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**STATES, SCARCITY,
AND
CIVIL STRIFE
IN THE
DEVELOPING WORLD**

Plight, Plunder, and Political Ecology

CIVIL STRIFE in the developing world represents perhaps the greatest international security challenge of the early twenty-first century.¹ Three-quarters of all wars since 1945 have been within countries rather than between them, and the vast majority of these conflicts have occurred in the world's poorest nations.² Wars and other violent conflicts have killed some 40 million people since 1945, and as many people may have died as a result of civil strife since 1980 as were killed in the First World War.³ Although the number of internal wars peaked in the early 1990s and has been declining slowly ever since, they remain a scourge on humanity. Armed conflicts have crippled the prospect for a better life in many developing countries, especially in sub-Saharan Africa and parts of Asia, by destroying essential infrastructure, decimating social trust, encouraging human and capital flight, exacerbating food shortages, spreading disease, and diverting precious financial resources toward military spending.⁴

Compounding matters further, the damaging effects of civil strife rarely remain confined within the afflicted countries. In the past decade alone tens of millions of refugees have spilled across borders, producing significant socioeconomic and health problems in neighboring areas. Instability has also rippled outward as a consequence of cross-border incursions by rebel groups, trafficking in arms and persons, disruptions in trade, and damage done to the reputation of entire regions in the eyes of investors. Globally, war-torn countries have become havens and recruiting grounds for international terrorist networks, organized crime, and drug traffickers.⁵ Indeed, the events of September 11, 2001, illustrate how small the world has become and how vulnerable even superpowers are to rising grievances and instabilities in the developing world.

Although there is no single cause of civil strife, a growing number of scholars and practitioners suggest that rapid population growth, environmental degradation, and competition over natural resources play important causal roles in many of these conflicts. Several high-profile theoretical works and case studies suggest that demographic and environmental pressures can, under certain conditions, contribute to civil strife.⁶ Moreover, an emergent body of cross-national research

supports this conclusion. Recent quantitative studies analyzing the correlates of internal wars from the 1950s to the present indicate that population size and population density are significant risk factors.⁷ Another important study points out that countries at earlier stages of the demographic transition (when birth rates and death rates are both high), as well as those with large numbers of young adults and rapid rates of urbanization, have been much more prone to civil strife over the past three decades.⁸ In terms of environmental factors, recent statistical work indicates that countries highly dependent on natural resources,⁹ as well as those experiencing high rates of deforestation and soil degradation, and low per capita availability of arable land and freshwater, have higher-than-average risks of falling into turmoil.¹⁰ In short, many researchers now conclude that it is impossible to fully understand the patterns and dynamics of contemporary civil strife without considering the demographic and environmental dimensions of these conflicts.

Outside the ivory tower, numerous policy makers and commentators have reached similar conclusions. In 1991, for example, the then NATO secretary general Manfred Wörner argued that “the immense conflict potential building up in the Third World, characterized by growing wealth differentials, an exploding demography, climate shifts and the prospect for environmental disaster, combined with the resource conflicts of the future, cannot be left out of our security calculations.”¹¹ Three years later, in an infamous *Atlantic Monthly* article entitled “The Coming Anarchy,” the influential journalist Robert Kaplan went so far as to suggest that the environment was “the national security issue of the early twenty-first century. The political and strategic impact of surging population, spreading disease, deforestation and soil erosion, water depletion, air pollution, and, possibly, rising sea levels in critical, overcrowded regions . . . will be the core foreign policy challenge from which most others will ultimately emanate.”¹² Echoing these sentiments, Nafis Sadik, the former executive director of the United Nations Population Fund, wrote in 1998:

Many features of today’s or very recent conflicts—whether in the Balkans, Afghanistan, the Caucasus, Rwanda, Somalia, Zaire, or elsewhere—are all-too-familiar . . . namely ethnic, religious, and economic. However, there are other features and signs which are much less familiar . . . Most alarming among these is the rapid growth of the world’s human population and the implications this may have for global stability and security. . . .

Social and environmental change . . . is taking place on a scale that has never been witnessed before . . . To cope with these changes, governments

need resources and capabilities which, in all too many cases, fall seriously short of what are available . . . If support for the most disadvantaged developing countries (and there are many in or near that position) is not forthcoming in the years ahead, it seems likely that instability and disorder will be experienced on a much larger scale than they have even today.¹³

This view has gained traction in Washington as well. Throughout much of the 1990s the National Security Strategy (NSS) of the United States referred to demographic and environmental pressures as threats to both the stability of developing countries and, ultimately, America's national interests. In the 1996 NSS, for example, the Clinton administration stated:

America's security imperatives . . . have fundamentally changed. The central security challenge of the past half century—the threat of communist expansion—is gone. The dangers we face today are more diverse. . . . [L]arge-scale environmental degradation, exacerbated by rapid population growth, threatens to undermine political stability in many countries and regions.¹⁴

In 2000 the U.S. National Intelligence Council's *Global Trends 2015* report included an analysis of demographic and environmental trends as part of its discussion of the possible causes of internal conflict. Commenting on the report, the *New York Times* suggested that it was indicative of a growing awareness in Washington that "issues like the availability of water and food, changes in population and the spread of information and disease will increasingly affect the security of the United States."¹⁵

In many ways, of course, all this changed after 9/11. Indeed, the Bush administration's 2002 NSS is illustrative of the fact that the security focus of the U.S. government has shifted almost entirely to the twin menaces posed by terrorism and weapons of mass destruction.¹⁶ Yet even in the Bush administration, demographic and environmental challenges have not completely fallen off the radar screen. In a July 2002 speech, for example, Secretary of State Colin Powell declared:

Sustainable development is a compelling moral and humanitarian issue. But sustainable development is also a security imperative. Poverty, destruction of the environment and despair are destroyers of people, of societies, of nations, a cause of instability as an unholy trinity that can destabilize countries and destabilize entire regions.¹⁷

More recently an October 2003 report commissioned by the Pentagon's Office of Net Assessment to study the security implications of future climate change concluded:

There is substantial evidence that significant global warming will occur during the 21st century . . . [and] the result could be a significant drop in the human carrying capacity of the Earth's environment. . . .

