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Introduction: Wet Feet Marching

Blame It on Rio?

Imagine you carefully save money your entire life to buy a beautiful piece of land in the country to farm. The land and equipment cost more than you expect, and you quickly become dependent on a narrow margin of profit to sustain yourself and your family. Soon after you move in, however, someone buys the property bordering your land and immediately opens a landfill, accepting trash and hazardous wastes from the entire region. A mountain of trash rapidly grows; the landfill stinks, the noise of the trucks and bulldozers is deafening, and the waste leaks into your groundwater. Since the land is in an unzoned, unincorporated township, you have no recourse to stop the dumping through zoning limits, and the landowner is best friends with the major political and economic players in the county, state, and even the federal government. The value of your property plummets, and you cannot afford to move. The owner of the dump lives elsewhere and grows rich on its income; you suffer all the costs of his operation and gain none of the benefits.

You seek to make an agreement with the neighbor, asking for some limits on his behavior. He negotiates with you for years, but never agrees to any substantial changes in his dumping. Instead, he says it would be unfair to have to do so unless you also agreed to stop dumping your farm waste, which would prevent you from being able to farm effectively. You turn to your other neighbors, seeking partners who will force the dump owner to clean up or close. Some agree, but these are only the poorest and least powerful of your neighbors—the others are friends of

the dump owner, or own businesses that they fear might be hurt by the restrictions you seek.

The dump owner suggests that the impacts of his dumping require more study and promises enormous research projects by scientists of his choosing. Repeatedly and with great fanfare he promises to lend you money on good terms to build a wall as a visual screen, to clean your drinking water, and to help you deal with other effects. Desperate for any progress, you accept his offers, but his promises are quickly forgotten, and the improvements are never completed. He asks you again to sign an agreement that in a few years would make it impossible for you to increase production on your farm to the point where your family could live decently. You and the other less powerful neighbors resist the agreement.

With only slight changes in the details, this is the story of global warming and all the years of discussion and action since the issue was identified in the late 1980s.

Now picture this nonfictional scene: After three years of frustrating negotiations following the drafting of the world's first framework for a treaty on global warming, Atiq Rahman, of the Bangladesh Centre for Advanced Studies, rose to his feet in a huge Berlin conference room. Looking out across a sea of scientists, negotiators, and lobbyists from around the world, Rahman struggled to express the urgency of the injustice of global warming in as plain words as he could find.[1] In the decade leading up to the 1995 conference, Bangladesh had been struck by two devastating floods and two typhoons that left over a hundred thousand people dead and tens of millions of people homeless.[2] With climate change, scientists predicted a rise in sea level and more severe tropical storms. "If climate change makes our country uninhabitable," Rahman warned, "we will march with our wet feet into your living rooms."[3]

Looking back a decade later, Rahman's warning remains as painfully absurd now as it was then. The globe's wealthy and poor nations live in worlds so distant and disparate, and the wealthy are so sealed off from the poor, that Rahman's words might sound farfetched. Yet the plight of the world's poor cannot be ignored. The issue of reconciling social justice with environmental protection has surfaced at every major international meeting since the first environment and development conference at Stockholm in 1972, Nairobi in 1982, Rio in 1992, Rio+5 in New

York, and Johannesburg in 2002. At the Rio Earth Summit, poor nations feared limits on their efforts to grow economically and care for the basic needs of their people, but several powerful industrialized nations refused to curtail their own excesses unless poor nations did the same. President George H. W. Bush's famous statement that "the American lifestyle is not open to negotiation" remains a colorful reminder of this key sticking point.

The most controversial issue at Rio was global climate change. Under intense pressure to do something, 187 nations eventually signed the United Nations Framework Convention on Climate Change (UNFCCC).[4] However, the treaty avoided tough details. It called on nations to "protect the climate system . . . on the basis of equity and in accordance with their *common but differentiated responsibilities and respective capabilities*," but consensus on these "first principles" masked profound disagreement on the issue of actual obligations. Developing countries interpreted the "common but differentiated" language with great precision: industrialized nations would need to take the lead by cutting their own emissions and transferring large sums of environmental assistance to the South.[5] However, developed countries saw more room for selective interpretation.

Before the ink had even dried on the UNFCCC agreement, rich nations began to backpedal on their promise of massive technology transfer and technical assistance to the developing world.[6] The estimated price tag for sustainable development in the Third World was $625 billion a year, with the North supplying about 20 percent of the total cost in grants or below-market rate loans.[7] However, the rich nations delivered less than one-fifth of that promise.[8] Three years later, the "Berlin Mandate" called for the rich nations to first reduce their emissions, with the poorer nations joining on the second or third round. More rounds of negotiations foundered on the rocks of equity and justice at Kyoto, Buenos Aires, Bonn, The Hague, and Marrakech.[9] President Bill Clinton signed on to the Kyoto Protocol to limit carbon dioxide emissions in 1997, but even before he did, the U.S. Senate voted 95 to 0 to support the Byrd-Hagel Resolution, which would block any "unfair" treaty that did not require the poor nations to also address the problem.[10]

This move by the United States bred great animosity in the developing world because of what was widely perceived to be Americans co-opting

and thus undermining the Southern position of "climate injustice." Third World policy makers and activists were quick to point out that the average U.S. citizen dumps as much greenhouse gas into the atmosphere as nine Chinese and eighteen Indians, and that developing countries are immeasurably more vulnerable to rising tides, tropical storms, droughts, and flooding than rich nations. However, as we will argue in this book, social understandings of fairness are highly elastic and subject to political manipulation. The ominous 95 to 0 vote on the Byrd-Hagel Resolution specifically tried to discredit the protocol on the basis of the "*disparity of treatment* between Annex I Parties [essentially the wealthy OECD] and Developing Countries."[11]

