scientific observation.¹⁴¹ Thus, Japan's Adaptation Act essentially incorporates some procedural components of the state's national adaptation plan into law.¹⁴² It does not create any substantive rights and obligations for corporations or citizens in the same way as laws on climate change

¹³⁸ Law 15/2014 Establishing the Framework for Disaster Management, Including Prevention and Mitigation art. 11, [2014] 50:I *Boletim da República* 1291 (Mozam.).

¹³⁹ KIKŌ HENDŌ TEKIŌHŌ (Climate Change Adaptation Act) 気候変動適応法 2018, <https://climate-laws.org/geographies/japan/laws/climate-change-adaptation-act> (last visited 21 January 2021).

¹⁴⁰ *Id.* §§3-6.

¹⁴¹ *Id.* §§7-15.

¹⁴² Cabinet Division (Japan), *National Plan for Adaptation to the Impacts of Climate Change* (27 November 2015), <https://www.env.go.jp/en/focus/docs/files/20151127-101.pdf> (last visited 21 January 2021).

mitigation do. It appears unlikely that any provision of this statute could be enforced by a court. It is, in any case, an isolated exception.

The paucity of dedicated domestic legal instruments does not mean that states are not implementing action on climate change adaptation. States have been reporting on their strategy for climate change adaptation, especially when this has allowed them to apply for international funding, for instance through the National Adaptation Programmes of Action funded by the Kyoto Protocol's Adaptation Fund.¹⁴³ As noted above, more than four out of five Intended Nationally Determined Contributions included an adaptation component.¹⁴⁴ The trend, thus, is not limited to developing countries eligible for international financial assistance. Massey and colleagues revealed a rapid diffusion of policy objectives on climate change adaptation, especially in European countries.¹⁴⁵

States are adopting and implementing strategies on climate change adaptation, but they are doing so by mainstreaming adaptation in existing laws and policies rather than by creating a separate legal, policy, or institutional field.¹⁴⁶ McDonald has showed that statutory reforms implemented in various Australian states and territories to prepare for sea-level rise rely on

¹⁴³ UNFCCC Decision 28/CP.7, UN Doc. FCCC/CP/2001/13/Add.4, Jan. 21, 2002.

¹⁴⁴ See *supra* note 19.

¹⁴⁵ Eric Massey et al., *Climate Policy Innovation: The Adoption and Diffusion of Adaptation Policies across Europe*, 29 GLOBAL ENVIRONMENTAL CHANGE 434 (2014).

¹⁴⁶ See, e.g., Xiangbai He, *Legal and Policy Pathways of Climate Change Adaptation: Comparative Analysis of the Adaptation Practices in the United States, Australia and China*, 7 TRANSNATIONAL ENVIRONMENTAL LAW 347, 347 (2018).

“the interplay of land use planning, coastal management, climate change, emergency management and, in some cases, conservation laws”.¹⁴⁷ She concludes that “all of the legislative responses to projected sea-level rise involve refinements to existing frameworks rather than entirely new statutory schemes.”¹⁴⁸

III. The Lack of Justification for a Substantive Law on Adaptation

The previous section has shown that states have not adopted any distinct set of substantive rules and principles dedicated to promoting climate change adaptation. This section turns to a more controversial question: whether states *ought to* adopt substantive rules and principles on climate change adaptation, or at least on certain aspects of it, such as climate migration or climate disasters.

The following subsections identify and refute the three main arguments that could justify the adoption of a specific set of substantive rules and principles on climate change adaptation. These arguments present climate change adaptation law as, respectively, the response to a collective action problem, the management of phenomena attributable to climate change, and a way to provide reparation to the states injured by the wrongful conduct of other states. The first subsection shows that the justification for international cooperation on climate change mitigation — the existence of a collective action problem — does not apply to climate change adaptation. The second subsection suggests that attribution is likely impossible, and at any rate

¹⁴⁷ McDonald, *Creating Legislative Frameworks*, *supra* note 23, at 129.

¹⁴⁸ *Id.* See also Jan McDonald, *A Short History of Climate Adaptation Law in Australia*, 4 CLIMATE LAW 150 (2014).

irrelevant, in determining how states ought to address adverse events that climate change may make more likely to unfold. Lastly, the third subsection concedes that reparation may justify specific legal rules and principles, but not the sort of rules and principles that the concept of climate change adaptation would entail.

A. Adaptation Law as the Response to a Collective Action Problem?

The parallel between climate change mitigation and adaptation is sometimes thought to suggest that both are to be governed by international law. This parallel was suggested early on in international negotiations, for instance when the UN General Assembly suggested that the negotiations which would lead to the adoption of the UNFCCC should seek to define “appropriate commitments for action to combat climate change and its adverse effects”.¹⁴⁹ This parallel was never systematically put in question. In 2015, the General Assembly asserted again that “[t]he global nature of climate change calls for the widest possible international cooperation aimed at accelerating the reduction of global [GHG] emissions and addressing adaptation to the adverse impacts of climate change.”¹⁵⁰ However, the analogy between mitigation and adaptation action is weak and misleading. Both objectives relate to a global phenomenon, but not in the same way, and adaptation does not share the characteristics of mitigation that justify international cooperation in that regard.

