

Fairness in International Climate Change
Law and Policy

FRIEDRICH SOLTAU



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Fairness in International Climate Law and Policy

Those of us who live on small specks of land, . . . in the Caribbean, have not agreed to be sacrificial lambs on the altar of success of industrial civilization.¹

The economy is a wholly owned subsidiary of the environment.²

Science is about truth and should be wholly indifferent to fairness or political expediency.³

1.1. INTRODUCTION

Climate change is forcing decision makers at national and international levels to make difficult choices. Confronted with competing demands and interests, countries are faced with committing significant resources to avoid consequences that, while beginning to be felt now, will only manifest themselves decades and, in some cases, centuries from now. Decisions will need to be taken under conditions of considerable uncertainty as to the exact scope and timing of harm. Moreover, the adverse impacts of climate change will be unevenly distributed, with the countries least responsible for the historical buildup of greenhouse gases (GHGs) bearing the brunt. Under such conditions, values and principles carry added weight in decision making. Science provides information on the status of the climate system and projections of future changes. Economics attempts to present the costs and

¹Statement by Ambassador Lionel Hurst of Antigua and Barbuda, at the International Red Cross Conference on Climate Change and Natural Disasters, the Hague, June 28, 2002, quoted in BENITO MÜLLER, *EQUITY IN CLIMATE CHANGE: THE GREAT DIVIDE* 45 (2002).

²Forward, Robert F. Kennedy Jr., in GAYLORD NELSON, *BEYOND EARTH DAY: FULFILLING THE PROMISE* xvi (2002).

³JAMES LOVELOCK, *THE VANISHING FACE OF GAIA: A FINAL WARNING* 11 (2009).

benefits of alternative courses of action. Yet observing the global effort to combat climate change reveals that a key part of the discussion revolves around the contested concept of fairness. A juridical analysis of options to combat climate change will benefit from a critical engagement with the principle of fairness.

Fairness claims and discourse are a major part of the climate change regime. The United Nations Framework Convention on Climate Change (UNFCCC), which is the multilateral basis for action to combat climate change, itself assigns a prominent place to equity. Equity and fairness are deep-rooted concepts in human relations, and it is not surprising to find them invoked in a setting where decisions with far-reaching social, economic, and environmental consequences are made. Therefore it is desirable to improve our understanding of the dimensions and application of fairness concepts in climate negotiations. Understanding fairness in climate change is all the more important as negotiators, policy makers, and advocates turn to consider deepening and broadening the climate change regime after the end of the first commitment period of the Kyoto Protocol in 2012.⁴ As the science points out, the emission reductions that will result from the Protocol are a very modest first step in the face of the much more extensive reductions that will be required in the coming decades. And fairness can be expected to come to the fore even more because the future stages of the international effort to combat climate change will require some form of GHG control for all countries, not only the group of industrialized countries covered under the Kyoto Protocol.

Questions of fairness are central to the challenge of tackling global climate change. The complexity of the question arises from the global and long-term nature of the problem. At the same time, the impacts are localized and differentiated so that states least able to respond are those that will be hardest hit. Policies and measures to abate – mitigate – GHG emissions demand decision making under conditions of uncertainty and a commitment of resources beyond the time horizon of politics-as-usual. And while international environmental law has achieved notable successes, it has arguably not confronted a challenge with so many dimensions, including lifestyles, energy policies, and inequality in the global community. Some observers

⁴Joseph E. Aldy et al., *Addressing Costs: The Political Economy of Climate Change*, in *BEYOND KYOTO: ADVANCING THE INTERNATIONAL EFFORT AGAINST CLIMATE CHANGE* (2003).

have argued that questions of fairness are of secondary, largely rhetorical significance: willingness to pay is what matters.⁵ Such views grow from a realist perspective on the relations between states and skepticism about international law. The argument presented in this book is that a fair distribution of benefits and burdens is at the heart of the matter. Individual and collective responses to the climate change problem are shaped and determined as much by social and political factors as by technical and scientific ones. Normative analysis has a role to play in analyzing the problem of climate change and identifying solutions.

1.2. WHY FAIRNESS?

One straightforward reason for considering fairness and equity is that the language of the UNFCCC demands it. The Convention enjoins parties “to protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities.”⁶ Another principle states that the special needs and circumstances of those countries particularly vulnerable to the adverse impacts of climate change should be given full consideration.⁷ It also states that in taking action in circumstances of scientific uncertainty, account should be taken of the need to ensure that measures and policies are cost-effective and achieve global benefits at the lowest possible cost.⁸ The guiding principles of the Convention refer explicitly to an equitable and fair approach to the protection of the climate system, with a circumscribed mention of cost-effectiveness and no mention of efficiency. A plain reading of the Convention’s guiding principles, which are quite evenly balanced, points the reader in the direction of equity and fairness principles for burden sharing. Taking the language of the Convention seriously gives meaning and purpose to an effort to explore and delimit the meaning of equity and fairness in the climate change context. Because equity is not defined in the Convention, it makes sense to have recourse to background moral or ethical notions of fairness, as would be the case in a domestic

⁵ See DAVID VICTOR, *THE COLLAPSE OF THE KYOTO PROTOCOL AND THE STRUGGLE TO SLOW GLOBAL WARMING* (2001).

⁶ United Nations Framework Convention on Climate Change, adopted on May 9, 1992, Art. 3(1), 1771 UNTS 164 Art. 3(1) (hereinafter referred to as UNFCCC).

⁷ UNFCCC, Art. 3(2).