Eventually, U.S. Secretary of State Madeline Albright declared a "diplomatic full court press to encourage meaningful developing country participation," but poor nations continued to hold out.[12] Yet interestingly, almost all developing countries refused to accept scheduled commitments for future reductions of emissions in the name of fairness. In fact, the very suggestion that poorer nations should restrict their economic growth by reducing emissions led to an openly hostile negotiating environment. China's lead negotiator said "In the developed world only two people ride in a car, and yet you want us to give up riding on a bus." Facing pressure from President Clinton, Chancellor Luiz Felipe Lampreia of Brazil flatly stated, "We cannot accept limitations that interfere with our economic development."[13]

President Clinton and Vice President Gore never dared to bring Kyoto to the Senate for ratification. Their successors, President George W. Bush and Vice President Cheney, then pulled the United States out of the Kyoto treaty entirely in March 2001 and in February 2002 offered a much weaker policy on reducing U.S. contributions to global warming. The Bush administration continues to oppose Kyoto because it is "an *unfair* and ineffective means of addressing global climate change concerns" and "would cause serious harm to the U.S. economy."[14]

Diametrically opposed perceptions of "climate justice" among rich and poor nations, we argue, pose a serious threat to political resolution and pollute a diplomatic atmosphere already teetering on the edge of disaster. Scientists and environmentalists in the world's wealthier nations are mystified as to why this life-threatening issue has elicited such an anemic policy response, but many of them miss the point: Responses to

climate change are wound up with other social and economic issues facing nations and are fundamentally about inequality and injustice. The Kyoto Protocol suffers from a similar short-sightedness. While Russia's ratification of Kyoto has put the treaty into effect, and public concern about climate change seems to be increasing, the foot dragging of the world's largest emitter and the skittishness of developing countries cast a long shadow of uncertainty over the future viability of any post-2012 North-South climate pact. A better understanding of the current policy impasse is therefore urgently needed.

Our Argument in Brief

Over the past twenty years, the theoretical literature in international environmental relations has blossomed. Scholars have argued that international environmental policy outcomes are the result of material self-interest,[15] bargaining power,[16] and the ability to strong-arm weaker states through more coercive forms of power.[17] Others have emphasized the importance of exogenous shocks and crises,[18] salient solutions,[19] a scientific "burden of proof,"[20] environmental nongovernmental organizations (NGOs),[21] postmaterialist values,[22] epistemic communities,[23] transnational activist networks,[24] corporate nonstate actors,[25] intergovernmental organizations,[26] and political leadership.[27] Yet curiously, few scholars speak of the one variable singled out repeatedly by policy makers: global inequality. The small body of theoretical work that does exist on the topic rarely provides clear causal explanations of how inequality matters and under what conditions it affects outcomes in international environmental politics. Most analysts rely selectively on anecdotal evidence and particularize explanations without explicitly addressing the generalizability of their claims.[28] And rather than explaining the origins of global inequality and the forces leading to its persistence, scholars often take it as given. Inequality as it relates to climate change is also rarely measured systematically in its several dimensions, and its roots are poorly understood.

We take a different approach. We develop scientific measures of climate inequality, utilize statistical methods to evaluate its proximate and deeper social and historical determinants, and examine the causal channels through which inequality influences the form, frequency, timing,

substance, and depth of international cooperation. Our account of the North-South stalemate on climate policy relies on the integration of three types of arguments: general theories about the behavior of states, intermediate explanations about international environmental politics and North-South politics, and issue-specific insights concerning the "problem structure" of climate change.

In the first group are issues of trust, worldviews, causal beliefs, and principled beliefs—issues we believe are largely attributable to the position of countries in the global division of labor. Inequality, we argue, dampens utility-enhancing cooperative efforts by reinforcing structuralist worldviews and causal beliefs, creating incentives for zero-sum and negative-sum behavior, polarizing preferences, generating divergent and unstable expectations about future behavior, eroding trust and civic norms among different social groups, destabilizing policy coalitions, and making it difficult to coalesce around a socially shared understanding of what is "fair."

At the intermediate level are explanations of the ongoing development crisis and those arising in environmental debates over the definition of sustainable development, foreign assistance for the environment, and global versus local environmental concerns. Climate negotiations do not take place in a vacuum. They are taking place at a time when concerns about Northern callousness and opportunism in matters of international political economy are rising, levels of generalized trust are declining, and calls for fair processes and fair outcomes are being marginalized. The North-South impasse on climate policy is, in other words, linked to larger systemic problems that hinder cooperation between rich and poor nations more generally. Compounding this problem, for more than thirty years the environmental issues of most concern to developing countries have been brushed aside and replaced with First World issues. However, global commons issues, such as ozone depletion, habitat loss, and climate change, are much less pressing to most poor nations than providing safe drinking water, slowing soil erosion, treating sewage, slowing the spread of deserts, and reducing lung- and eye-burning air pollution.[29] This wedge between Northern and Southern interests has put rich donor countries in the difficult business of "persuad[ing] recipient countries . . . to take the environmental actions of [lowest] priority to them."[30]

Finally, we rely upon a series of explanations that are specific to the "problem structure" of climate change. Part of the reason cooperation on climate change is so difficult to achieve is intrinsic to the problem itself: the number of parties needed to resolve the problem, the complexity of the problem, the time sensitivity of the solution, the quantity and quality of information, the high levels of uncertainty surrounding the issue, the stability and intensity of actor preferences, the "observability" of climate-related behavior, and the asymmetry of externalities. We argue that to understand why countries are willing or unwilling to cooperate and make sacrifices for the protection of what may be their way of life, we must first identify which nations are most responsible for global climate change, which nations will most suffer the effects of climate change most profoundly, and which nations will most likely bear the largest costs of cleaning up the mess. This "triple inequality" of responsibility, vulnerability, and mitigation, which is also intrinsic to the problem, offers a powerful and parsimonious explanation for the negotiation positions adopted by rich and poor nations.