¹⁴⁹ G.A. Res. 45/212, Protection of Global Climate for Present and Future Generations pmbl. ¶2 (Dec. 21, 1990).

¹⁵⁰ G.A. Res. 70/1, *supra* note 16, ¶31.

Climate change mitigation requires international cooperation because it has all the hallmarks of a collective action problem. Climate change results from global GHG emissions whose sources are scattered among states. It is *collectively* rational for states to invest in substantial efforts to mitigate climate change in order to avoid its worst consequences, but it is also *individually* rational for each state to seek to avoid the costs of implementing mitigation action — each state, pursuing its own interest, would seek to free-ride on the efforts implemented by others, resulting in a worse situation for every state.¹⁵¹ International law could play an essential role in dissuading free-riding, that is to say, in ensuring that each state contributes its “fair share” in global mitigation action. Climate treaties have tried to perform this task by defining commitments¹⁵² and establishing some sorts of sanction for non-compliance.¹⁵³

¹⁵¹ STEPHEN M. GARDINER, *A PERFECT MORAL STORM: THE ETHICAL TRAGEDY OF CLIMATE CHANGE* 26 (2011); ERIC A. POSNER & DAVID WEISBACH, *CLIMATE CHANGE JUSTICE* 170 (2010).

¹⁵² See UNFCCC, *supra* note 17, art. 4(1)(b), 4(2)(a)-(b); Kyoto Protocol, *supra* note 20, art. 3; Paris Agreement, *supra* note 18, art. 4(2). On the mitigation obligations arising under the Paris Agreement, see Benoit Mayer, *Article 4: Mitigation*, in *THE PARIS AGREEMENT ON CLIMATE CHANGE: A COMMENTARY* (Geert van Calster & Leonie Reins eds, forthcoming).

¹⁵³ See UNFCCC, *supra* note 17, art. 13 (but note that no decision of implementation has been adopted); Kyoto Protocol, *supra* note 20, art. 3, art. 18; Paris Agreement, *supra* note 18, art. 15. *See generally* ALEXANDER ZAHAR, *INTERNATIONAL CLIMATE CHANGE LAW AND STATE COMPLIANCE* (2014); Alexander Zahar, *A Bottom-Up Compliance Mechanism for the Paris Agreement*, 1 *CHINESE JOURNAL OF ENVIRONMENTAL LAW* 69 (2017); Gu Zihua, Christina Voigt & Jacob Werksman, *Facilitating Implementation and Promoting Compliance with the*

It could be said that climate change adaptation is also “global” in nature, but this is true only in a narrower sense, namely in the sense that every state faces comparable issues — every state needs to adapt to climate change. That “global nature” of climate change adaptation, by itself, does not justify the adoption of international legal norms. By analogy, every state faces comparable issues relating to the maintenance of roads; surely, the “global nature” of road-maintenance works does not mean the adoption of international norms and principles determining how states ought to maintain roads. At most, this narrow “global nature” of road maintenance, or adaptation, could suggest that it would be useful for states to exchange knowledge and technologies, but no law is required for this to happen. Rules could be adopted on the international plane to require states to adopt and communicate national road-maintenance strategies, but the usefulness of these rules would be questionable, as they would only require states to do what is already, clearly, in their own best interest. Likewise, whereas no state can mitigate climate change effectively on its own, a state can successfully adapt to its impacts without cooperating with other states — and it is in its own best interest to do so. In other words, adaptation is not “an international public good requiring international cooperation”¹⁵⁴ — at least not in the same way as climate change mitigation. As each state draws the benefits of its own adaptation action, adaptation does not present the sort of collective action problems that mitigation brings.

Paris Agreement under Article 15: Conceptual Challenges and Pragmatic Choices, 9 CLIMATE LAW 65 (2019).

¹⁵⁴ Banda, *supra* note 21, at 1027.

There may naturally be some instances where cooperation is needed to address *particular* impacts of climate change. Take the example of a transboundary river whose flow is affected by an accelerated melting of glaciers, an increased rate of evapotranspiration in the catchment basin, or changes in precipitation patterns. If (or when) less water flows in the river, the downstream countries may be affected by a reduced flow of water if the upstream countries do not restrict their use. When more water flows, cooperation may also be helpful in reducing the risk of flood, for instance by establishing early-warning systems or optimizing water storage at artificial water reservoirs along the course of the river. This situation calls for cooperation among the watercourse states under a river-specific legal regime¹⁵⁵ which may reflect rules defined at a global level in water law.¹⁵⁶ This water law regime and its river-specific applications do not need to approach an impact of climate change any differently than any other impacts on the course of the river. A risk of flood in the basin of a transboundary river, for instance, needs to be addressed through international cooperation among the watercourse states

¹⁵⁵ See, e.g., Treaty for Amazonian Cooperation, Jul. 3, 1978, 1202 U.N.T.S. 51; Convention on Cooperation for the Protection and Sustainable Use of the Danube River, Jun. 29, 1994, 25 IER 251; Convention on the Protection of the Rhine, Apr. 12, 1999, 1404 U.N.T.S. 59; Agreement on the Nile River Basin Cooperative Framework, May 14, 2010; Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin, Apr. 5, 1995, 34 I.L.M. 864 (1995).