As global and local carrying capacities are reduced, tensions could mount around the world. . . .

. . . Because of the potentially dire consequences, the risk of abrupt climate change . . . should be elevated beyond a scientific debate to a U.S. national security concern.¹⁸

Do population and environmental pressures actually put countries at higher risk of experiencing civil strife? Although current research suggests a possible correlation, and many scholars and policy makers assert a causal relationship, the causal mechanisms linking demographic and environmental pressures to civil strife are still poorly understood. Existing studies on the subject point to a number of important dynamics, but several crucial causal pathways and interactions with social and political variables are ignored. This book seeks to fill the explanatory gap and thereby enhance our understanding of the population–environment–civil strife connection. Toward this end it examines both the degree to which demographic and environmental pressures can be said to cause civil strife in developing countries, and the underlying dynamics and processes involved in this relationship. Moreover, in a significant departure from much of the existing literature, the book takes a careful look at the social and political factors that exacerbate, or mitigate, the potential for violent conflict.

The goal of this chapter is to lay the foundation for the theoretical and empirical core of the book by taking stock of the current state of our knowledge. The following sections outline arguments advanced by three distinct schools of thought—neo-Malthusianism, neoclassical economics, and political ecology—and point to their limitations.

The Neo-Malthusian Perspective

Neo-Malthusians work broadly within the intellectual tradition of the Reverend Thomas Malthus, whose famous 1798 treatise, *An Essay on the Principles of Population*, argued that exponential population growth would eventually outpace the ability of the planet to provide for human needs.¹⁹ In the contemporary period neo-Malthusians argue that enormous demographic and economic changes have combined to place severe pressures on both the natural environment and the world's poor, lowering the quality of life for millions and threatening the political stability of many developing countries.

Pressures on the Planet, Pressures on the Poor

The past century witnessed unprecedented population growth, economic development, and environmental stress, changes that continue to this day. From 1900 to 2000 world population grew from 1.6 billion to 6.1 billion. Since 1950 alone 3.5 billion people have been added to the planet, with 85 percent of this increase occurring in developing and transition countries.²⁰ Worldwide population growth rates peaked in the late 1960s at around 2 percent a year, but the current rate of 1.2 percent still represents a net addition of 77 million people per year. The differential population growth rates of rich and poor countries have also become more pronounced. The current annual rate in high-income countries is 0.25 percent compared to 1.46 percent for developing countries as a whole. Moreover, within the subset of the forty-nine *least* developed countries the annual rate is currently 2.4 percent.²¹

The global economy has also experienced tremendous growth over the past century. Estimates vary, but the global economy most likely increased twenty to forty times its 1900 level by 2000. The tempo of change has been especially pronounced since the end of the Second World War; between 1950 and 2002 the global economy grew from 6.7 trillion to 48 trillion.²² This incredible economic expansion occurred during a time of accelerating globalization and, especially since the 1980s, rising faith in the power of markets and privatization. Economic growth, globalization, and the harnessing of market forces have allowed for average living standards to advance faster than world population growth, improving the quality of life for billions. Nevertheless, the benefits of economic growth and globalization have been unevenly distributed within and across countries and regions.²³

In the 1990s, for example, average economic growth per capita was less than 3 percent (the threshold needed to double incomes in a generation given constant rates of inequality) in 125 developing and transition economies, and 54 of these countries were actually poorer in 2000 than in 1990.²⁴ More than 1.2 billion people currently live in extreme poverty, defined as an income of less than \$1 a day, and a total of 2.8 billion (more than half the population of the developing world) live on less than \$2 a day. Although the proportion of people suffering from extreme poverty fell from 30 percent to 23 percent during the 1990s, the absolute number only fell by 123 million because of a 15 percent increase in the population of low- and middle-income countries. Driving most of this progress was China; excluding China, the total number of extremely poor people worldwide *increased* by 28 million, and thirty-seven of sixty-seven countries with data saw poverty rates increase in the 1990s. Worst off was sub-Saharan Africa, where per capita income

fell by 5 percent and 74 million additional people descended into extreme poverty (producing a regional total of 404 million living on less than \$1 a day in 1999). Other key indexes of human welfare also reveal a similar pattern: overall progress but also numerous countries falling further behind. Over the past decade thirty-four countries had lower life expectancy, twenty-one had a larger portion of people hungry, and fourteen had more children dying before age five.²⁵

This pattern is further reflected in widening gaps between rich and poor. In 1960 the ratio between the GDP per capita in the twenty richest and twenty poorest countries was 18 to 1; in 1995 the ratio was 37 to 1.²⁶ Between 1980 and the late 1990s inequality also increased *within* 33 of 66 countries for which adequate data are available. All told, the richest 5 percent of the world's people now receive 114 times the income of the poorest 5 percent, and the richest 1 percent receive as much as the poorest 57 percent. Non-income measures tell a similar story. A decade ago children under five were nineteen times more likely to die in sub-Saharan Africa than in rich countries, but they are now twenty-six times more likely. Indeed, Latin America and the Caribbean were the only parts of the developing world where disparities in infant mortality compared to rich countries did not widen in the 1990s.²⁷

Rapid demographic and economic change over the past century have placed severe and accelerating pressures on natural resources and planetary life-support systems. The traditional Malthusian notion that exponential population growth alone drives strains on the environment has long been refuted; no serious thinkers, including neo-Malthusians, now maintain that human-induced environmental changes are a mere function of numbers. Rather, neo-Malthusians argue that the relationship between population growth and the environment is mediated by consumption habits, and by the technologies used to extract natural resources and provide goods and services.