To test the observable implications of these theories, we rely on the new cross-national indicators of climate responsibility, vulnerability, and action, as well as the statistical tools of multiple regression and path analysis. Rather than proposing that one factor outweighs all others, we synthesize complementary theoretical insights and attempt to empirically discriminate between competing explanations. While recognizing that there are often aspects of truth in multiple explanations, we studiously avoid the "indeterminate 'everything matters' approach" adopted by many international relations scholars.[31] Some of the factors emphasized in the extant literature hold up in this large-*N* empirical analysis; many do not.[32]

In taking this synthetic approach, we hope to demonstrate a need for theoretical bridge building in international environmental politics. Theoretical synthesis has figured prominently in the study of security,[33] human rights,[34] public health,[35] and development finance,[36] yet self-conscious attempts at bridge building in international environmental politics are surprisingly rare. There are, of course, important battles to be fought in international relations—for example, realism versus institutionalism, rationalism versus constructivism, and structure versus agency—but we must remember that "[t]heory and method are . . . means not ends; they exist to promote our understanding of empirical causes by

encouraging theoretical breadth, logical coherence, and empirical objectivity."[37] Many of us are guilty of retreating to our preferred "islands of theory" and ignoring theoretical complementarities, but pursuing this strategy comes at a high scientific price.[38] Failing to thoughtfully consider bridge building prospects often means overlooking interconnected causal processes and thus creating caricatures of a complex social world.[39]

Rising Tides in an Unequal World

How does inequality drive so much of the noncooperative behavior observed between the global North and South? We argue that it does so by two paths. First, there is the direct path, which we discuss briefly in this chapter. The extreme poverty of dozens of nations and the relative powerlessness of a larger number leaves them without the capacity to negotiate effectively with the North and unable to meaningfully address their emissions of greenhouse gases because of their extremely undeveloped economies and government agencies. The second path driving noncooperation on climate change has been almost universally overlooked, but we argue it is potentially more important than the shortage of technical capacity. The experience of poorer nations in the world economy and their interaction with rich nations across multiple issue areas has reinforced a worldview and a set of causal beliefs that are at odds with those of the wealthy nations; this has bred generalized mistrust and polarized expectations about how to proceed on climate issues. Mistrust and divergent and unstable expectations have also led to defensive negotiating strategies by poorer nations and reduced the likelihood of reaching a mutually acceptable agreement.

In the remainder of this chapter we discuss the broad contours of global inequality in wealth, relative power, knowledge, negotiating skills, vulnerability to hydrometeorological disasters, responsibility for climate change, and in who has made efforts to clean up the atmosphere.[40] As mentioned earlier, to understand the non-cooperative postures of developing nations, we first need to understand the defining features of climate change as a political issue: the unavoidably global nature of the problem, the enormous divide in responsibility for the problem, the

highly asymmetric distribution of burdens and benefits associated with the warming of the earth's climate, and inequality in who is expected to deal with its causes and consequences.

Globalization and the Unequal Costs of Climate Change

The existing body of scientific evidence on global climate change strongly suggests that the emissions coming out of our exhaust pipes contribute to a layer of heat-trapping carbon dioxide that will create—and perhaps has already created—a warmer and wetter atmosphere, and, in turn, terrible outcomes like more flooding in Bangladesh, devastating hurricanes in the Caribbean, and droughts in the Sudano-Sahel region of Africa.[41] Climatologists have observed a sharp upswing in the frequency, magnitude, intensity, and duration of hydrometeorological disasters over the past two decades:

- The five warmest years on historical record were 2005, 1998, 2002, 2003, and 2004, and hydrometeorological disasters have more than doubled since 1996.[42]
- The number of major natural catastrophes was four times larger, and cost the world's economies eight times more during the 1990s than in the decade of the 1960s.[43]
- Ninety percent of natural disaster fatalities during the 1990s were the result of hydrometerological events (e.g., droughts, floods, hurricanes, and windstorms).[44]

These shifting hydrometeorological patterns are not lost on global opinion leaders. In 2004, British Prime Minister Tony Blair characterized climate change as "a challenge so far-reaching in its impact and irreversible in its destructive power, that it alters radically human existence," and stated his intention to use the G-8 presidency as a bully pulpit for reform.[45] Former chair of the Intergovernmental Panel on Climate Change (IPCC), John Houghton, has described climate change as a weapon of mass destruction.[46] And *The Economist* calls global warming "a potential time bomb capable of wreaking global havoc."[47]

It therefore appears that with the expansion of international contact and scientific understanding of global environmental issues such as depletion of the ozone layer and climate change, there is a growing understanding about the "commonality of problems," a new global consciousness that

we are all together on this "Spaceship Earth."[48] Yet curiously, this new global consciousness about environmental issues often occludes important differences in blame. With only 4 percent of the world's population, the United States is responsible for over 20 percent of all global emissions (see chapter 5 for more detailed comparisons). That can be compared with 136 developing countries that together are responsible for only 24 percent of global emissions. Clearly, poor nations remain far behind wealthy nations in terms of emissions per person. The average American citizen dumps many times more greenhouse gases into the atmosphere than the majority of humans who live on Earth—four or five times the global average. Overall, the richest 20 percent of the world's population is responsible for over 60 percent of its current emissions of greenhouse gases. That figure exceeds 80 percent if past contributions to the problem are considered, and they probably should be considered, since carbon dioxide, the main contributor to the greenhouse effect, remains in the atmosphere for more than a hundred years.