¹⁵⁶ See generally Convention on the Law of the Non-Navigational Uses of International Watercourses, May 21, 1997, 36 I.L.M. 700 (1997); United Nations Convention on the Protection and Use of Transboundary Watercourses and International Lakes, Mar. 17, 1992, 31 I.L.M. 1312 (1992); STEPHEN C. McCAFFREY, THE LAW OF INTERNATIONAL WATERCOURSES (3rd edn, 2019).

whether the risk always existed or is exacerbated as a result of natural or man-made climate variability.

B. Adaptation Law as the Management of Phenomena Attributable to Climate Change?

Adaptation law is not required as the response to a collective action problem, but it could be justified in other ways. Another conceivable, and in fact highly influential argument would present a law on climate change adaptation as a way to manage the consequences of phenomena attributable to climate change. This argument could be made with regard to climate change adaptation in general or more specifically with particular aspects of it, calling for instance for substantive rules to be developed to protect “climate migrants”¹⁵⁷ or to reduce risks associated with “climate disasters”.¹⁵⁸ Such legal development could be justified based on the understanding that sovereigns have a natural law obligation to offer such standards of treatments to any individual (and possibly any ecological resource) under their jurisdiction.¹⁵⁹ Alternatively, it could be justified on the basis that, in a deeply interconnected world, a state’s failure to protect the most basic rights of its population cannot be without consequences for other states or cannot leave other states entirely indifferent.¹⁶⁰

¹⁵⁷ See references *supra* notes 26-28.

¹⁵⁸ See LYSTER, *supra* note 29; RESEARCH HANDBOOK ON CLIMATE DISASTER LAW, *supra* note 29.

¹⁵⁹ See, e.g., FRANCIS DENG ET AL., SOVEREIGNTY AS RESPONSIBILITY: CONFLICT MANAGEMENT IN AFRICA (1996).

¹⁶⁰ See, e.g., ROBERT O. KEOHANE & JOSEPH S. NYE JR., POWER AND INTERDEPENDENCE 20-21 (4th ed, 2012).

This argument provides convincing justification for introducing consideration for climate change adaptation in various strategic procedures. For instance, the predictable impacts of climate change ought to be considered as part of urban planning policies, development strategies, and environmental impact assessment procedures for relevant projects. As noted above, the UNFCCC suggests such an obligation to take climate change adaptation into account in various strategic procedures.¹⁶¹ This obligation could also be identified by interpretation of states' treaty or constitutional obligations to protect the enjoyment of human rights to people under their jurisdiction and to manage environmental resources within their territory.¹⁶² The development of a state's public infrastructure (e.g., roads, hospitals and schools), for instance, should take into account any foreseeable demographic changes, including those that may be influenced by the impacts of climate change on migration. These considerations call for mainstreaming climate change adaptation in existing laws and policies. As the previous section has shown, a number of states have adopted statutory provisions that require such considerations to be taken into account in various existing procedures.

Beyond such procedural implications, the argument has also been used to suggest the need for substantive standards: rules and principles that would manage particular impacts of climate

¹⁶¹ See in particular UNFCCC, *supra* note 17, art. 4(1)(f).

¹⁶² See International Covenant on Civil and Political Rights, *supra* note 98, art. 2(1); International Covenant on Economic, Social and Cultural Rights, *supra* note 98, art. 2(1); Human Rights Committee, *supra* note 98, ¶8; Convention on biological Diversity art. 6, Jun. 5, 1992, 1760 U.N.T.S. 79; United Nations Convention on the Law of the Sea arts. 192-237, Dec. 10, 1982, 1833 U.N.T.S. 3.

change. In this regard, the argument for adaptation law as management of climate impacts is subject to two objections, one conceptual, the other normative, which can be illustrated with the argument on the protection of “climate migrants”. The first, conceptual objection is that — as noted above¹⁶³ — it is not generally possible to identify phenomena that can be individually attributed to climate change. Climate change may increase the number of migrants altogether, but it is likely impossible to attribute an individual’s migration to climate change. If no migrant can be attributed to climate change, it is not possible to apply specific standards on climate-induced migrants.

The second, normative objection is that attributing a phenomenon to climate change is not relevant in determining how this phenomenon ought to be addressed. Even if climate-induced migrants could be identified, it would not make sense to apply specific protection standards to them. Determining whether an individual’s migration is induced by climate change is not relevant in assessing whether a migrant has rights — all migrants have rights that must be protected.¹⁶⁴ Nor does the identification of factors that led an individual to migrate determine

¹⁶³ See above, text accompanying footnote 69.