Neo-Malthusians contend that resource depletion and environmental degradation result from the interaction between population growth, extreme wealth, and extreme poverty. The material intensive and pollution-laden consumption habits and production activities of high-income countries are responsible for most of the world's greenhouse gases, solid and hazardous waste, and other environmental pollution. High-income countries also generate a disproportionate amount of the global demand for both nonrenewable resources (e.g., fossil fuels and non-fuel minerals) and certain products from renewable resources (e.g., grain, meat, fish, tropical hardwoods, and products from endangered species).²⁸

Although consumption and production activities by rich countries may be the primary drivers of global environmental challenges, poverty and inequality within developing countries with fast-growing

populations have placed significant burdens on local environments, especially on arable land, freshwater, forests, and fisheries. Impoverished individuals in developing countries frequently live in the most fragile ecological areas and are often driven to overexploit croplands, pastures, water resources, forests, and fisheries in order to eke out a living. Many have been forced to migrate to marginal areas because of overcrowding on better land. In the past fifty years the number of people living on fragile lands in developing countries doubled to 1.3 billion,²⁹ and rural population growth remains higher than average in countries with 30 percent or more of their population on fragile land. Fragile ecological areas, which represent 73 percent of the Earth's land surface, have very limited ability to sustain high population densities and are particularly vulnerable to degradation, erosion, flooding, fires, landslides, and climatic change.³⁰

Numerous signs suggest that the combined effects of unsustainable consumption, population growth, and extreme poverty are taking their toll on the environment. More natural resources have been consumed since the end of the Second World War than in all human history to that point.³¹ The consumption of nonrenewable resources has significantly increased, although it has risen at a slower rate than population and economic growth as a result of changes in technology. The global consumption of fossil fuels (which account for 77 percent of all energy use) in 2003 was 4.7 times the level it was in 1950.³² High-income countries consume more than half of all commercial energy, and per capita energy consumption is five times greater than in developing countries.³³ In terms of non-fuel minerals, 9.6 billion tons of marketable minerals (e.g., copper, diamonds, gold) were extracted in 1999, almost twice as much as in 1970. And, once again, high-income countries account for the majority of mineral demand.³⁴

In terms of renewable resources, the World Wildlife Fund (WWF) has recently calculated humanity's "ecological footprint" by comparing renewable resource consumption to an estimate of nature's biological productive capacity. A country's ecological footprint represents the total area—measured in standardized global hectares (ha) of biologically productive land and water—required to produce the renewable resources consumed and to assimilate the wastes generated by human activities. In 1999 each person on the planet demanded an average of 2.3 global ha, but countries varied widely in their footprint. On average, high-income countries demanded 6.5 biologically productive ha per person compared to 2 ha for middle-income countries and 0.8 ha for low-income countries. All told, the global footprint in 1999 amounted to 13.7 billion biologically productive ha, exceeding the 11.4

billion ha estimated to exist by about 20 percent. While the ecological footprint approach is only a partial measure of the impact humanity is placing on nature, it does suggest an unsustainable rate of consumption of renewable resources over the long run. Indeed, the WWF calculates that humanity has been running an ecological deficit with the Earth since the 1980s.³⁵

This conclusion is reinforced by signs of growing depletion and degradation of renewable resources. Worldwide, 23 percent of all cropland, pasture, forest, and woodland (totaling 2 billion ha) have been affected by soil degradation since the 1950s, impacting the livelihoods of perhaps 1 billion people. Of these lands, about 16 percent are so severely degraded that the change is too costly to reduce, 46 percent are moderately degraded, and 39 percent are lightly degraded.³⁶ Deforestation has also been rapid over the past century. There were 5 billion ha of forested area worldwide at the beginning of the twentieth century; now there are less than 4 billion ha. One-fifth of all tropical forests have been cleared since 1960, with the bulk of this deforestation occurring in developing countries. In the 1990s alone low-income countries lost 8 percent of their forested area as a result of global and local demand for timber, the conversion of forests into large-scale ranching and plantations, and the expansion of subsistence agriculture.³⁷

Land resources are not the only resources under siege. Freshwater, which is critical for both human survival and economic development, is becoming increasingly scarce in many areas. Over the past quarter century global per capita water supplies have declined by one-third, and 1.7 billion people in developing regions are currently experiencing water stress (defined as countries that consume more than 20 percent of their renewable water supply each year). If current trends persist, as many as 5 billion people could face such conditions by 2025.³⁸ The world's fisheries are also being stressed. Around 70 percent of commercial fisheries are either fully exploited or overexploited and experiencing declining yields, and about 34 percent of all fish species are at risk from human activities. This is not only troubling from a biodiversity perspective; millions of individuals depend on fisheries for employment and 1 billion people worldwide rely on fish as their primary protein source.³⁹

The Deprivation Hypothesis

For more than a decade neo-Malthusians have argued that these demographic and environmental pressures can, under certain conditions,

lead to violent conflict between and within countries. Four major hypotheses have been advanced linking demographic and environmental change to political instability and violent conflict: *simple scarcity*, *transboundary migration*, *deprivation*, and *state failure*.⁴⁰ The simple scarcity⁴¹ and transboundary migration⁴² hypotheses link population growth, environmental degradation, and scarcity to military competition and violent conflict *between* countries. However, there are both empirical and theoretical reasons to doubt that these factors are significant causes of international wars.⁴³ Consequently, the discussion here focuses on the neo-Malthusian arguments linking demographic and environmental factors to violent conflict *within* countries.

According to the deprivation hypothesis, population growth, environmental degradation, and maldistributions of natural resources often conspire to produce absolute and relative deprivation among the poor in developing countries, thereby increasing the risks of political turmoil.⁴⁴ In many of the world's least-developed countries, rapid population growth contributes to downward pressure on wages, un- and underemployment, and rising levels of landlessness, all of which exacerbate poverty and income inequality. Rapid population growth, environmental degradation, and unequal resource distributions can also produce acute scarcities of natural resources. Of particular concern for contemporary neo-Malthusians are renewable resources that can become scarce if they are consumed or degraded at unsustainable rates or distributed in ways that deny access to subsets of the population.⁴⁵ Because large numbers of individuals in developing countries continue to reside in rural areas where they are directly dependent on renewable resources for their livelihood, emerging scarcity can create substantial hardships.