Those who emphasize that climate change is everybody's problem, or a "global public bad," also obscure the ways in which its impacts are socially distributed across human populations. Some populations suffer worst and first, and they are often not those who caused the problem. Rapidly expanding populations in Africa, Asia, and Latin America are facing more frequent and more dangerous droughts, floods, and storms, and have suffered immeasurably more loss of life and livelihood from hydrometeorological disasters than those in rich nations.[49] According to the World Bank, "[b]etween 1990 and 1998, 94% of the world's disasters and 97% of all natural-disaster-related deaths occurred in developing countries."[50] Many of these regions are of course already afflicted by chronic underdevelopment, water scarcity and pollution, land degradation, food insecurity, civil conflict, infectious disease, and feeble domestic institutions. Large informal squatter settlements in overcrowded coastal cities find themselves just meters away from eroding shorelines and riverbanks.[51] Small island states, already at risk because of their highly climate-dependent exports, struggle to overcome high transport costs, weak coastal defense systems, and fragile ecosystems.[52] Groups of "climate refugees" are on the move because of resource scarcity, growing insecurity, and violent conflict.[53] Yet, somewhat ironically, many of the largest contributors to global warming could gain from the effects of

climate change in the short to medium term. Experts predict that North America and parts of northern Europe may enjoy economic gains from longer growing seasons, less frost, and thus increased agricultural output.[54]

There will also likely be inequality in who will be most responsible for reducing emissions. Since the low marginal costs of reducing emissions in developing countries make near-term reductions in the industrialized world relatively inefficient, many Western policy makers and scientists believe that countries like China and India—where average annual incomes are less than $1,000—should cut their greenhouse gases before or at the same time as rich countries. Congressman David M. McIntosh, the chairman of the U.S. House of Representatives Subcommittee on National Economic Growth, Natural Resources, and Regulatory Affairs, stated in 1998 that "[the Kyoto Protocol] . . . is patently unfair because it exempts 77 percent of all countries from any obligations. China, India, Mexico, and Brazil, just to name a few, are completely unfettered by the Treaty—these countries already have the competitive advantages of cheap labor, lower production costs, and lower environmental, health, and safety standards. If President Clinton has his way, now these countries will be free to develop and pollute all they want, while the U.S. economy goes into a deep freeze."[55] In fairness, many Western policy makers have come to accept the idea that poorer countries should be assisted in this transition, but the onus is in some measure being placed on developing countries, and this raises extremely difficult issues of actual and perceived unfairness.

These inequalities in climate vulnerability, responsibility, and mitigation also exist in a wider context of "asymmetric globalization."[56] In the interest of space, we will not review the highly contentious literature on whether inequality in global income is increasing or decreasing.[57] More important for this discussion is the scale of global inequality. World Bank data suggest that the average per capita income of the richest twenty countries exceeds the average for the poorest twenty countries by thirty-seven times.[58] Measuring individual incomes rather than national incomes, the United Nations Development Programme (UNDP) estimates that the richest 20 percent of the world's population controls 80 percent of the world's income. By comparison, the poorest 20 percent controls just 2 percent of the world's income, and the middle 60 percent

controls 6 percent of global income.[59] Branko Milanovic reports that roughly the same share of global income accrues to the richest 1 percent of the world's population as to the poorest 57 percent.[60]

A few nations are seeing median household incomes rise, but most are not, and the cavernous divide between the world's rich and poor nations is not disappearing. In fact, one of the defining characteristics of the global distribution of income is its so-called "missing middle." Most of the world's population earns an average annual income either below $1,500 or above $11,500, while an astonishingly small fraction of the global population makes up the so-called global middle class (between $5,000 and $11,500; see figure 1.1).[61] This apparent lack of mobility in the global division of labor has reinforced the popular perception that the world is divided into "haves" and "have-nothing-at-alls."[62] G-77 scholar Adil Najam puts it clearly indeed: "[t]he self-definition of the

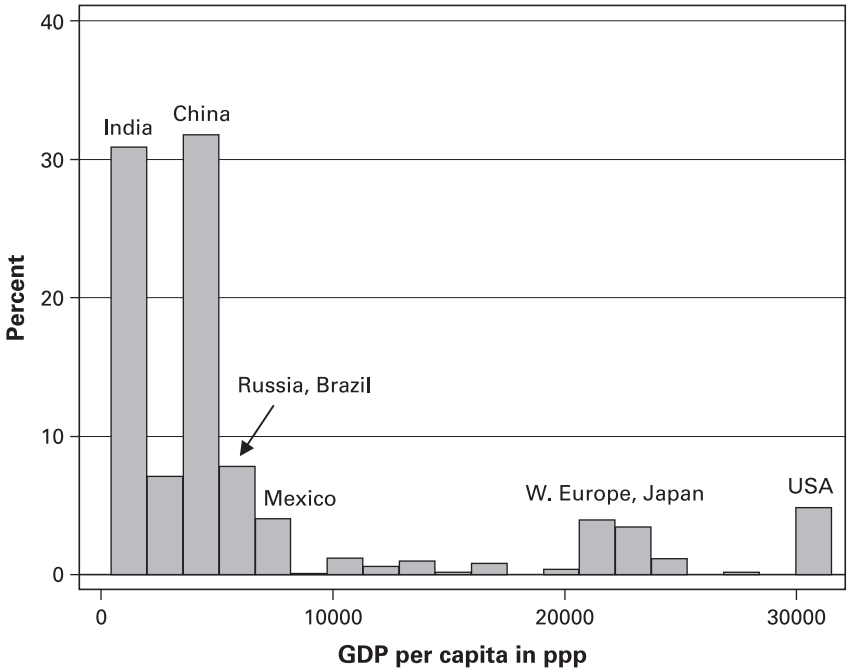

Figure 1.1
The "missing middle": distribution of people according to per capita income of the country where they live (year 2000). *x*-axis, per capita GDP in 1995 international prices; *y*-axis, share of world population. (From Milanovic 2005b)