⁸ UNFCCC, Art. 3(3).

legal system when giving substance to concepts such as equality and due process.⁹

A substantial body of scholarship and policy advocacy has developed that discusses fairness in the climate change context.¹⁰ References to fairness and equity also abound in intergovernmental forums dealing with climate change. Countries from opposite sides of the climate change divide implicitly or explicitly invoke fairness in their arguments. From one perspective, fairness requires that in addressing a problem, all major contributors should play their part, regardless of their historical contribution to the problem.¹¹ Another view sees a group of countries as the victims of another group of countries' unwillingness to take responsibility for the consequences of their

⁹ Roger Shiner, *Law and Morality*, in A COMPANION TO PHILOSOPHY OF LAW AND LEGAL THEORY 438 (Dennis Patterson ed., 1996).

¹⁰ For a selection, see ANIL AGARWAL & SUNITA NARAIN, *GLOBAL WARMING IN AN UNEQUAL WORLD: A CASE OF ENVIRONMENTAL COLONIALISM* (1991); Henry Shue, *The Unavoidability of Justice*, in THE INTERNATIONAL POLITICS OF THE ENVIRONMENT: ACTORS, INTERESTS, AND INSTITUTIONS (Andrew Hurrell & Benedict Kingsbury eds., 1992); Henry Shue, *Subsistence Emissions and Luxury Emissions*, 15 LAW & POLICY 40 (1993); Henry Shue, *After You: May Action by the Rich Be Contingent upon Action by the Poor?* 1 INDIANA JOURNAL OF GLOBAL LEGAL STUDIES 343 (1994); Adam Rose, *Equity Considerations of Tradeable Carbon Emission Entitlements*, in COMBATING GLOBAL WARMING: STUDY ON A GLOBAL SYSTEM OF TRADEABLE CARBON EMISSION ENTITLEMENTS, UN DOC. UNCTAD/RDP/DFP/1 55 (1992); Michael Grubb, *Seeking Fair Weather: Ethics and the International Debate on Climate Change*, 71 INTERNATIONAL AFFAIRS 463 (1995); Tariq Banuri et al., *Equity and Social Considerations*, in CLIMATE CHANGE 1995: ECONOMIC AND SOCIAL DIMENSIONS OF CLIMATE CHANGE, CONTRIBUTION OF WORKING GROUP III TO THE SECOND ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 83 (James P. Bruce et al. eds., 1996); Mathew Paterson, *International Justice and Global Warming*, in THE ETHICAL DIMENSIONS OF GLOBAL CHANGE (Barry Holden ed., 1996); Matthew Paterson, *Principles of Justice in the Context of Global Climate Change*, in INTERNATIONAL RELATIONS AND GLOBAL CLIMATE CHANGE 119 (Urs Luterbacher & Detlef F. Sprinz eds., 2001); GLOBAL COMMONS INSTITUTE, *CONTRACTION AND CONVERGENCE: A GLOBAL SOLUTION TO A GLOBAL PROBLEM* (1997); Adam Rose et al., *International Equity and Differentiation in Global Warming Policy: An Application to Tradeable Emission Permits*, 12(1) ENVIRONMENTAL AND RESOURCE ECONOMICS 25 (1998); FERENC L. TÓTH ED., *FAIR WEATHER? EQUITY CONCERNS IN CLIMATE CHANGE* 193 (1999), which contains contributions from the fields of economics, social science, and law; MARINA CAZORLA & MICHAEL TOMAN, *INTERNATIONAL EQUITY AND CLIMATE CHANGE POLICY*, Climate Issue Brief 27, Resources for the Future (December 2000); PETER SINGER, *ONE WORLD: THE ETHICS OF GLOBALIZATION* (2002); JAMES GARVEY, *THE ETHICS OF CLIMATE CHANGE: RIGHT AND WRONG IN A WARMING WORLD* (2008).

¹¹ See, e.g., the statement of President G.W. Bush: "I oppose the Kyoto Protocol because it exempts 80 percent of the world, including major population centers such as China and India, from compliance, and would cause serious harm to the U.S. economy . . . the Kyoto Protocol is an unfair and ineffective means of addressing global climate change concerns." Letter to Members of the Senate on the Kyoto Protocol on Climate Change, 37(11) WEEKLY COMP. OF PRES. DOC. 444 (March. 13, 2001).

actions. Cost is often raised as an objection, but it is evident that cost per se is not the crux of the objection – even if large developing countries participated in the mitigation effort, developed countries would still have to incur potentially substantial costs. Burden sharing is thus the issue. Opposite sides in the debate evidently believe that they derive some advantage by articulating their position in terms of fairness. Unless one believes that statements that countries make mean nothing at all, it is worthwhile examining the language countries use and the context in which they do so.

Combating climate change requires global action based on a consensus among sovereign nations that are more likely to adopt and faithfully implement an agreement that is perceived to be fair and equitable.¹² This is a straightforward notion, clearly applicable in the conduct between persons, and scholars have argued that it also applies to agreements between states.¹³

Global environmental problems bring to the fore the need to arrive at some degree of consensus about the meaning of fairness. A primary reason is that, unlike in other cases, such as international trade, developed countries cannot rely on their unequal power and influence to determine a solution, but rather require the voluntary cooperation of developing countries, particularly those that are rapidly industrializing. This opens the possibility for developed countries to deal on fair and equitable terms with developing countries, taking into account the imperative of poorer countries to pursue economic and social development, while at the same time maintaining the stability of the climate system.¹⁴

1.3. INTERNATIONAL POLITICAL CONTEXT OF FAIRNESS

The UNFCCC, which was adopted in 1992 and came into force three years later, is the foundation of the global response to climate change.¹⁵ The ultimate objective of the Convention is the stabilization of GHG concentrations in the atmosphere at a level that would prevent dangerous human interference with the climate system. It does not contain binding emission targets. For this reason, countries initiated a negotiating process that culminated

¹²Marco Grosso, *A Normative Ethical Framework in Climate Change*, 81(3–4) CLIMATIC CHANGE 223 (2007).