As deprived individuals and social groups engage in increasingly fierce competition for dwindling natural and economic resources, the deprivation hypothesis suggests that intergroup violence becomes more likely. Deprivation also increases the risk of rebellion against the state by encouraging individuals to support insurgents and other challenger groups seeking to overthrow the status quo.⁴⁶ Norman Myers, for example, has argued that individuals impoverished by population growth and environmental degradation "become desperate people, all too ready to challenge governments through . . . guerrilla groups." And Jessica Tuchman Mathews has posited that the demographic and environmental impact on a country's security is generally "felt in the downward pull on economic performance and, therefore, political stability. . . . [E]conomic decline leads to frustration, resentment, domestic unrest or even civil war."⁴⁷

The State Failure Hypothesis

Proponents of the state failure hypothesis, most notably Jack Goldstone and Thomas Homer-Dixon, agree that population and environmental pressures in developing countries often generate intense hardship among agricultural laborers and the urban poor. They contend, however, that strong and capable states are typically able to prevent such deprivation from coalescing into organized violence through a mix of relief for aggrieved individuals, co-optation of opposition leaders, and outright coercion. Therefore, large-scale violence is only likely to occur when social grievances emanating from rapid population growth, environmental degradation, and natural resource scarcity *combine* with eroding state authority and escalating intra-elite competition.⁴⁸

Severe demographic and environmental stress can threaten the capacity, legitimacy, and cohesion of the state in developing countries by simultaneously increasing demands for government expenditures, exacerbating intra-elite competition, and decreasing government revenues. Rapid population growth, environmental degradation, and natural resource scarcity typically generate demands from suffering individuals and social groups for costly investments in rural and urban infrastructure, public sector employment, expansion of social services, farm and industrial subsidies, and development projects. Demographic and environmental pressures also produce both winners and losers among the elite, sparking intra-elite conflicts—either between state and social elites or among elites within the ruling party and military—that pose their own challenges to the state. Some segments of the elite may benefit from their ability to capture windfall profits arising from scarcity-induced increases in resource value, for example, whereas those unable to capture these resource rents, as well as those left to compete for shrinking government largesse and public-sector jobs, may suffer. As rifts among elites inside and outside the government grow, these can jeopardize state cohesion and legitimacy, and produce a growing pool of political entrepreneurs willing to mobilize social groups to challenge the regime.⁴⁹

Finally, at the very moment that demands on the state are increasing and elite feuds are escalating, the state's ability to address these problems may decline. Studies suggest that demographic and environmental pressures can reduce revenue flows to the state, especially in countries with imperfect markets and slow-growing or highly skewed economies. Rapid population growth can lower per capita economic productivity, contribute to higher dependency ratios, and cut into domestic savings rates, and environmental degradation and emerging re-

source scarcities can erode the natural resource base that the economies of many poor countries ultimately depend on.⁵⁰ Under these conditions states may find themselves in an impossible situation, since they cannot raise revenue through taxation without worsening grievances among struggling individuals or alienating regime supporters. The remaining alternatives are to increase government debt, print money (causing inflation), rely more heavily on corruption to maintain loyalty among regime allies, or some combination of all these options, further weakening state capacity and legitimacy.⁵¹

In sum, according to the state failure hypothesis, demographic and environmental pressures place strains on states in developing countries. As the state weakens, its ability to manage social conflict becomes more limited at the precise time that mass grievances and elite conflicts are on the rise, elevating the risk of violent turmoil.

Criticisms

Neo-Malthusian accounts of civil strife are vulnerable to several criticisms. Many neoclassical economists, for example, challenge the posited linkages between population growth, environmental degradation, resource scarcity, and economic decline (and therefore deprivation and state failure). Recently this work has been supplemented by studies which suggest that resource abundance, rather than scarcity, is more likely to produce underdevelopment, political instability, and violence. These arguments are discussed at length in the next section.

It can also be argued that neo-Malthusian hypotheses suffer from an excess of demographic and environmental determinism. Some neo-Malthusians advance models that describe automatic and simplistic causal linkages between population and environmental pressures, on the one hand, and civil strife, on the other. This type of determinism exaggerates the causal importance of demographic and environmental factors, and ignores or downplays crucial intervening factors and processes.

The charge of determinism clearly applies to the deprivation hypothesis, which significantly overpredicts incidents of civil strife. After all, if poverty and a sense of injustice were sufficient to lead people to rebel against their governments or fight one another, the world's poor would constantly be engaged in organized violence. This, of course, is not the case. The deprivation hypothesis fails to acknowledge that individuals contemplating organized violence face significant collective action problems. At the individual level, the risks to one's life and property inherent in antistate or intergroup violence generate high potential costs, and the choice to forgo wages and peaceful exchange with

others creates large opportunity costs. On the benefit side of the equation, each individual's contribution, in and of itself, has very little impact on the prospects for success, and the benefits to be accrued from joining a violent social movement are frequently "public," or collective, in nature (i.e., they are non-rival and non-excludable). This can create powerful incentives for individuals to "free-ride" on the efforts of others, which, in the aggregate, works against the formation of organized conflict groups.⁵² Given these challenges to collective action, it is essential to understand how certain intervening variables, especially patterns of social organization, affect the ability of aggrieved individuals to overcome these problems and mobilize.