South . . . is a definition of exclusion: these countries believe that they have been bypassed and view themselves as existing on the periphery."[63]

Further reinforcing these structuralist ideas are the callous—and at times opportunistic—actions taken by Western governments as well as the contemporary forces in the global economy that make upward mobility in the international division of labor extremely difficult. In a 2005 *Foreign Affairs* article, Nancy Birdsall, president of the Center for Global Development, Harvard economist Dani Rodrik, and International Monetary Fund (IMF) division chief Arvind Subramanian provide one such example: "In the context of international trade agreements in particular, developing countries have been asked to take on obligations that have been clearly inimical to their development interests. Perhaps the most egregious example of this in recent times has been the WTO's intellectual property agreement, TRIPs [The Agreement on Trade-Related Aspects of Intellectual Property Rights]. TRIPs will have the effect on poor countries of increasing the costs of and reducing access to essential medicines and this at a time when one of the worst health epidemics ever known by man—AIDS—ravages the developing world. The flip side of the costs to these countries is the profits that will be transferred from consumers and taxpayers in poor countries to pharmaceutical companies in the rich world. In other words, TRIPs will entail a pure transfer of rents from poor to rich."[64]

Another example of callous and opportunistic behavior is the Western crusade to limit the use of industrial policy instruments by developing countries. Through international financial institution (IFI) conditionality, bilateral reprisals, tariff escalation policies, restrictive multilateral and bilateral trade and investment agreements, and "expert advice," poor nations have been strongly encouraged to develop in line with their comparative advantage.[65] Yet, many of these very same comparative advantages have left developing countries at the bottom of the global income pyramid after generations of working in mining, agriculture, and low-wage labor. Their economies and government revenues continue to ride the rollercoaster of price volatility as their bread-winning exports rise and fall on the global market. World Bank economist Paul Collier likens the impact of a typical commodity price shock in a developing country to an event more familiar to Western audiences: "[T]he sort of shocks that are hitting those developing countries which are dependent upon a

narrow range of primary commodities are *analogous only to the great depression of the 1930s*. In the case of the typical large negative export shock, directly costing 7 percent of GDP [gross domestic product], the shock then triggers a cumulative contraction in the economy over the next two or three years, leading to an additional loss of output of around 14 percent of initial GDP."[66] As we document in the coming chapters, by punishing resource-dependent nations that make efforts to upgrade their industrial capacity, increase local value-added, and encourage employment, rich nations effectively seal their own fate in global environmental negotiations.

This is, of course, only the tip of the proverbial iceberg. A whole range of Western policies that fail to acknowledge, or deliberately overlook, the structural dilemma of developing countries are also fatefully unhelpful to North-South climate negotiations. These include austere bilateral and multilateral conditionalities that limit national autonomy in setting policy, tariff escalation, agricultural protectionism, bilateral investment treaties and other "deep integration" agreements, commodity support funds that offer loans rather than grants, and IFI governance structures that prevent the institution's main clients from having any significant voting power. Our thesis is simple: When powerful states disregard weaker states' position in the international division of labor in areas where they possess structural power, they run a high risk of weaker states "reciprocating" in policy areas where they possess more bargaining leverage. The issue of global climate change—which itself is characterized by tremendous inequality in vulnerability, responsibility, and mitigation—can therefore not be viewed, analyzed, or responded to in isolation from the larger crisis of global inequality.

One Man Against an Army: Negotiating Climate Treaties for Poor Nations

Vast differences in absolute and relative income have a tremendous impact on the ability of countries to attend international conferences, participate in international organizations, and hire skilled negotiators.[67] This is what we call the direct route through which inequality reduces the likelihood of cooperation on climate change. It determines whether nations can pay for salaries and accommodations, draft proposals with

proper legal argumentation and nomenclature, attend the many formal and informal meetings at conferences, and respond to the demands of powerful nations with well-thought-out counterproposals. It also determines whether a nation can provide reliable information about its intentions, abilities, and past behavior, and whether it can evaluate other nations' intentions, abilities, and behavior.[68] "The reason why many poor small countries are hardly represented in negotiations that concern them directly," writes Robert Wade, "is that they cannot afford the cost of hotels, offices, and salaries in places like Washington DC and Geneva, which must be paid not in PPP [purchasing power parity] dollars but in hard currency bought with their own currency at market exchange rates."[69] Furthermore, to avoid being eaten alive in negotiations, the governments of less developed countries (LDCs) must hire lawyers, economists, scientists, and consultants to assist them in negotiations. This requires hard currency, generally U.S. dollars. More often than not, they go without this help.

Michael Richards of the Overseas Development Institute has studied the average number of delegates sent to climate change negotiations and found that numbers vary greatly between developed and developing countries.[70] To give an idea of the disparity, he describes the situation at COP-6, where the United States brought ninety-nine formal delegates and the European Commission brought seventy-six, while many small island and African states were lucky if they could assemble a delegation of one, two, or three persons. These numbers gloss over even greater disparities. Wealthy nations typically show up at international conferences with a convoy of lawyers, legal experts, scientists, economists, skilled diplomats, and observers, allowing them to read every document, attend every committee meeting, and painstakingly weigh the pros and cons of proposals. Our experience at COP-10 in 2004 and an examination of the list of its 6,200 approved participants confirmed these trends. By contrast, developing country delegations often struggle to stay abreast of even the most important meetings and proposals, and negotiating drafts often pass through their hands faster than they can read, process, or respond to them.[71]