¹³THOMAS M. FRANCK, *FAIRNESS IN INTERNATIONAL LAW AND INSTITUTIONS* (1995).

¹⁴Henry Shue, *Global Environment and International Inequality*, 75(3) INTERNATIONAL AFFAIRS 531 (1999).

¹⁵UNFCCC, Art. 3(1).

in the adoption of the Kyoto Protocol in 1997.¹⁶ The Protocol, which entered into force in February 2005, commits industrialized countries – so-called Annex I parties to the UNFCCC – to reduce their GHG emissions by an average of 5.2 percent from 1990 levels during the first commitment period from 2008 to 2012. However, this binding target applies only to some 36 countries, representing about 30 percent of global GHG emissions. The nonparticipation of the United States, coupled with various compromises made in the process of bringing the Protocol into operation, means that the real reduction will be well below 5.2 percent. The Protocol is thus only a modest first step in the direction of stabilizing global emissions.

By some estimates, emissions from developing countries of carbon dioxide, the most important GHG, will in the next decade exceed the share from industrialized countries. Developed countries argue that reduction measures therefore are only meaningful if developing countries are prepared to trim their emissions. In turn, developing countries look forward, contending that they ought not bear the burden of abatement at this critical stage in their development. They point also to the historical responsibility of the developed countries, invoking the *polluter pays principle*. Small islands and other particularly vulnerable developing countries seek to emphasize global solidarity and fairness when pressing claims for assistance to adapt to the adverse impacts of climate change. These are only some of the issues entwined in the debate on climate change that lead, directly or indirectly, to the question of fairness.

Climate change stems from the activities at the very heart of our economies and way of life. Of world energy, around 85 percent is supplied from fossil fuels – coal, gas, and oil.¹⁷ Altogether, carbon dioxide from the combustion of fossil fuels is responsible for much more than half of all GHG emissions; approximately another quarter come from carbon dioxide released in the process of deforestation and from various gases released from agricultural and other activities.¹⁸ Many environmental problems stem from human activity, but none relate so directly to the driving force of modern economies. Stabilizing emissions at the level that would prevent large-scale, irreversible damage to the biosphere will require not merely an incremental adjustment of our energy system, but over time, a full-scale transition to new

¹⁶ Kyoto Protocol to the UNFCCC, December 11, 1997, 37 ILM 22, available at <http://unfccc.int/resource/docs/convkp/kpeng.pdf>.

¹⁷ INTERNATIONAL ENERGY AGENCY, WORLD ENERGY OUTLOOK (2006).

¹⁸ WORLD RESOURCES INSTITUTE, NAVIGATING THE NUMBERS 5–7 (2005).

modes of low-carbon consumption and production. Studies suggest that depending on the stringency of the chosen target, global GHG reductions of 50 to 85 percent below 2000 levels may be necessary by 2050, while global emissions would have to peak in 2015 at the latest.

The discourse on fairness is woven into the political process of the climate change regime. It has been observed that international environmental negotiations among developing countries have frequently cast their arguments in terms of justice and fairness.¹⁹ There are several possible reasons for this. First, arguments framed in terms of fairness or justice appear more binding and forceful than those appealing to charity.²⁰ Second, arguments appealing to moral and, if applicable, legal obligations possess a universal character. A violation of a right to refrain from conduct that injures another, or responsibility to provide compensation for consequent damages, applies objectively to all who fall within the scope of the rule or principle. For example, although a policy argument relating to economic efficiency in combating climate change may not have much to offer the representative of a small island state, claiming the violation of a right by those responsible for GHG emissions has more traction.

Developing countries have viewed climate change in the context of their economic and social development.²¹ Imposing limits on their growth is regarded as unfair, given that they have not yet attained the level of development of industrialized countries. While not ruling out so-called cleaner forms of development, they do not wish to bear any additional cost, particularly when the developed countries achieved their status with few, if any, environmental constraints.²² Developing countries do not want to be held responsible for remedying a problem largely not of their making. Accordingly, they emphasize industrialized countries' dominant share of cumulative carbon dioxide emissions (76 percent).²³ Developing countries

¹⁹Mark A. Drumbl, *Poverty, Wealth, and Obligation in International Law*, 76 *TULANE LAW REVIEW* 843, 898 (2002).

²⁰*Id.* at 897, citing ANDREW DOBSON, *JUSTICE AND THE ENVIRONMENT: CONCEPTIONS OF ENVIRONMENTAL SUSTAINABILITY AND THEORIES OF DISTRIBUTIVE JUSTICE* 95 (1995).

²¹MÜLLER, *supra* note 2, at 45. The following draws on the points made by Müller.

²²See Delhi Ministerial Declaration on Climate Change and Sustainable Development, Decision 1/CP.8 UN Doc. FCCC/CP/2002/7/Add.1 ("Reaffirming that economic and social development and poverty eradication are the first and overriding priorities of developing country Parties," preambular para. 3; "Recognizing that climate change could endanger future well-being, ecosystems, and economic progress in all regions," preambular para. 6).