Moreover, although the deprivation hypothesis seeks to explain a political outcome, it is curiously apolitical. In particular, it fails to recognize that the prospects for violence are substantially shaped and shoved by the strength of the state and the ability of political institutions to offer peaceful avenues for addressing grievances.⁵³

The state failure hypothesis seeks to correct some of these shortcomings by "bringing the state back in," and, in doing so, it points to a number of fundamental causal dynamics. Indeed, the arguments advanced by Goldstone and Homer-Dixon provide the building blocks upon which much of the theoretical account provided in chapter 2 is built. Yet, as currently articulated, the state failure hypothesis is incomplete in two important respects. First, despite its state-centric focus, the causal role of the state remains under-theorized. Existing accounts largely envision state weakness as a "permissive" factor contributing to conflict; that is, given mounting social grievances and disputes among elites, state weakness provides structural opportunities that permit these conflicts to escalate to violence. This is true, but it is not the whole story. As I describe in chapter 2, state failure also brings about an internal security dilemma that produces powerful incentives—not simply opportunities—for antistate and intergroup violence. Furthermore, the current state failure hypothesis focuses largely on "bottom-up" dynamics, in the sense that state weakness opens political space for social groups to direct violence upward toward the state or sideways toward one another. But as the discussion of state exploitation dynamics in chapter 2 demonstrates, civil strife can also emerge through a "top-down" process whereby state elites themselves engineer and direct violence downward toward social groups.

Second, while proponents of the state failure hypothesis recognize that a number of intervening variables mediate the relationship between population growth, environmental stress, and civil strife, more work needs to be done to systematically incorporate these intervening

variables into an explanation for violence. Goldstone, for example, notes that “neither environmental degradation nor population growth *by themselves* act as motors of regional political crises.”⁵⁴ Similarly Günther Baechler contends that “passing the threshold of violence definitely depends on *sociopolitical* factors and not on the degree of environmental degradation as such.”⁵⁵ And Homer-Dixon argues that,

environmental scarcity produces its effects within extremely complex ecological-political systems. . . . [W]hen it does contribute to violence . . . it always interacts with other political, economic, and social factors. Environmental scarcity’s causal role can never be separated from these contextual factors, which are often unique to the society in question.⁵⁶

Unfortunately, most of the scholars who have acknowledged the importance of intervening variables have tended to overcorrect for the determinism of the deprivation hypothesis by constructing “kitchen sink” accounts that remain too underspecified or indeterminate. The laundry list of important intervening variables identified by the literature includes, among other factors, cultural conceptions of the environment and social justice; the level of social ingenuity; the degree and type of social cleavages; the nature of civil society and the quality of trust, norms, and networks between social groups; the nature of political institutions; system legitimacy; the autonomy of the state; and the leadership skills, ideology, and organizational resources of challenger groups and governing elites.⁵⁷ Of these, the presence of corrupt and authoritarian political institutions and deep social cleavages appear to matter most, but additional clarification is needed to identify precisely how these intervening variables interact with demographic and environmental pressures to produce violent conflict.⁵⁸ This challenge is taken up in chapter 2.

The Challenge from Neoclassical Economics

The neo-Malthusian view has long been criticized by scholars working within the tradition of neoclassical economics. The neoclassical rebuttal to neo-Malthusianism starts by challenging the notion that population growth and environmental degradation inevitably lead to resource scarcity and economic decline, calling into question the causal connection to civil strife. More recently a small but influential cadre of scholars has also advanced a set of claims that inverts the causal relationship between scarcity and violent conflict; resource abundance, rather than scarcity, is argued to be the source of political instability and armed struggle.⁵⁹

Adaptation and the Positive Effects of Population Growth

Neoclassical economics believe that neo-Malthusians are overly pessimistic about the negative consequences of rapid population growth and environmental degradation. Neoclassical economists argue that markets, governments, and other social institutions usually adjust to population and environmental pressures, heading off significant resource scarcities before they emerge or lead to violent conflict.⁶⁰ Summarizing this position, Bjørn Lomborg argues:

There is often a general tendency throughout this discussion [of scarcity-induced] conflict to *presume* that environmental scarcity indeed sets in more and more often. . . .

As should be abundantly clear [from the evidence], we are far from exhausting our raw material resources. . . . We continuously find new resources, use them more efficiently, recycle them, and substitute them. . . .

Consequently, although the discussion of environmental stresses and their connection to conflict is clearly an important area of research, it is important to realize that, on the main issue areas, resources have not been becoming increasingly scarce but rather more abundant.⁶¹

The basic economic logic underlying this claim is straightforward: rising prices stemming from increased demand for, or decreased supply of, natural resources force individuals, firms, and governments to adapt by developing cheaper substitutes, conservation methods, and more efficient means of extraction.

Neoclassical economists also contest the connection between population growth and economic decline (and hence state failure). Here it is argued that population growth generates positive effects, including economies of scale, larger labor forces, and induced innovation and technological change, that tend to balance out the negative effects emphasized by neo-Malthusians. Neoclassical economists contend that government policies are much more important than population growth in determining prospects for economic development.⁶²

The Honey Pot Hypothesis

The adaptation argument seeks to undermine the neo-Malthusian claim that population growth and environmental degradation necessarily create unbearable strains on societies and states. Other neoclassical arguments directly address the relationship between natural resources and civil strife. One claim centers on so-called honey pot effects. According to the *honey pot hypothesis*, abundant supplies of val-

uable natural resources create incentives for conflict groups to form and fight to capture them.⁶³ This may spawn attempts by regional warlords and rebel organizations to cleave off resource-rich territories or violently hijack the state. Once seized, control over valuable natural resources fuels conflict escalation by allowing the parties to purchase weaponry and mobilize potential recruits.⁶⁴ In short, profit seeking motivates and empowers insurgents in resource-rich countries. As Paul Collier argues,

Rebellions either have the objective of natural resource predation, or are critically dependent upon natural resource predation in order to pursue other objectives. These, rather than objective grievances, are the risk factors which conflict prevention must reduce if it is to be successful.⁶⁵