¹⁶⁴ A counter-objection could be that “climate migrants” deserve protection because they are forced migrants. But the argument should lead to a protection of all forced migrants, rather than to a protection of “climate migrants”, which may include both forced and voluntary migrants (as causation does not necessarily imply compulsion). The narrow protection of refugees in domestic or international law certainly does not intend to protect all or even most of forced migrants. On the need to protect forced migrants in general, see ALEXANDER BETTS, *SURVIVAL MIGRATION: FAILED GOVERNANCE AND THE CRISIS OF DISPLACEMENT* (2013). *See also*

her protection needs. The threats to a migrant's rights depend on the circumstances in which the migration takes place, for instance its distance and duration, or the individual's social network at the place of destination,¹⁶⁵ not on what caused the migrant to leave her home at the first place.

This reasoning can be illustrated with an analogy. Let us consider the hypothetical causal link between economic recession and crime. Studying the effect of economic recession on crime would be useful at a strategic level. When an economic recession occurs, such information may inform a government's decision to hire or deploy police officers, judges and prison guards. This information may even suggest that, in time of economic recession, a government should review its criminal law to ensure that it defines punishments that are appropriate to deter crimes even when new factors exacerbated by economic recession (presumably, unemployment and poverty, among other things) are expected to increase the incentive to commit them. On the other hand, a government would not be expected to develop a separate field of "recession-induced criminal law" laying out different crimes and punishments; nor would a reasonable government create a separate police force, court system or prisons to deal only with "recession-induced crimes". While economic crises may increase crime rates, they do not create a distinct type of crime that could or should be treated differently from other crimes.

discussion in Benoit Mayer, "*Environmental Migration*" as Advocacy: *Is It Going to Work?*, 29 REFUGE: CANADA'S JOURNAL ON REFUGEES 27 (2014).

¹⁶⁵ See generally VULNERABILITY, EXPLOITATION AND MIGRANTS: INSECURE WORK IN A GLOBALISED ECONOMY (Louise Waite et al. eds, 2015); François Crépeau, Report of the Special Rapporteur on the human rights of migrants, Aug. 13, 2012, UN Doc. A/67/2012.

In conceptual terms, it is impossible to distinguish “recession-induced crimes” from other crimes. This impossibility is not merely a practical impossibility for lack of knowledge, something that “further research”¹⁶⁶ could address. It is *conceptually* impossible to identify “recession-induced crimes” because the question itself simply does not make sense — it confounds statistical trend and individual determination. Any crime, any event that occurs in a world *with* recession is, in some way, affected by the recession, because the world itself has taken a different “path” — different people were born, their life unfolded differently, and they committed crimes that they would not have committed, or did not commit crimes they would have committed, against people who would not have existed, or would not have been at the same place at the same time, had recession had happened.¹⁶⁷ In normative terms, at any rate, this distinction is not generally relevant to the existence of a crime or to the responsibility of a defendant. Mitigating or aggravating circumstances may be related to the recession, but this relation need not be ascertained in individual cases on the basis of general rules and principles.

Let us now look at another factor that has been shown to influence crime rates: the weather and, by extension, climatic conditions. Matthew Ranson, for instance, has shown that “temperature has a strong positive effect on criminal behaviour”, such that climate change may “cause an

¹⁶⁶ For a critical perspective on the frequent assertion that “more research is needed” with regard to climate migration, see Calum T.M. Nicholson, *Climate Change and the Politics of Causal Reasoning: The Case of Climate Change and Migration*, 180 THE GEOGRAPHICAL JOURNAL 151, 153 (2014).

¹⁶⁷ See generally EDWARD N. LORENZ, THE ESSENCE OF CHAOS (1995).

additional 22,000 murders” in the United States between 2010 and 2099.¹⁶⁸ Here again, this finding may be useful at a strategic level. For instance, it may be useful to recruit more police officers or deploy them in regions whose murder rates are most affected by climate change. On the other hand, Ranson surely does not suggest that 22,000 individual murders can be attributed to climate change. It would, here also, be *conceptually* impossible to identify the 22,000 “climate-induced murders” — or, in fact, any individual murder which, one could ascertain, would not have been committed if the climate system had not changed. Moreover, attribution would not be relevant to the way society ought to address these crimes: the statistical impact of a hot day on the number of murders surely does not absolve hot-day murderers of their criminal liability. Inasmuch as heat could constitute a defense or a mitigating circumstance (e.g., perhaps, when water was stolen out of vital necessity), the defendant would at most need to prove that the crime was committed on a hot day, not that the hot day was induced by climate change.

While nobody (to the best of the author’s knowledge) has proposed a different crime for climate-induced murder, a number of proposals have been made for laws addressing other climate-induced phenomena, in particular “climate migration” and “climate disasters”. These

¹⁶⁸ Matthew Ranson, *Crime, Weather, and Climate Change*, 67 JOURNAL OF ENVIRONMENTAL ECONOMICS & MANAGEMENT 274, 274 (2014). *See also* Heather R. Stevens et al., *Hot and Bothered? Associations between Temperature and Crime in Australia*, 63 INTERNATIONAL JOURNAL OF BIOMETEOROLOGY 747 (2019); Rongbin Xu et al., *Ambient Temperature and Intentional Homicide: A Multi-City Case-Crossover Study in the US*, 143 ENVIRONMENT INTERNATIONAL 105992 (2020).

concepts face exactly the same conceptual and normative objectives as the concept of “climate-induced murders” would.