²³WORLD RESOURCES INSTITUTE, *supra* note 18, at 32.

also point out the difference in per capita emissions: some industrialized countries (Australia, Canada, the United States) have per capita emissions more than 6 times those of China, and 13 times those of India.²⁴ By some estimates, however, the developing country carbon dioxide emissions will exceed those of industrialized countries by 2012.²⁵ At the same time, some 140 countries, including small islands and the least developed countries, are responsible for only 10 percent of annual emissions.²⁶

The argument from historical responsibility has obvious attractions in the international climate change discourse. At face value, basic notions of fairness seem to suggest that the main contributors to a problem should be the ones carrying out abatement.²⁷ In this context, Brazil, in 1997, put forward a proposal that would assign relative responsibilities to individual industrialized countries in accordance with their respective contributions to climate change, as measured by the induced change in temperature, based on historical emissions.²⁸ According to recent research, the average contributions to the global mean surface temperature increase in 2000 are around 40 percent from the Organisation for Economic Co-operation and Development group of industrialized countries, 14 percent from Eastern Europe and the former Soviet Union, 24 percent from Asia, and 22 percent from Africa and Latin America.²⁹

Generalizing very broadly, the approach to the problem of climate change by industrialized nations, particularly those in Europe, has been from the perspective of correcting or managing an environmental imbalance. While

²⁴ *Id.* at 21 note 80.

²⁵ INTERNATIONAL ENERGY AGENCY, *supra* note 17, at 81.

²⁶ *Id.* at 11 note 80.

²⁷ A country's historical emissions can be presented in at least three ways: on the basis of simple cumulative emissions, the contribution to current concentrations of GHGs, or the contribution to increases in the global average temperature. *See id.* at 32 note 80 for a succinct explanation. The cumulative approach simply counts all emissions since a particular start date. In assessing a country's contributions to atmospheric concentrations, the second approach takes into account the decay of GHGs over time to give a country's share of emissions presently in the atmosphere.

²⁸ UN Doc. FCCC/AGBM/1997/MISC.1/Add.3, 3. Although not adopted, the Brazilian recommendation remains on the agenda of the Conference of the Parties to the Convention, whose Subsidiary Body for Technological and Scientific Advice (SBSTA) has sponsored continued research into contributions to climate change. *See* UN Doc. FCCC/SBSTA/2002/INF.14 for a summary of the research efforts carried out by various institutions, while up-to-date information is available at <http://www.match-info.net/>.

²⁹ Michel den Elzen et al., *Analysing Countries' Contributions to Climate Change: Scientific and Policy-Related Choices*, 8(6) ENVIRONMENTAL SCIENCE & POLICY 614 (2005).

catastrophic images may be summoned in support of policy, by and large, the adverse impacts of climate change will be less severe than in the subtropical countries, and the capacity to adapt is more developed than in poor countries.³⁰ Framing the problem in these terms may have contributed to the climate regime's focus on mitigating GHG emissions, epitomized in the emission limitations and reductions required by the Kyoto Protocol. From an environmental management perspective, informed by the scientific evidence of GHGs and public concern, the primacy of mitigation on the agenda of the international climate change regime made sense. Increased recognition of the economic and social dimensions of climate change meant greater emphasis on adaptation to the adverse effects of climate change – sea-level rise, potentially greater frequency and intensity of extreme weather events, and so on.³¹ Even so, funding for adaptation falls well short of what is needed, while progress on the issue in the climate talks remained bogged down for a number of years.³²

Adaptation thus constitutes an important dimension of fairness in the context of international climate policy. Adaptation is increasingly being regarded as a twin priority with mitigation. Practically, this stems from the realization that the current concentration of GHGs already commits the planet to further warming, even if emissions were frozen at current levels.³³ (This is primarily due to the thermal inertia of the oceans, which have absorbed vast amounts of heat, which will be slowly released into the atmosphere.) Given their vulnerabilities – a combination of geographical location, reliance on sectors vulnerable to climate shocks (agriculture), and low levels of technology and capital accumulation – developing countries are much less able to cope with the impacts of climate change and climate

³⁰ But cf. the 2004 heat wave in Europe, which was responsible for some thirty thousand deaths. Again, remedial measures, such as air-conditioning and improved preparedness, can be taken relatively easily. Compare this with the impact of drought on countries in the Sahel or populations in low-lying areas such as Bangladesh or the Nile delta.

³¹ While the UNFCCC did deal with the question of funding for adaptation at the first Conference of the Parties in 1995 (Decision 11/CP.1), it was only with the adoption of the Marrakech Accords in 2001 that adaptation was addressed as a key area of action.

³² See slow progress on articulating the Buenos Aires Programme of Work on Adaptation and Response Measures, adopted at the 10th Conference of the Parties to the UNFCCC (COP-10) in 2004.

³³ INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, *CLIMATE CHANGE 2007: THE PHYSICAL SCIENCE BASIS, CONTRIBUTION OF WORKING GROUP I TO THE FOURTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 23* (Susan Solomon et al. eds., 2007).

variability. A drought in the United States may harm the prospects of farmers (many of whom will be cushioned by insurance), but loss of life is unlikely. For a country in a persistently drought-wracked region, such as Niger, where subsistence agriculture supports a large proportion of the population, the situation is quite different. A World Bank study concluded that progress in fighting poverty is under threat from increasingly severe weather events and climate variability.³⁴ The report goes on to note that 20 to 40 percent of official development assistance (ODA) and public concessional finance (i.e., US\$20 billion to US\$40 billion per year) is subject to climate risk and that very little ODA takes this risk into account.³⁵ There is a risk that climate change could impede the achievement of the United Nations Millennium Development Goals, including those on poverty eradication; child mortality; combating HIV/AIDS, malaria, and other diseases; and environmental sustainability.³⁶