Decision costs are also especially high for poorer nations because of the specific type of human capital that they draw upon during climate

treaty negotiations. "Developing country teams tend to be composed of scientists, especially meteorological specialists, who are less adept at negotiating with lawyers and economists, and diplomats or politicians."[72] Developing country governments also have fewer negotiators skilled in the ways of Western diplomacy and brinkmanship. "Even if the negotiator has a position," writes Gupta, "it is not enough. He or she needs techniques to influence the process of negotiation. These include influencing the agenda, the process, drafting text, circulating it informally among colleagues, submitting it formally to the Secretariat, responding to other's queries, negotiating the text and suggesting alternative formulations, checking the consensus view against the reserve position and, if not happy, bracketing the text or using the words 'can accept,' 'maybe' and/or 'too early to make a commitment'."[73] Chasek and Rajamani also make this point: "If the delegate is a technical expert, her usefulness in the negotiations could be limited. Unless she had prior multilateral negotiating experience, her interventions could be ignored simply because they are not couched in the proper lingo, even if what she is saying makes eminent sense. Technical experts may miss the political or procedural fine points of the debate or the larger international context within which a particular negotiation takes place."[74]

The importance of the number of attendees that developed and developing governments send to negotiations can also not be overstated. In principle, most decisions in international environmental negotiations require formal consensus—that is, "everyone has the power of veto"—but reality bears little resemblance to the ideal.[75] In practice, many different issues are often being negotiated in different meetings simultaneously, placing smaller delegations at a sharp disadvantage. Mike Moore, former director-general of the World Trade Organization (WTO), celebrates the fact that the WTO has "144 handbrakes and one accelerator, which can only be used by consensus,"[76] but deals are routinely struck in the absence of understaffed and overstretched LDC governments.[77]

Starting at the sixth Conference of the Parties to the UNFCCC and the Kyoto Protocol (COP-6) in 2001 in The Hague, the chairs insisted that negotiations be divided among groups, subgroups, and subsubgroups in order to cover the wide range of issues raised by climate change, such as national action plans, monitoring, emissions trading, compliance, tech-

nology transfer, and technical assistance.[78] Rather than "leveling the playing field," which many students of international negotiations see as a necessary precondition for achieving a mutually acceptable agreement, this decision strengthened the relative bargaining power of larger delegations.[79] Since the consensus rule, in practice, requires that dissatisfied parties actively voice their opposition, large delegations that have the ability to be many places at once wield tremendous agenda-setting power and are often able to push through policies that skew benefits strongly in their favor.[80] There are also social pressures—well known to students and teachers—that prevent uncertain participants from speaking up.

It is also not uncommon for developing country delegates to be "buried" with paper, brought to the point of extreme fatigue, and then presented with a *fait accompli* in the eleventh hour of negotiations and asked to accept or reject the proposal in an unrealistically short period of time. At the COP-6 Hague meeting, Ashton and Wang claim that "commitments were imposed by muscular chairmanship, or gaveled through without reaction from negotiators exhausted to the point of sleep."[81] These types of tactics often work to the advantage of rich nations, but they can also backfire. The North's "Green Room" meetings and take-it-or-leave-it proposal at the 2003 Cancun trade negotiations led to a walkout by G-77 delegates. Climate negotiations at COP-6 were equally unsuccessful, partly because the G-77 (a group of 132 developing nations) and China felt completely marginalized.[82] In cases where poor nations go along with railroaded agreements, the resentment created in securing victory in the battle can make winning the larger war impossible.

Because of their general lack of information and insufficient ability to process large quantities of legal and scientific information, Joyeeta Gupta argues that developing country negotiators tend to fall back on rhetorical statements, rather than making concrete problem-solving proposals.[83] Lynn Wagner has carefully studied the statements made by different coalitions—the Umbrella Group (Canada, Japan, Australia, New Zealand, Iceland, Norway, Russia and Ukraine), the Alliance of Small Island States (AOSIS), OPEC oil-producing countries, and the G-77—during the 1994, 1996, 1997, and 1998 sessions of the UN Commission on Sustainable Development (CSD). She found that the G-77 is less likely than any other negotiating bloc to make problem-solving statements.[84] In climate negotiations, G-77 countries instead have relied on three

broad arguments: that the West is most responsible for the problem; that binding commitments jeopardize their economic development; and that global climate change is inextricably linked to larger problems in the global economy.[85]

Defensive strategies may prevent the outcomes poor nations most immediately fear, but they also significantly weaken their ability to get what they want. Anil Agarwal, Sunita Narain, and Anju Sharma—three well-known Southern intellectuals from the Centre for Science and Environment in New Delhi, India—argue that "[t]he weakness of [the South] lies in the failure of its political leadership to articulate and develop a coherent vision of a greener and [equitable] world. While it is true that the U.S. and various other Northern nations have been resistant to Southern concerns, the Southern leadership, too, has had no agenda of its own."[86]

Knowledge is also instrumental in developing a strong bargaining position, and here again global inequality has significant effects. Gupta refers to a "structural imbalance of knowledge"[87] between rich and poor nations, and Miland Kandlikar and Ambuj Sagar offer strong support for this assertion by examining the cross-national distribution of authors in IPCC Working Groups (WG) I, II, and III in 1990 and 1995.[88] They report that out of 512 WGI authors in 1995, 212 were from the United States, 61 were from the United Kingdom, and only 12 authors came from India and China combined.[89] The impact of this imbalance is both underresearched and underappreciated. Policy makers rely heavily on climate scientists for both the "facts" and their understanding of the policy implications.[90]