Thus, various law and policy scholars have noted that climate change affects patterns of human migration and, on this basis, they have argued for specific legal rules and principles to protect individual migrants attributed to climate change (whether they are called “climate refugees”, “climate migrants” or otherwise).¹⁶⁹ Yet, while climate change may result in an increase in the total population of migrants,¹⁷⁰ no person’s migration can individually be attributed to climate change.¹⁷¹ Overall, these arguments lack normative traction: attribution to climate change, if it

¹⁶⁹ See, e.g., Biermann & Boas, *supra* note 26; MCADAM, *supra* note 26; Lauren Nishimura, “Climate Change Migrants”: Impediments to a Protection Framework and the Need to Incorporate Migration into Climate Change Adaptation Strategies, 27 INTERNATIONAL JOURNAL OF REFUGEE LAW 107 (2015).

¹⁷⁰ There is evidence that some impacts of climate change exacerbate migration “pulls” and “push” factors, but also that some impacts of climate change may reduce such factors or hinder migration in various ways, for instance by depriving potential migrants from the financial resources necessary to contemplate a migratory project. As such, it is not as obvious as often assumed that, overall, climate change increases migration flows. Inevitably, the response is in part contingent to individual and collective choices made in response to the impacts of climate change. See generally Foresight, *Migration and Global Environmental Change: Final Project Report* (UK Government Office for Science, 2011)

¹⁷¹ See generally Calum T.M. Nicholson, “Climate Mobility” Is Not a Proper Subject of Research and Governance, in DEBATING CLIMATE LAW, *supra* note 103. See also Foresight,

was not conceptually impossible, would in any case be irrelevant when assessing the person's rights or what needs to be done to protect these rights. There would be, for instance, no reason to prioritize the protection of a population of "climate migrants" over that of other migrants.¹⁷² It may be the case that existing law fails at protecting the rights of migrants, but this is not a problem specific to the impacts of climate change, and this problem should be fixed by revising laws on migration, not by adopting different laws on climate change adaptation.¹⁷³

supra note 170; and generally Calum T.M. Nicholson, *Review of Climate Change, Forced Migration, and International Law*, by J. McAdam, 26 JOURNAL OF REFUGEE STUDIES 311 (2013); Benoit Mayer, *Constructing Climate Migration as a Global Governance Issue: Essential Flaws in the Contemporary Literature*, 9 MCGILL JOURNAL OF SUSTAINABLE DEVELOPMENT LAW & POLICY 87 (2013).

¹⁷² See, e.g., BENOIT MAYER, THE CONCEPT OF CLIMATE MIGRATION: ADVOCACY AND ITS PROSPECTS 53-97 (2016).

¹⁷³ See, e.g., BETTS, *supra* note 164, at 16-17. Thus, the Nansen Initiative, which started with a focus on the impacts of climate change on migration, concluded by suggesting protection rules applicable to any disaster-induced displacement notwithstanding its causal relation with climate change. See, e.g., WATER KÄLIN, *The Nansen Initiative: Building Consensus on Displacement in Disaster Contexts*, 49 FORCED MIGRATION REVIEW 5 (2015); François Gemenne and Pauline Brücker, *From the Guiding Principles on Internal Displacement to the Nansen Initiative: What the Governance of Environmental Migration Can Learn from the Governance of Internal Displacement*, 27 INTERNATIONAL JOURNAL OF REFUGEE LAW 235 (2015).

Arguments about “climate disasters”¹⁷⁴ run into similar issues. To talk meaningfully about a “climate disaster”, one would need not only to attribute an extreme weather event to climate change (which, in itself, is problematic),¹⁷⁵ but also to attribute the disaster to this weather event in abstraction from social, economic, political and other factors influencing vulnerability, exposure and resilience.¹⁷⁶ But even leaving questions of attribution aside, the usefulness of this concept is not at all clear. There is no doubt that climate change “will greatly accentuate disaster risks, putting even more stress on disaster response systems”,¹⁷⁷ and this should certainly be taken into account, for instance, when a state decides how to allocate resources to disaster preparedness. Yet, there does not seem to be any reason why a “potential legal duty to deal with climate-related disaster risks”¹⁷⁸ would differ from states’ general disaster-risk-management obligations arising, in particular, from international human rights law.¹⁷⁹ Arguments that have been made for the creation of a “climate-disaster law” have neither demonstrated that disasters can be attributed to climate change, nor that they ought to be treated differently from other disasters.

¹⁷⁴ See in particular LYSTER, *supra* note 29; RESEARCH HANDBOOK ON CLIMATE DISASTER LAW, *supra* note 29.

¹⁷⁵ See *supra* notes 70-71 and accompanying text.

¹⁷⁶ See *supra* notes 53 and 74 and accompanying text.

¹⁷⁷ Daniel Farber, *Climate Change and Disaster Law*, in THE OXFORD HANDBOOK OF INTERNATIONAL CLIMATE CHANGE LAW, *supra* note 12, 588, at 589.