Some countries are more vulnerable and less able to take adaptive measures than others. The UNFCCC also addresses issues of equity and solidarity, providing that vulnerable countries, particularly small island developing states and least developed countries (LDCs), should be assisted in adapting to the adverse effects of climate change.³⁷ From the perspective of developing countries, the promise of these provisions has not been fulfilled.³⁸ The United Nations currently classifies 50 countries as LDCs. These countries are generally those lowest on the development rung – one criterion is an annual per capita gross national income of less than US\$750.³⁹ The individual and total GHG emissions of this group of countries are almost negligible. Due

³⁴ VICE PRESIDENCY FOR SUSTAINABLE DEVELOPMENT, THE WORLD BANK, AN INVESTMENT FRAMEWORK FOR CLEAN ENERGY AND DEVELOPMENT: A PROGRESS REPORT (2006).

³⁵ *Id.* at 38.

³⁶ WORLD BANK GROUP, MANAGING CLIMATE RISK: INTEGRATING ADAPTATION INTO WORLD BANK GROUP OPERATIONS 5 (2006). The Millennium Development Goals and related documents are available at <http://www.un.org/millenniumgoals/>.

³⁷ See UNFCCC, Art. 4(8)–(9).

³⁸ As further detailed in [Chapter 5](#), several funds have been established to address the adaptation and technology needs of developing countries. The Least Developed Country Fund and the Special Climate Change Fund, both of which are voluntary funds, have supported studies, capacity building, and planning, but for actual adaptation projects, the Adaptation Fund, which was finally operationalized in 2007, should have greater resources at its disposal.

³⁹ The other two criteria are human resource weakness and economic vulnerability. See explanation on the Web site of the UN Representative for Least Developed Countries, Landlocked Countries, and Small Island Developing States, available at <http://www.un.org/special-rep/ohrrls/lcd/lcd%20criteria.htm>.

to their vulnerability to climate impacts, over the long term, LDCs stand to gain from stringent emission limitations by major emitters. In the short to medium term, however, they have less to gain from a climate change agenda dominated by mitigation concerns, including haggling among industrialized and emerging countries over the allocation of emission reductions. For small island states, the issue is even more pressing, and they have been the most vocal in calling for strict emission limitations. Their fairness claims are directly founded on the existential threat posed by climate change.

1.4. CHANGING NATURE

In the developed world, technology has permitted humans to remove themselves from the forces of nature so that shelter, food, work, and recreation can be provided, save in rare circumstances, independent of the climate. Today, the climate penetrates the public consciousness predominantly through natural disasters, such as Hurricane Katrina, and droughts and phenomena such as the El Niño effect. Despite its inherently unpredictable and dynamic character, society clings to the belief that like nature in general, climate can be conquered and controlled through technology. Even as the threat of climate change is understood, the reflex on the part of many policy makers and some scientists is to set store first by further research, and second by technology. Both are essential parts of the solution, yet they may also serve to avoid a more searching approach to the problem.

According to the Intergovernmental Panel on Climate Change (IPCC), surface temperatures have increased by 0.7 degrees Celsius over the past century, with current concentrations making some further warming inevitable.⁴⁰ Depending on their degree of vulnerability, countries will have to adapt more or less to the impacts of climate change. Adaptation will be particularly challenging for those societies that are already having difficulty providing for their people. Furthermore, the record of human adaptation – in prehistorical and modern eras – to climate change has not been simple or easy.⁴¹ Adaptation requires changes in technology as well as in social and

⁴⁰ INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, *supra* note 33, at 5.

⁴¹ Donald Worster, *Climate Change and History: Lessons from the Great Plains*, in *EARTH, AIR, FIRE, WATER* 72 (John K. Conway et al. eds., 1999). Worster refers to the efforts to make the Great Plains viable for agriculture and concludes, among other things, that adapting to a volatile environment with technology is a more unreliable strategy than is thought, often

cultural ways of life. Not for nothing is there frequent mention in myths and histories of calamitous climatic events.

Even as climate change serves to make society aware of its renewed vulnerability to extremes of climate – rattling the notion that nature has been tamed – it challenges the very conception of nature. For even as society has built up defenses, channeling and domesticating nature, it has retained a belief in the wildness of nature, with wilderness an iconic value, as evidenced, in banal form, in popular media advertising. As William McKibben notes, our faith in the essential strength of nature endures so long as we consider damage as local. However, shifting from the local to the global destroys that faith⁴²:

The idea of nature will not survive the new global pollution – the carbon dioxide and the chlorofluorocarbons and the like. This new rupture with nature is different not only in scope but also in kind from the salmon tins in an English stream. We have changed the atmosphere, and thus we are changing the weather. By changing the weather, we make every spot on earth man-made and artificial. We have deprived nature of its independence, and it is fatal to its meaning. Nature's independence is its meaning; without it there *is* nothing but us.

While this view is quite stark, it usefully underlines two important points. First, that global climate change, once-and-for-all, dispenses with the illusion that human impact on the climate is confined to the local and can be treated as such. Second, and following from the first, our relationship to, and conception of nature, must be re-evaluated. The notion that humanity's knowledge and technological prowess also implies mastery over the physical world is bumping up against its limits. A related issue concerns fundamental assumptions concerning economic growth and whether there may be limits to growth.⁴³ Certainly any climate policy predicated on, or implying, any significant limits on growth would be a political nonstarter in developing countries, but also in the industrialized world. Nonetheless, it is not certain that a stringent global climate change target is, in practice, compatible

bringing with it unforeseen consequences. He also underlines how we underestimate the challenge of cultural adaptation to the environment.