Finally, global inequality affects the ability of developing countries to provide reliable data and comply with negotiated agreements. The UNFCCC and Kyoto treaties both rely heavily on "national reporting" to ensure compliance, but poor nations have far fewer scientists and engineers per capita,[91] less NGO support, less private sector involvement, and the "[m]onitoring and data collection infrastructure of most developing countries is severely handicapped or non-existent."[92] Therefore, many LDC governments must hire outside consultants, scientists, and legal experts to help them put together their national communications, national climate change programs and national adaptation programs of action (NAPAs), greenhouse gas inventories, and vulnerability and adaptation assessments.[93] While noncompliance is often character-

ized as deliberate defection, the reality is that, in relative terms, it is much more expensive for developing countries to fulfill their obligations since foreign environmental technologies can only be bought and foreign experts can only be paid for with hard cash.[94]

Still, the most potent determinants of the North-South climate policy impasse are probably not transmitted through the direct route of global inequality: the shortage of technical, financial, and administrative capacity in poorer nations. The current stalemate in climate negotiations, we argue, has less to do with the seen than the unseen. Financial resources, technical expertise, and negotiating prowess matter, but the indirect impact of global inequality on conditions of generalized mistrust and diffuse reciprocity, structuralist worldviews and causal beliefs, risk aversion, perceived unfairness, and zero-sum and negative-sum behavior is probably even greater on the frequency, form, substance, depth, and timing of cooperation.

Charting a New Course: A Roadmap and Some Caveats

The goal of this introductory chapter is to tie global inequality to the stalemate in North-South climate negotiations through its direct impact on the ability of absurdly outgunned poor nations to negotiate effectively. Chapter 2 outlines a series of explanations about how global inequality more indirectly retards international cooperation. It describes a series of steps from actual and perceived inequality and its roots, through the disparate worldviews and causal beliefs of nations, to feelings of generalized mistrust between the two sides. This mistrust leads to divergent expectations and dysfunctional negotiations as poorer nations become risk averse, resist bearing such a large share of mitigation costs, and contemplate "getting even" with Northern nations for earlier injustices. These negative strategies prevent negotiators from reaching a shared social understanding of fairness from which to build the ambitious cooperative agreement needed to address climate change effectively.

Readers who are not interested in the theoretical intricacies of international relations may wish to move directly to chapters 3 and 4, where they can find concrete information on climate-related disasters and their causes. There we develop three cross-national indicators of suffering

from such disasters over the twenty-three years from 1980 to 2002. The indicators rank nations by the cumulative number of people killed, made homeless, or otherwise affected by more than 4,000 hydrometeorological disasters: floods, windstorms, droughts, and heat waves. We then closely examine three major climate disasters: Hurricane Mitch in Honduras; a trio of hurricanes that hit Mozambique in early 2000; and rising sea levels, which are threatening Tuvalu and other low-lying Pacific islands. We use these case studies to explore how disasters unfold and what happened before the disasters that caused these nations to be so vulnerable. These cases have helped us to identify factors we might prioritize in cross-national testing and a theoretical approach that might explain more than the proximate causes of vulnerability.

Chapter 4 discusses a number of important insights from the extant literature on vulnerability, risk, and disaster and tests five causal factors that might explain national patterns of suffering: geographical vulnerability (populations near coastlines and urbanization rates), social vulnerability (high inequality and weak civil societies), institutional vulnerability (limited press freedom and restricted property rights), economic vulnerability (low per capita national income), and environmental vulnerability (a broad indicator of ecological damage). We then test the value of these different explanations of who is suffering worst from climate-related disasters. Using multivariate ordinary least-squares (OLS) regression and path analysis, we test their ability to predict the national patterns in death, homelessness, and the number of people affected by climate disasters that we observed in chapter 3.

Our last step in this effort is to go beyond proximate causes to test the deeper social and historical determinants of national vulnerability to climate disasters. Structuralist theories suggest that lying beneath the proximate factors is a nation's position in the global hierarchy of wealth and power. Our proxy for a nation's colonial legacy of extraction and its position in the world system is the narrowness of its export base—how dependent it is upon the ups and downs in prices and production of a few products it sells on the world market. Our findings suggest that a narrow export base is associated with lower national income, higher inequality, less secure property rights, fewer press freedoms, weaker civil society, lower levels of urbanization, and higher levels of environmental degradation. Path analysis helps us establish that this factor is indeed

strongly predictive of national patterns of suffering from climate disasters. That is, in spite of the substantial randomness of hurricanes, drought, and other extreme weather events, a narrow economy predicts from one-eighth to nearly half of how many people have died, been made homeless, or otherwise affected by climate-related disasters over the past two decades.

In chapter 5, we examine who is causing the problem of climate change and how responsibility can be fairly measured and addressed. We investigate the four main ways that have been proposed for measuring responsibility for climate change and who is seen as most responsible. Each represents different positions on what is "just" held by different nations and different interest groups within nations. The stakes can be seen in the conflict between the approach taken in the Kyoto treaty, which took the politically expedient approach of granting rights to pollute based on 1990 levels of emissions, and the per capita approach proposed by poor nations, in which each person on Earth is given an equal share of emissions. Again, using the tools of multiple regression, we take a look at the factors driving global variation in responsibility for production of carbon dioxide (as differently conceived): national wealth, population, geography, industrial structure, urbanization, trade openness, civil society strength, and democracy. What we find is striking; there is strong evidence that the historical legacy of a country's incorporation into the global economy has a critical impact on its available avenues of development and its carbon future. We also find strong support for theories of ecologically unequal exchange. The so-called ecological debt perspective espoused by many developing country policy makers—that emissions are skyrocketing with growing trade and industrialization in poorer nations because wealthy nations are "offshoring" the production of their resource-intensive products—can therefore not be dismissed as an erroneous mental model.