¹⁷⁸ *Id.* at 594.

¹⁷⁹ See generally Draft Articles on the Protection of Persons in the Event of Disasters, *supra* note 98.

This line of argument applies to countless other suggestions with regard to substantive norms that could be included in a law on climate change adaptation. That climate change impacts a lot of “things” does not prove the existence of “climate-induced things” that *can* and *ought to* be distinguished from other “things”. For instance, McCormack convincingly argues that biological diversity needs to be protected when it is under stress, and that such stress may be exacerbated by the impacts of climate change,¹⁸⁰ but the need to protect biological diversity applies equally and indifferently to all stressors, notwithstanding any relation they may have with climate change. Faure makes an interesting case for compensation as a tool of social protection in the event of a disaster as a tool for climate change adaptation,¹⁸¹ but this argument should be made in relation to any disaster rather than solely in the context of climate change. Nor does the impact of climate change on public health justify the development of a new field of climate-related public health law.¹⁸² Human rights protection and environmental conservation are not wheels that need to be re-invented “in the context of climate change”.

As suggested above, this line of arguments extends to the management of transboundary environmental resources too. For instance, climate change may have an impact on water availability, or on the health of certain ecosystems, but that does not command the development

¹⁸⁰ Phillipa C. McCormack, *Conservation Introductions for Biodiversity Adaptation under Climate Change*, 7 TRANSNATIONAL ENVIRONMENTAL LAW 323 (2018).

¹⁸¹ Michael Faure, *Climate Change Adaptation and Compensation*, in RESEARCH HANDBOOK ON CLIMATE CHANGE ADAPTATION LAW, *supra* note 21, at 110.

¹⁸² See CLIMATE CHANGE, PUBLIC HEALTH, AND THE LAW, *supra* note 30.

of new legal regimes.¹⁸³ The solution, rather, lies in adapting existing regimes on the management of transboundary water resources and ecosystems to include considerations for climate change adaptation. When no treaty regime exists, one may need to be created, not specifically to adapt to climate change, but to address the comprehensive issue (e.g., the management of a watercourse) that climate change is exacerbating.

At times, it is conceivable that climate change may create new phenomena. The best examples would perhaps relate to be the impacts of sea-level rise, ranging from the disappearance of entire “sinking states”, to the modification of baselines used for maritime delimitation.¹⁸⁴ The relevant legal regimes on the recognition of states and on maritime delimitation ought to evolve in reaction to these changes, whether through the adoption of amendments to existing treaty regimes or by way of interpretation. Addressing these issues does not require or otherwise call for the development of a distinct set of substantive rules focusing on climate change adaptation. These issues need to be addressed by adapting existing laws, not by adopting laws on climate change adaptation.

¹⁸³ See Banda, *supra* note 21, at 1056; Raya Marina Stephan, *Climate Change Considerations under International Groundwater Law*, 42 WATER INTERNATIONAL 757 (2017).

¹⁸⁴ The implications of sea-level rise for the development of international law are currently under consideration by the International Law Commission. See International Law Commission, Report on the work of the seventy-first session ¶265, 2019, UN Doc. A/74/10. See also Ori Sharon, *Tides of Climate Change: Protecting the Natural Wealth Rights of Disappearing States*, 60 HARV. INT’L L. J. 95 (2019); Ori Sharon, *State Extinction through Climate Change*, in DEBATING CLIMATE LAW, *supra* note 103, at 349.

In other instances, the impacts of climate change may lead to a political awakening about flaws in existing legal rules and principles. For instance, the discourse on “climate migration” tends to highlight the lack of protection of most forced migrants, beyond a narrow and weak refugee regime,¹⁸⁵ while research on “climate disasters” may show certain shortcomings in the law on disaster risk reduction. This, however, does not call for *more* laws, but simply for *better* laws.

C. Adaptation Law as Reparation?

A last conceivable argument to justify substantive rules and principles on climate change adaptation presents adaptation as, essentially, the remedy for a wrongdoing. It is well-known that most GHG emissions relate to activities that take place in or otherwise benefit to developed countries.¹⁸⁶ On the other hand, developing countries are often more affected by the impacts of climate change because they are often more exposed to extreme weather events (e.g., by being located in tropical regions) and, overall, lack access to the resources needed to decrease vulnerability and increase resilience.¹⁸⁷ A law on climate change adaptation — the argument goes — could help to hold the states that contributed the most to causing climate change

¹⁸⁵ See in particular Convention Relating to the Status of Refugees art. 1(A)(2), Jul. 28, 1951, 189 U.N.T.S. 137; JAMES C. HATHAWAY & MICHELLE FOSTER, *THE LAW OF REFUGEE STATUS* (2nd edn, 2014); and generally BETTS, *supra* note 164.

¹⁸⁶ See, e.g., Charles Kolstad et al., *Social, Economic, and Ethical Concepts and Methods*, in *CLIMATE CHANGE 2014: MITIGATION OF CLIMATE CHANGE: WORKING GROUP III CONTRIBUTION TO THE FIFTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 2014*, 215 (Ottmar Edenhofer et al. eds, 2014).