⁴² WILLIAM MCKIBBEN, *THE END OF NATURE* 58 (1989).

⁴³ DONELLA H. MEADOWS ET AL., *THE LIMITS TO GROWTH* (1972). The specific projections of resource shortages in the book were proved wrong, and the analysis adopted in the book was heavily criticized.

with economic growth of the kind to which the world has become accustomed.

The ideas sketched here are a reminder that global climate change presents a fundamental challenge to our social, cultural, and political systems. It is worth bearing in mind that climatic change reaches far back to the origins of humankind, playing a role in the evolution of the human species.⁴⁴ Climate change poses a challenge for scientists, philosophers, economists, and most crucially, politicians and policy makers. Climate change is a classical over-the-horizon problem – bold policy steps need to be taken today, with largely no return in the near term, even while scientists are still engaged in putting the precise outlines to the threat. As demonstrated by the halting effort to address it with international legal instruments, climate change poses enormous challenges for international environmental governance. From this perspective, the response to date can be regarded as a failure to fully acknowledge the scale of the problem. The question could justifiably be asked whether decision makers and citizens have faced up to the kinds of decisions that will need to be made.

While there exist a large number of environmental and development challenges (health, water, sanitation) vying for attention, climate change is linked in multiple ways with almost all of them. It has recently been found that climate change will be one of the main causes of biodiversity loss, threatening ecosystems such as coral reefs and subjecting fragile ecosystems to change on time scales that, in many cases, do not permit adaptation. Changes in temperature and precipitation patterns threaten agriculture, settlements, and development efforts. In many cases, the most severe impacts will occur where people are poor, directly dependent on natural systems for survival, and without the capacity or resources to adapt. Climate change is thus relevant to development and poverty alleviation and is likely to worsen existing distributional inequalities.⁴⁵

⁴⁴ A compelling hypothesis explains the sudden extinction of species and the appearance of new ones, to which the fossil record testifies, with reference to environmental change, specifically climatic change. See WILLIAM K. STEVENS, *THE CHANGE IN THE WEATHER: PEOPLE, WEATHER, AND THE SCIENCE OF CLIMATE* 19 (2001), referring to the work of Elisabeth Vrba, *On the Connections between Paleoclimate and Evolution*, in *PALEOCLIMATE AND EVOLUTION, WITH EMPHASIS ON HUMAN ORIGINS* 24, 25 (Elisabeth Vrba et al. eds., 1996).

⁴⁵ See UNITED NATIONS DEVELOPMENT PROGRAMME, *HUMAN DEVELOPMENT REPORT 2007/2008, FIGHTING CLIMATE CHANGE: HUMAN SOLIDARITY IN A DIVIDED WORLD* (2007).

1.5. THE IMPORTANCE OF ECONOMICS

Addressing climate change is, in effect, also a discussion concerning the structure of our economies and the energy systems that drive them. Almost invariably, any debate on response to climate change will refer to costs – either of mitigation measures, or of the likely losses stemming from climate impacts; this is not surprising because the economic implications of climate change are significant, with considerable uncertainty. Traditional economic analysis tends to put a lower value on committing resources to guard against damage in the future, such as climate change, as opposed to other concerns, such as fighting disease and providing access to clean water and sanitation.⁴⁶ A recent study commissioned by the United Kingdom comprehensively analyzed the cost of climate change, coming to the conclusion that the early action would be considerably less costly than further delay.⁴⁷

Economic analysis provides very useful tools to evaluate the costs and benefits of various courses of action. Nonetheless, the very dictates of such analysis – focused on what is the most efficient allocation of resources in the present – may imply limitations when considering decisions that may have profound implications on other peoples, now and in the future, and potentially irreversible impacts on systems whose value cannot be captured adequately in monetary terms. The framework of the analysis, while potentially maximizing human welfare in the present, may not account adequately for irreversible impacts on the biosphere such as losses of ecosystems like coral reefs. Decisions on combating climate change cannot be determined by the costs of action alone because the understanding of costs is informed by assumptions about what we value,⁴⁸ and those assumptions relate to ethical and moral values that stand outside economics.

⁴⁶ See, e.g., the so-called Copenhagen Consensus, which featured a panel of prominent economists, including three Nobel Prize winners, who were asked to rank the spending priority of a number of development challenges given an extra US\$50 million in aid resources. Controlling HIV/AIDS ranked at the top, while measures to combat climate change were ranked at the bottom. See *Putting the World to Rights*, THE ECONOMIST, June 3, 2004. The basic reason for coming to this conclusion is that under a cost-benefit analysis, the economic benefits of reducing global warming are largely not felt until well into the twenty-first century – and the costs are felt immediately. See also BJØRN LOMBERG ED., GLOBAL CRISES, GLOBAL SOLUTIONS (2004).

⁴⁷ NICHOLAS STERN, THE ECONOMICS OF CLIMATE CHANGE: THE STERN REVIEW (2006).

⁴⁸ GARVEY, *supra* note 10, at 101.