This leads us to the questions of who is participating in environmental treaties and efforts to address climate change, so chapter 6 examines which countries are joining global efforts to address the problem. We describe patterns in which countries sign and ratify the Kyoto Protocol. And since the terms of LDC participation have not been completely negotiated, we also develop an index of twenty-two international environmental agreements and attempt to explain the generalizable patterns

of participation among 192 countries. Though critics rightly point out the lack of enforcement in the Kyoto Protocol, we argue that the act of ratification represents costly signal and is an important measure of a state's willingness and ability to implement specific policy commitments. As Charles Lipson once put it, treaty ratifications "are a conventional way of raising the credibility of promises by staking national reputation on adherence."[95] While new institutionalism and other rationalist approaches have done an admirable job of identifying the domestic sources of credibility, we argue that they are theoretically crippled without an explanation of how states acquire that credibility in the first place. Hence, we develop a theoretically sequenced model that exploits complementarities between rational choice institutionalism and structuralism. We recognize that credibility—or the willingness and ability to honor one's international environmental commitments—matters, but we also argue that state credibility is strongly influenced by a legacy of colonial incorporation into the world economy.[96] Our results indicate that dependence on one or a few exported products directly and indirectly explains nearly 60 percent of the treaty ratification rates overall and one-third of the variation in Kyoto ratification. These structural constraints on countries' willingness and ability to cooperate suggest that the spread of institutions and values may not necessarily create a world with more adherents to environmental treaties.

A new measure of vulnerability to hydrometerological disasters (developed in chapter 4) also allows us to subject to empirical scrutiny the claim that poor countries—unjustly suffering the effects of a problem to which they contributed virtually nothing—craft negotiating tactics and environmental policies on the basis of their principled beliefs. Also, with a new systematic tally of environmental assistance from wealthy nations to the South over the period 1970 to 2002, which we have compiled for 80 bilateral and multilateral donors and 190 recipient nations, we are able to evaluate the alleged empirical significance of "compensatory justice," a principle embedded in many international environmental regimes.

A key feature of this book is our attempt to synthesize theories whenever possible, examining both the proximate political causes and the deeper social and historical determinants of vulnerability to hydrometeorological disasters, responsibility for carbon dioxide emissions, and

participation in environmental treaties. We do so because much of the existing literature has relied on single cases and small-*n* datasets and have failed to test competing theories side by side. The case study literature is crucial, but we can only know if the cases examined are bizarre coincidences or bellwethers if we understand the broad patterns.

Our findings suggest that any effective post-Kyoto climate treaty will have to address credibility, compensatory justice, the strategic leverage of major global environmental actors, and national development profiles, which bear heavily on nations' willingness and ability to ratify these treaties. By way of conclusion, we return to the core questions that drove our interest in this analysis: Does North-South inequality hinder cooperation on climate change? As a December 20, 2004 newspaper article called "Is Kyoto Kaput?" suggested, the Kyoto Protocol is ultimately more symbolic than it is substantive.[97] The truth is that we are far from a consensus on the post-2012 climate regime, and a gaping chasm still divides North and South on crucial questions: Who should have to reduce emissions? How much? When? Who should pay for adaptation to the impacts of climate change and how much should they pay?

In the remainder of this book we argue that even the best-designed institutions—treaties with funding for poor nations, staggered deadlines for reductions in greenhouse gas emissions, differing ways of counting emissions, etc.—will not resolve the underlying causes of the North-South stalemate on climate policy. Climate change is fundamentally an issue of inequality and its resolution will most likely require unconventional, perhaps even heterodox, policy interventions. Climate negotiations, we must remember, take place in the context of an ongoing development crisis and what the global South perceives as a pattern of Northern callousness and opportunism in matters of international political economy. They take place at a time when levels of generalized trust are declining. And they take place at a time when the concerns of poor nations regarding fair processes and fair outcomes have frequently been marginalized.

Negotiators must therefore redouble their efforts to address conditions of generalized mistrust, structuralist causal beliefs and worldviews, risk aversion, and the perceived need to retaliate. They can do this by promoting policies that explicitly signal concern for the structural obstacles facing developing countries. Such policies include transferring

meaningful sums of environmental assistance to developing countries; funding "brown" aid and adaptation aid as well as green aid; providing greater "policy space" and "environmental space" to late developers; abandoning international economic regimes, like TRIPs, that threaten the long-term interests of developing countries; helping nations diversify their exports and create strong, resilient economies with internally articulated markets; creating a commodity support fund to insulate countries that rely on natural resources from exogenous shocks; giving developing countries a greater stake in the governance structures of international financial institutions; and reducing Western agricultural subsidies and tariff escalation policies. Committing to the so-called Hippocratic principle and promoting predictability and generalized norms in trade, debt, aid, and investment issues may also pay handsome dividends in eliciting LDC cooperation.[98]

However, all the best climate policy interventions may be undermined by the structural shift of manufacturing and extraction of resources going on in the globalizing world economy. The globalization of economic production and trade is causing many industrializing nations to become heavily reliant upon earnings from carbon-intensive export products, including oil and mineral extraction, petroleum-based input-intensive agriculture, and manufactures whose components require energy-intensive transport and processing. This important structural point is often lost in discussions of climate policy and attempts to include developing nations in the crafting of a post-2012 climate regime.[99] Many of our best climate policy tools—including emissions trading, public-private partnerships, and technology transfer to increase the efficiency of power plants and factories—may have only marginal effects on this looming structural shift. This point is profoundly political and in avoiding it, the policy recommendations of the *Special Report on Emissions Scenarios* (SRES) and other IPCC reports have remained fatefully unhelpful to policy makers. We suggest that aiding nations in making the difficult transition to more equitable and economically sustainable and lower-carbon pathways of development may be the only way to resolve the issue of climate change. But this transition needs to be built on generalized reciprocity, a climate of trust, shared principles of justice, and a common worldview of environment and development.