¹⁸⁷ See *id.*; Field et al., *supra* note 15, at 40.

responsible towards those most affected by its adverse impacts. Adaptation law, in other words, would seek to convey climate reparations.¹⁸⁸

It is on these grounds that developing states originally pushed the concept of adaptation on the agenda of international negotiations in the late 1980s.¹⁸⁹ Article 4(4) of the UNFCCC, requires developed country parties to “assist” developing countries “in meeting costs of adaptation”,¹⁹⁰ thus suggesting that adaptation could be associated with something akin to compensation, even

¹⁸⁸ See, e.g., Benoit Mayer, *Climate Change Reparations and the Law and Practice of State Responsibility*, 7 ASIAN JOURNAL OF INTERNATIONAL LAW 185 (2017); Daniel A. Farber, *Basic Compensation for Victims of Climate Change*, 155 UNIVERSITY OF PENNSYLVANIA LAW REVIEW 1605 (2007); Daniel A. Farber, *The Case for Climate Compensation: Justice for Climate Change Victims in a Complex World*, UTAH LAW REVIEW 377 (2008); W. Neil Adger et al., *Compensation for Climate Change Must Meet Needs*, 436 NATURE 328 (2005); Richard S.J. Toll & Roda Verheyen, *State Responsibility and Compensation for Climate Change Damages — A Legal and Economic Assessment*, (2004) 32 ENERGY POLICY 1109; CATRIONA MCKINNON, CLIMATE CHANGE AND FUTURE JUSTICE: PRECAUTION, COMPENSATION, AND TRIAGE (2012); RODA VERHEYEN, CLIMATE CHANGE DAMAGE AND INTERNATIONAL LAW: PREVENTION DUTIES AND STATE RESPONSIBILITY (2005); MARGARETHA WEWERINKE-SINGH, STATE RESPONSIBILITY, CLIMATE CHANGE AND HUMAN RIGHTS UNDER INTERNATIONAL LAW (2019).

¹⁸⁹ Caracas Declaration of the Ministers of Foreign Affairs of the Group of 77 on the Occasion of the 25th Anniversary of the Group ¶II:34, Jun. 21-23, 1989, UN Doc. A/44/361.

¹⁹⁰ UNFCCC, *supra* note 17, art. 4(4).

if developed states could not agree to include this word in the Convention.¹⁹¹ Yet, throughout nearly three decades of international negotiations on climate change, developed states have constantly avoided any recognition of responsibility, let alone any commitment to pay any sort of “reparation”. The advocates of compensation for developing states could have viewed the recognition of “loss and damage associated with climate change impacts in developing countries”¹⁹² by the Bali Action Plan and subsequent COP decisions establishing a work programme on loss and damage¹⁹³ and the Warsaw international mechanism for loss and damage¹⁹⁴ as a victory,¹⁹⁵ but, instead of an anchoring point for discussions on reparation, loss

¹⁹¹ See in particular Peter Sands, *The United Nations Framework Convention on Climate Change*, 1 REVIEW OF EUROPEAN COMMUNITY & INTERNATIONAL ENVIRONMENTAL LAW 270, at 275 (1992).

¹⁹² Bali Action Plan, *supra* note 41, ¶1(c)(iii).

¹⁹³ Cancun Agreements, *supra* note 26, ¶26. *See also* UNFCCC Decisions 7/CP.17, UN Doc. FCCC/CP/2011/9/Add.2, Mar. 15, 2012; 3/CP.18, UN Doc. FCCC/CP/2012/8/Add.1, Feb. 28, 2013.

¹⁹⁴ UNFCCC Decision 2/CP.19, UN Doc. FCCC/CP/2013/10/Add.1, Jan. 31, 2014.

¹⁹⁵ *See, e.g.*, Saleemul Huq et al., *Loss and Damage*, 3 NATURE CLIMATE CHANGE 947 (2013); Sam Adelman, *Climate Justice, Loss and Damage and Compensation for Small Island Developing States*, 7 JOURNAL OF HUMAN RIGHTS AND THE ENVIRONMENT 32 (2016); Jonathan Gewirtzman et al., *Financing loss and damage: reviewing options under the Warsaw International Mechanism*, 18 CLIMATE POLICY 1076 (2018); Benjamin Dudley Tombs & Ben France-Hudson, *Climate Change Compensation: An Unavoidable Discussion*, 14 POLICY QUARTERLY 50 (2018). *See generally* Rachel James et al., *Characterizing loss and damage from climate change*, 4 NATURE CLIMATE CHANGE 938, 939 (2014).

and damage was soon treated with the same ambivalence as adaptation¹⁹⁶. While the Paris Agreement contains an article that “recognize[s] the importance of averting, minimizing and addressing loss and damage”,¹⁹⁷ the COP noted that this article “does not involve or provide a basis for any liability or compensation.”¹⁹⁸

The objective of paying reparation, however, does not justify the adoption of substantive rules and principles determining how states are to adapt to climate change — for instance, how they must address “climate migration” or “climate disasters”.¹⁹⁹ Instead of making up for the damage suffered by developing states, most of the substantive norms on climate change adaptation that have been discussed would impose new obligations on them. Even non-binding guidelines would likely erode the sovereignty of developing states: instead of developing their development policy based on their own priorities, developing states would be required or at

¹⁹⁶ See generally Benoit Mayer, *Whose “Loss and Damage”? Promoting the Agency of Beneficiary States*, 4 CLIMATE LAW 267 (2014); Florentina Simlinger & Benoit Mayer, *Legal Responses to Climate Change Induced Loss and Damage*, in LOSS AND DAMAGE FROM CLIMATE CHANGE CONCEPTS, METHODS AND POLICY OPTIONS 179 (Reinhard Mechler et al. eds, 2019).