1.6. OUTLINE OF THE BOOK

The ultimate objective of the UNFCCC is the stabilization of atmospheric GHG concentrations “at a level that would prevent dangerous anthropogenic interference with the climate system,” that is, at a safe level.⁴⁹ Stabilizing concentrations can be roughly compared to slowly taking your foot off the accelerator pedal of a speeding car. The car will not stop immediately, but rather, will roll on for a long time; in the same way, the earth’s climate will continue changing, hundreds of years after atmospheric stabilization has been achieved. The longer the driver waits before decelerating, the greater the distance the car will travel; waiting to cut GHG emissions implies a higher stabilization level and more climate change. Looking forward, this means a finite amount of carbon that can be released into the atmosphere over the next century – the collective carbon budget. Setting a global stabilization target immediately raises the question of burden sharing, or *distributive fairness* – sharing the costs of mitigation, contributing to the costs of adapting to climate change, and allocating allowances to use the remaining atmospheric sink capacity. Emissions need to contract dramatically to meet so-called safe stabilization levels. On what basis will the declining total global emissions be allocated – roughly in proportion to past emissions (acquired rights), inversely related to past emissions (historical responsibility), or in relation to developmental status and attainments (capacity)? How will the mitigation burden be allocated among nation states?

This book maps out some of the fairness principles underpinning debates on the sharing among nations of the burdens and benefits of combating climate change. This raises questions of distributive fairness or justice. Only once there is agreement, however, on the amount of climate change deemed acceptable – expressed as a stabilization target, temperature level, or other metric – is it possible to consider a fair distribution of emissions. That is to say, one should first ask, what is the amount of climate change (represented by the stabilization target) that is considered safe? One part in this determination is scientific and empirical, the other moral and ethical. The European Union has proposed that the increase in global average temperatures should be held to below 2 degrees Celsius above preindustrial levels. Yet holding warming to this level will be a daunting challenge. Consider

⁴⁹UNFCCC, Art. 2.

that *current* atmospheric concentrations of GHGs fall within the range the IPCC projects would result in warming of 2 to 2.4 degrees Celsius.⁵⁰ Higher levels of warming are regarded by many as unsafe: warming of between 1.6 and 2.6 degrees Celsius could lead to localized melting of the Greenland ice cap, 10 to 40 percent of species committed to extinction, and increased flooding and drought severity.⁵¹ Warming of 2.6 to 3.6 degrees Celsius, associated with a doubling of preindustrial concentrations of CO₂, could trigger a partial or, possibly, a total melting of the Greenland ice cap, a process that could take centuries to millennia and would raise global sea levels by 2 meters, or 7 meters, in the case of a complete melting. Having the scientific knowledge at hand, one needs to ask, what are the relevant principles of justice informing any decision? What ethical and moral standards are used in weighing impacts on lives, now and in the future?

The objective is not to further explore here the ethical and moral questions pertaining to a safe level of climate change; rather, the aim is to underline that a conceptual boundary exists between that enquiry and the fairness of the attendant burden-sharing arrangement (distributive fairness). Although both dimensions raise ethical and moral issues, they are not the same. Ethical and moral standards bearing on the question of an acceptable level of climate change have consequences for the long-term integrity of the biosphere; distributive fairness primarily governs the allocation of economic costs and developmental opportunities. In determining the permissible amount of climate change, what is our responsibility to small islands that will be lost, and how should we value their claim to maintain intact cultures and societies? What is the value of diverse ecosystems? Making and defending moral and ethical claims in cases such as these is different to arguing about which rules should govern how the pie – the burden of combating climate change – is divided. Thus fairness principles prominent in the discussion about burden sharing – historical responsibility for climate change, the wealth and differential technological and institutional capacities of countries – are not of determining importance when assessing

⁵⁰The present CO₂ concentration is 380 parts per million (ppm). Concentrations in the range of 350–400 CO₂ ppm are consistent with warming of 2–2.4 degrees Celsius. See INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2007: MITIGATION, CONTRIBUTION OF WORKING GROUP III TO THE FOURTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 229 (Bert Metz et al. eds., 2007).

⁵¹*Id.* at 230.

what amount of warming would be consistent with justice. For example, if island state A has a moral claim to be protected from a certain amount of climate change, then in principle, that claim ought to be weighed quite independently of what would constitute a fair allocation of future emissions between highly developed country X and populous, developing country Y.⁵² Although a stringent stabilization target entails a smaller global carbon budget, given the variety of conceivable burden-sharing arrangements, it does not *necessarily* imply anything about the share to be borne by any particular country. Interestingly, empirical studies confirm that – especially for developed countries – the chosen stabilization target, not the particular allocation arrangement, is the determining factor with respect to countries' required mitigation effort.⁵³

Careful deliberation is called for when considering what would constitute a fair or just amount of climate change, as expressed in the form of a stabilization target or other metric. I have argued here that this question should be considered independently – but not in isolation from – questions of distributive fairness. Undeniably, justice in stabilization and distributive fairness are linked in important ways. First, any stabilization target that is adopted will entail some further climate change and hence adaptation costs; these costs will be either higher or lower, depending on the stabilization target. Developing countries will face the brunt of climate impacts, but lacking in financial and technological resources, they will need assistance from developed countries. In this context, it may be natural to argue that those with the greatest historical contribution should bear a greater share of such compensatory payments. This issue is pressing; already, emissions to date have committed us to a certain amount of climate change so that adaptation is no longer an option, but a necessity. Second, climate change raises issues of intergenerational justice.⁵⁴ Any significant abatement action – that is, deviation in GHG emissions from a business-as-usual scenario – will entail some costs to society, now and in the future. Yet the benefits, in the form of a reduction in climate change, will accrue almost entirely to future generations. Broadly speaking, any global agreement on combating

⁵²For the purpose of the argument advanced here, I assume that moral/ethical arguments can be advanced in the name of states and/or their populations.