Echoing these sentiments, de Soysa contends that “greed rather than grievance (at least in terms of the availability of natural resources is concerned) is likelier to generate armed violence.”⁶⁶

The Resource Curse Hypothesis

Some neoclassical economists argue that natural resource abundance increases risks of civil strife by producing weak states via a set of developmental pathologies known collectively as the resource curse. Proponents of the *resource curse hypothesis* provide both economic and political foundations for this claim.⁶⁷

Resource abundance is argued to contribute to economic stagnation over the long run through a number of crowd-out effects sometimes referred to as “Dutch Disease.” As the economists Jeffrey Sachs and Andrew Warner note, “the core of the Dutch Disease story is that resource abundance in general or resource booms in particular shift resources away from sectors of the economy that have positive externalities for growth.”⁶⁸ When capital and labor focuses on booming natural resource sectors, they are drawn away from other sectors of the economy, increasing their production costs. These economic distortions slow the maturity of non-resource tradable sectors, harm their competitiveness, and thereby inhibit the kinds of economic diversification, especially an early period of labor-intensive manufacturing, that many neoclassical economists suggest is vital for long-term growth.⁶⁹

An over-reliance on exports of minimally processed natural resources is also argued to make countries vulnerable to declining terms of trade and the highly volatile nature of international commodities markets. In the absence of a diverse array of exports, especially manufactured goods that tend to have more stable prices, resource-rich

countries are prone to dramatic economic shocks when prices for primary commodities inevitably crash.⁷⁰

Beyond the economic distortions created by local resource abundance, there is also a political dimension to the resource curse. The most common political argument focuses on problems associated with “rentier states.” States that accrue a significant amount of revenue from natural resource exports that they directly control are prone to developing corrupt, narrowly based authoritarian or quasi-democratic governing institutions. When states capture enormous rents from natural resources, they face far fewer incentives to bargain away greater economic and political accountability to the populace in exchange for broader rights of taxation.⁷¹ Instead, natural resource wealth can be used to maintain rule through patronage networks and outright coercion. The institutional makeup of rentier states therefore reduces the prospects for broad-based, benevolent economic and political reform, weakening the state over the long term and generating substantial societal grievances. These conditions are ripe for violent revolt.⁷²

Criticisms

Neoclassical arguments related to the adaptive capacities of markets and societies have substantial merit. After centuries of debate it is clear that doomsaying claims about the inevitable relationship between population growth, environmental degradation, and resource scarcity have proven false. Indeed, as noted by Nancy Birdsall and Steven Sinding, two scholars sympathetic with the neo-Malthusian view: “The effects of markets and institutions—sometimes good, sometimes bad—can easily swamp the effect of population change on resource use, degradation, and depletion.”⁷³ Nevertheless, neoclassical economists tend to be overly optimistic about the prospects for adaptation. While markets and institutions have frequently adapted to population and environmental pressures at the global level and within wealthy industrialized countries, serious local scarcities continue to emerge within developing countries. Moreover, adaptation has been much more successful in heading off shortages of nonrenewable resources than renewable ones. This is somewhat ironic since nonrenewable resources are, by definition, finite, whereas renewable resources are capable of naturally regenerating themselves if they are not consumed or degraded too rapidly.

Several related hurdles appear to undermine the operation of neoclassical logic, especially as it relates to local scarcities of renewable resources throughout much of the developing world. First, in many

developing countries the markets, property rights, government policies, judicial (contract-enforcing) institutions, basic infrastructure, research facilities, extension services, and human capital required to transform price signals into adaptation are imperfect, absent altogether, or distorted in ways that actually compound resource problems. Second, critical renewable resources such as arable land and freshwater often lack cheap substitutes or easy, short-term tech-fixes. This leaves conservation as the major adaptation mechanism. Unfortunately, the economic policies and poverty that drive many environmental pressures in the first place often undermine the capacity of individuals and governments to make timely and expensive investments in conservation. Finally, neoclassical economists tend to underrate the degree to which environmental systems become stressed in nonlinear, rapid, and irreversible ways, producing sudden surprises and scarcities that are difficult to respond to, at least in the short term. Therefore, adaptation, even if it eventually occurs, may be too late to head off significant transitional difficulties and conflicts.⁷⁴

What about the neoclassical claim that population growth does not retard economic progress? For decades, studies failed to find a strong statistical correlation between population growth and per capita economic output, appearing to give credence to the neoclassical position. Nevertheless, recent models that disaggregate population growth into several components (i.e., population size and density, as well as changes in mortality and fertility, labor force size, and youth dependency ratios) suggest that the net effect of rapid population growth on economic progress in developing countries has been negative, at least since the 1980s.⁷⁵ In the most prominent study, population size and density alone do not appear to undermine economic growth (and may, over the long term, have a positive effect) but, "the positive impacts of population density, size, and labor force growth are more than offset by the costs of rearing children and maintaining an enlarged youth-dependency age structure."⁷⁶

Furthermore, although economic growth is certainly possible in the context of rapid population expansion, the prospects for such growth hinge on the initial level of economic development and the adoption of appropriate economic strategies. Unfortunately, in many poor countries, government policies have encouraged capital-intensive industries that underutilize abundant supplies of labor. Governments have also adopted other policies ill-suited for labor-intensive agricultural sectors, such as high taxes on farm inputs and outputs. Compounding matters, economic policies have tended to overemphasize urban areas at the expense of investments in rural development. Development strategies have thus often been incompatible with the promotion of

economic growth in an environment of rapid population growth.⁷⁷ And, “while it can be demonstrated that ‘population problems’ are largely due to inappropriate government policies, it is also clear that, *given* these policies, population growth can exert a stronger adverse impact.”⁷⁸ This all suggests that the effects of population growth are likely to vary from context to context. In some cases, the effects may be negligible or even positive. But, in other cases, the effects are likely to be negative, sometimes profoundly so.