¹⁹⁷ Paris Agreement, *supra* note 18, art. 8(1).

¹⁹⁸ UNFCCC Decision 1/CP.21, Adoption of the Paris Agreement ¶51, UN Doc. FCCC/CP/2015/10/Add.1, Jan. 29, 2016.

¹⁹⁹ See Benoit Mayer, *Climate Change, Migration and the Law of State Responsibility*, in RESEARCH HANDBOOK ON CLIMATE CHANGE, MIGRATION AND THE LAW (Benoit Mayer & François Crépeau eds, 2017) 238.

least expected to follow value judgments made by international institutions.²⁰⁰ Thus, instead of providing reparations, adaptation law would likely result in unjustified limitations to the rights of the states most affected by climate change to sustainable development²⁰¹ and to the right of their peoples to self-determination.²⁰²

The adoption of international standards on climate change adaptation would inevitably raise questions of power and legitimacy. The geopolitical power of developed states means that international norms on climate change adaptation would often promote the interests of developed states at the expense of the interests of developing states. This trend is most visible in relation to the prominence of the concept of “climate migration” in the academic literature and international negotiations.²⁰³ Do developing countries benefit from this particular focus? Protecting the rights of migrants is obviously an important priority, but it is not the only one.

²⁰⁰ UN ENVIRONMENT, THE ADAPTATION GAP REPORT (2018), available at www.unenvironment.org/resources/adaptation-gap-report (Annex to chpt. 3, at 1); Lindsey Jones, *Resilience Isn't the Same for All: Comparing Subjective and Objective Approaches to Resilience Measurement*, 10 WIREs CLIMATE CHANGE e552 (2019); Annett Möhner, *The Evolution of Adaptation Metrics under the UNFCCC and its Paris Agreement*, in ADAPTATION METRICS: PERSPECTIVES ON MEASURING, AGGREGATING AND COMPARING ADAPTATION RESULTS 15 (Lars Christiansen et al. eds, 2018).

²⁰¹ See, e.g., UNFCCC, *supra* note 17, art. 3(4).

²⁰² See, e.g., International Covenant on Civil and Political Rights, *supra* note 98, art. 1(1); International Covenant on Economic, Social and Cultural Rights, *supra* note 98, art. 1(1).

²⁰³ See, e.g., Cancun Agreements, *supra* note 41, ¶14(f); Adoption of the Paris Agreement, *supra* note 198, ¶49.

Migration studies show that the most vulnerable individuals in a society affected by a disaster are typically those least able to migrate as they lack the resources necessary to put themselves out of harm's way.²⁰⁴ The emphasis on the management of migration in international negotiations could induce states with limited resources to invest disproportionately in protecting the rights of migrants at the expense of the rights of individuals unable to migrate. It may not be a coincidence that this focus on migration, among all the various impacts of climate change on societies, promotes the political agenda of many developed states in containing migrants in the Global South.²⁰⁵ Instead of reparation, international rules on climate change adaptation tend to result in political interference in the domestic affairs of developing states, thus making the situation worse for those states least responsible for, but most affected by the impacts of, climate change.

IV. Conclusion

This article questions the existence of and the need for a law on climate change adaptation. Too often, the existence of a legal field or the need for it are asserted based merely on the observation that adaptation is recognized as an important policy objective. Not all policy objectives require the development of a dedicated legal regime. Effective adaptation action does not necessarily involve the development of a new legal field or the creation of specific categories or dedicated institutions. The impacts of climate change may reveal some shortfalls in existing law, for instance with regard to disaster preparedness or the protection of the rights

²⁰⁴ See, e.g., Foresight, *supra* note 170, at 54.

²⁰⁵ B.S. Chimni, *The geopolitics of refugee studies: A view from the South*, 11 JOURNAL OF REFUGEE STUDIES 350 (1998).

of migrants, but these shortfalls ought to be addressed by improving existing laws rather than by reinventing the wheel. On the other hand, questions of responsibility and reparations should be addressed through compensation, not by imposing additional obligations on those states that are the most affected by the impacts of climate change. The law needs to be adapted to climate change, but there is no obvious need to adopt laws on climate change adaptation — at least not beyond what Ruhl and Salzman call a “procedural overlay”²⁰⁶ which would be aimed at ensuring that climate change adaptation is mainstreamed in various fields of law.

²⁰⁶ Ruhl & Salzman, *supra* note 80, at 1020.