⁵³NIKLAS HÖHNE & SARAH MOLTMAN, *THE DISTRIBUTION OF EMISSION ALLOWANCES UNDER THE GREENHOUSE DEVELOPMENT RIGHTS AND OTHER EFFORT SHARING APPROACHES*, report prepared for the Heinrich-Böll-Stiftung 27 (2008).

⁵⁴EDITH BROWN WEISS, *IN FAIRNESS TO FUTURE GENERATIONS* (1989).

climate change thus involves an explicit or implicit distribution of burdens and benefits *across* present and future generations. Thus a stringent stabilization target imposes greater burdens on present generations and bestows greater benefits (less climate change) on future generations. In the case of distributive fairness, the choice of burden-sharing arrangement can also have distributional consequences across nations. Thus an arrangement based on historical emissions would shift the greater part of the burden onto current and future generations in developed countries, and away from present and future generations in developing countries. Third, notwithstanding the point that burden-sharing arrangements are conceptually independent of the moral and ethical questions raised by the stabilization target, or long-term vision, countries are more likely to adopt such a target if they have a good idea of their expected shares of the burden. The key here is the relative share of the burden. Thus, in a practical sense, agreement on the framework of distributive fairness constitutes the missing piece of the puzzle in adopting a global, long-term target. This book sets out to deepen the understanding of distributive fairness in the context of the climate change regime.

Agreement on a comprehensive definition of *distributive fairness* is destined to remain elusive. Therefore the approach followed here is to identify and briefly discuss a number of – by no means all – fairness principles. In particular, the objective will be to articulate a number of fairness principles that could potentially constitute the basis for a rough, working ethical consensus in the climate change regime. The following representative fairness principles have been selected and are analyzed in turn: egalitarian, responsibility or contribution, need, and capability based. Naturally, these various principles interact and overlap in the climate change discourse.

The book continues in [Chapter 2](#) with an overview of the key findings of the IPCC. Energy and its various dimensions – sources, growth rates, technology – are at the heart of the climate change problem. Accordingly, [Chapter 2](#) provides an overview of the energy challenge. The intention is to capture a few key aspects without doing a disservice to this complex topic. It will be seen that the politics around the international climate change negotiating process had a major hand in shaping the IPCC, a unique institution that operates on the basis of intergovernmental consensus, but at the same time must maintain its scientific credibility.

Chapter 3 provides an overview of the UNFCCC and its Kyoto Protocol in greater detail. The chapter covers the genesis of these two instruments and introduces their key provisions. It then goes on to trace the operation and elaboration of the climate change regime through successive meetings of supreme bodies of these two instruments, respectively, the Conference of the Parties (COPs) of the UNFCCC and the COPs serving as the meeting of the Parties (COP/MOP) to the Kyoto Protocol.

Chapter 4 maps out various approaches and conceptions to fairness. Fairness claims are a major part of the climate change regime. The Framework Convention – the universally accepted legal instrument for action to combat climate change – assigns a prominent place to equity.⁵⁵ In December 2007, the parties agreed to launch negotiations on a post-2012 climate agreement, which, to be successful, will need both to deliver bigger emission cuts and engage a wider group of states than is currently the case under the Kyoto Protocol. The climate policy negotiated in the next few years will decide how the burden of responding to climate change will be apportioned. It is no surprise, then, that fairness concerns are moving into the limelight. The analysis in this chapter aims to outline the foundations of fairness, before moving on to identify a number of principles that could contribute to a rough, working consensus on fairness in climate change. While general dimensions of fairness are considered, the analysis focuses on allocating responsibility for addressing climate change through mitigation action.

Having analyzed fairness at a theoretical level in the previous chapter, Chapter 5 proceeds to identify and analyze the fairness and equity principles embedded in the Convention and the Protocol. Extensive reference is made to the principle of common but differentiated responsibilities, which is a mainstay of the international discourse on climate change. As potential examples of fairness in practice, the implementation of provisions relating to technology transfer and financial assistance are also examined in more detail.

Chapter 6 evaluates a selection of proposals for a future climate policy against the fairness principles identified in Chapter 4 as well as a set of

⁵⁵The European Commission and 191 states have ratified or acceded to the Convention, leaving as the only nonparties Andorra, the Holy See, Iraq, and Somalia. See Web site of the UNFCCC secretariat, available at http://unfccc.int/files/essential_background/convention/status_of_ratification/application/pdf/unfccc_conv_rat.pdf.

policy criteria. A good, albeit preliminary, indication of the usefulness of fairness principles would appear from the extent to which climate change policy proposals do – or do not – reflect a balance of fairness principles. This chapter also identifies and applies a selection of policy assessment criteria drawn from the literature. At this point, it should be noted that to a considerable degree, the discussion of fairness in Chapters 4 and 5 could be applicable to both adaptation to the impacts of climate change and the mitigation of GHG emissions. Both adaptation and mitigation are undeniably important. The focus in [Chapter 6](#), however, is on mitigation and, in particular, specific proposals for climate policy, the emphasis of which tends to be on mitigation efforts. This word of caution is necessary because adaptation raises equity concerns that, while important, fall outside the scope of this book.⁵⁶

The conclusion seeks to draw together the strands of the analysis and then proceeds to make a number of proposals for future climate policy. It is suggested that these proposals would contribute to a post-Kyoto climate agreement that is consonant with fairness principles, as articulated in the prior analysis, while also being capable of implementation, taking into account prevailing economic and political realities.

⁵⁶ For a discussion of fairness in the context of adaptation, see *FAIRNESS IN ADAPTATION TO CLIMATE CHANGE* (Neil Adger et al. eds., 2006).