Turning to neoclassical conflict hypotheses, the honey pot hypothesis also suffers from a number of problems. First, the greed-based logic of the honey pot applies much more to nonrenewable mineral resources than to renewable ones, with the partial exception of timber. Nonrenewable resources are especially likely to be implicated in violent conflicts in which valuable resources themselves are the main prize to be captured, as opposed to conflicts emanating from the more diffuse social and economic effects of environmental degradation and renewable resource scarcity. The incentive and capability to capture nonrenewable resources is especially high, because mineral resources tend to be much more valuable per unit of volume, geographically concentrated, and easily tradable than most renewable resources. These features make nonrenewable resources considerably more “lootable.”⁷⁹ It should come as no surprise, therefore, that the vast majority of examples of honey pot-driven conflicts revolve around oil, precious metals, diamonds, and other valuable minerals; quantitative research suggests that there is no statistically significant relationship between an abundance of legal agricultural commodities or other renewable resources and the onset or duration of civil strife.⁸⁰ Instead, renewable resources are much more likely to be sources of grievance-based struggles. Agriculture, forestry, and fishing contribute much more to employment than do capital-intensive nonrenewable resource sectors, and access to arable land (or inexpensive food) and freshwater is vital to extremely poor individuals throughout the developing world. Degradation, depletion, or maldistributions of these resources can therefore directly implicate the survival of much larger numbers of people in rural areas than nonrenewables can.⁸¹ Under these conditions, grievance rather than greed is likely to be the primary motivation for armed struggle.

Second, natural resource scarcity and abundance as conceptualized by neo-Malthusians and neoclassical economists are not opposites; they both can, and often do, exist at the same time at different levels of analysis. Oil, precious metals, gemstones, and the other troublesome resources discussed by the honey pot hypothesis may be abundant locally *but they are scarce globally*.⁸² Indeed, it is the global scarcity of these resources that makes them so valuable and thus such huge prizes to

seize through violence. Moreover, the logic of the honey pot clearly applies *more* to situations in which initially abundant resources become increasingly scarce over time. After all, if natural resources were truly abundant, they would be of little value and thus not worth fighting over. As natural resources are consumed or degraded at unsustainable rates, their value increases and rival social groups confront greater incentives to seize them. For example, Michael Klare's research on contemporary resource clashes in Angola, the Indonesian and Malaysian regions of Borneo, the Democratic Republic of Congo, Sierra Leone, and elsewhere finds that rising global demand and scarcity-driven price increases provide additional incentives for contending social groups and elites to capture control of valuable mines, oil fields, and timber stands, by force if necessary.⁸³

Finally, like the deprivation claims advanced by neo-Malthusians, honey pot arguments locate the origin of violence in the incentives of societal actors. By themselves, however, these incentives are not enough to explain violence; strong states should be able to deter or otherwise frustrate these groups before they form or become capable of seizing valuable natural resources to finance their activities.⁸⁴ In other words, like grievance-based clashes, greed-based ones are only likely to occur when states are weak.

The resource curse hypothesis makes up for this last deficiency by endogenizing the state into its explanation for civil strife, but resource curse arguments confront their own set of shortcomings. First, like the honey pot hypothesis, economic and political components of the resource curse apply much more to countries dependent on the export of nonrenewable resources than renewable resources. Here several characteristics distinguish mineral-dependent economies and polities from countries dependent on renewables (again, with the partial exception of timber). Mineral countries frequently depend on a highly capital-intensive industrial enclave characterized by low employment and skewed wage structures, making the economic distortions particularly acute. These countries also tend to be economically dependent on a single resource, making them more sensitive to price volatility.⁸⁵

Furthermore, the rents generated by mineral exports are extraordinary, with the bulk of these rents captured by the state. This is especially true of oil but is also the case with other minerals. As Sachs and Warner note, "we should distinguish minerals (which generally have high rents) from agriculture (which generally has low rents). In the same vein, perhaps processed agriculture should be distinguished from primary agriculture."⁸⁶ States in the developing world also exercise sole ownership rights over subsoil assets and, often, public forestlands. This means that export revenue from these resources is not

mediated through domestic private actors but instead accrues directly to the state and allied firms. This differs dramatically from the situation in most countries dependent on exports of agriculture, since these resources tend to be privately owned (even if sometimes highly concentrated). Thus, since government officials have the ability to extract and control unusually high income from nonrenewables, the pathologies of rentier state politics are likely to be much more acute than in countries dependent on most renewable resources.⁸⁷

Second, even if the logic of the resource curse provides some insight into the challenges confronting late-developing economies and polities with initially abundant renewable resources, this position does not necessarily compete with, or negate, the basic causal claims advanced by neo-Malthusians. If development is viewed as a hypothetical sequence of temporal stages, a good case can be made that the developmental pathologies of the resource curse and those emerging from rapid population growth, environmental degradation, and resource scarcity can all occur and interact with one another within the same country over time. During stage 1, when resources are abundant, a country may become highly dependent on these resources, and elements of Dutch Disease and rentier state politics may take hold. Then, during stage 2, demographic and environmental pressures may produce growing scarcities, undermine the economy, and contribute to political crises in the way described by neo-Malthusians *precisely because* the country developed such a strong dependence on exporting natural resources in the first place. Lastly, at stage 3, scarcity and economic crisis may eventually force the government and the private sector to promote diversification as a means of resuscitating growth. This hypothetical sequence suggests that neoclassical theorists tend to focus on the logic involved in the leaps between these temporal stages without sufficiently recognizing the risks of transitional violence during the middle stage emphasized by neo-Malthusians.

By ignoring transitional dangers, neoclassical economists miss important contributors to civil strife. The experience of the world's poorest countries suggests that many are currently stuck in stage 2, where high dependence on natural resources, rapid population growth, environmental degradation, and emerging scarcities conspire to threaten political stability. Recent reports by both the UN Development Programme (UNDP) and the World Bank, for example, suggest that the least developed countries tend to be those that are most dependent on minerals, agriculture, forestry, fish, and other natural resources.⁸⁸ Unfortunately, as the UNDP notes,

Slow world market growth, unchanging technologies and often volatile and declining world prices for these commodities offer much too narrow a base

for economic advance. Continued heavy dependence on a handful of primary commodity exports provides no chance of long-term success. This unfortunate situation afflicts much of Sub-Saharan Africa, the Andean region and Central Asia.

Exacerbating these structural problems is rapid population growth, which tends to be fastest in countries with the lowest human development. These challenges can seriously hinder the availability of farmland and increase environmental degradation (deforestation, soil degradation, fisheries depletion, reduced freshwater).⁸⁹

This potential compatibility between the supposedly rival claims made by neo-Malthusians and neoclassical economists may actually be supported by the quantitative findings provided by some resource curse proponents. Most notably, Collier and his associates in the World Bank Development Research Group use the percentage of a country's GDP made up of primary commodity exports as a measure of resource abundance/scarcity. However, as Indra de Soysa notes,

The finding that the ratio of primary exports to total exports is strongly related to conflict can very well be interpreted to mean that poor countries, which are dependent on primary goods exports, are facing Malthusian crises and are unable therefore to meet the demands of society, leading to subsistence crises, which is in fact the argument put forth by the proponents of "eco-violence."⁹⁰

Moreover, the same studies which suggest that natural resource dependence makes countries conflict-prone also indicate that population size and population density, especially in the context of poor economic conditions, place countries at higher risk of civil strife.⁹¹

Finally, like the neo-Malthusian state failure argument, the resource curse hypothesis discusses the state without fully theorizing its role in conflict. Resource curse accounts fail to include a broader discussion of the ways in which social and political intervening variables affect the relationship between resource endowments and violence.

Political Ecology

Political ecology represents a third major approach to the population–environment–civil strife connection that draws extensively on the Marxian tradition in political economy and the Foucaultian tradition in cultural theory. Political ecology concerns itself chiefly with the various ways in which global and local political economies parcelize the natural world, assign value to these parcels, distribute them in particular ways, and thereby contribute to patterns of exploitation and violence.⁹²

The Centrality of Resource Distribution

As Nancy Peluso and Michael Watts note, political ecology emphasizes “the entitlements by which differentiated individuals, households, and communities possess or gain access to resources within a structured political economy. It grants priority to how these entitlements are distributed, reproduced, and fought over in the course of shaping, and being shaped by, patterns of accumulation.”⁹³ Colonialism, the expansion of capitalism, and the integration of markets via globalization have historically meant that the value of natural resources has been largely constituted by the power, policies, and consumption habits of wealthy industrial countries and their allies among the elite in developing countries. Moreover, the structure of both the contemporary international trading system and most domestic economies is such that the distribution of these resources is skewed in favor of these powerful actors.⁹⁴ Consequently, many poor, subsistence, and indigenous communities in developing countries experience so-called scarcities of vital natural resources for distributional reasons, even under objective conditions of global or local abundance. As such, for political ecologists, scarcity is an artifact of social interactions within certain international political and economic structures, not a result of demographic pressures and natural limits. As Nicholas Hildyard argues:

Resource shortages and ecological degradation are primarily the result of the uneven social measures that “manufacture scarcity all over the world for the economic and political gain of powerful interests.” The systematic inequalities that block peoples’ access to income, health, education and democratic rights, for example, are primarily responsible for the geographical and sociological “profile” of ecological degradation. Even in those instances where ecological scarcity appears unconnected to social scarcity, its character is nonetheless “defined by economic forces, which are . . . fundamentally linked to the social and cultural tendencies that fuel pro-scarcity politics.”⁹⁵

Political ecologists thus believe that population growth and environmental degradation, in and of themselves, are not very important sources of either scarcity or violence. Indeed, political ecologists contend that accounts which privilege these “natural” sources of scarcity and violence mask the historical and structural origins of both phenomena.⁹⁶ Although environmental degradation may play some role, it is only insofar as *both* environmental degradation and violence are produced by systems of inequality.

Political ecologists also deride neo-Malthusians such as Homer-Dixon who attempt to bridge the gap between the two approaches by including “structural scarcity” (unequal resource access) in their

models alongside “demand-induced scarcity” (from population growth) and “supply-induced scarcity” (from environmental degradation). Political ecologists believe that this move amounts to “analytical obfuscation.”⁹⁷ They insist that “differentiating between socially generated scarcity and absolute [natural] scarcity is a *sine qua non* for any sensible discussion of the causes of ecological degradation, deprivation, food scarcity and other problems often attributed to ‘overpopulation’—and hence the social upheaval, including violence, that they can help trigger.”⁹⁸

Conflict Hypotheses

Although political ecologists are clearly interested in the politics of violence,⁹⁹ they offer “no single [causal] theory of violence as such.”¹⁰⁰ Nevertheless, it is still possible to extract some basic causal claims regarding the sources of civil strife. Placing the politics of resource control and distribution at the center of their analyses leads political ecologists to posit, at least implicitly, three ways in which conflicts over natural resources can lead to violent conflict within countries. Ironically, despite their rejection of mainstream perspectives, elements of each mirrors a number of the arguments advanced by neo-Malthusians and neoclassical economists. First, civil strife may erupt as local communities rise up to challenge unequal resource distributions and the state responds by using violent means to crush resistance movements. I call this the *distribution hypothesis*. This claim has much in common with the neo-Malthusian deprivation hypothesis, although it obviously identifies a different source of deprivation. For political ecologists, these resource-related conflicts are driven primarily by structural inequalities rather than population growth or “natural” scarcity.¹⁰¹ Second, political ecologists argue that powerful state actors, corporations, and rebel groups may use violence against one another or against disadvantaged communities in their efforts to seize control of valuable natural resources, paralleling the logic of the neoclassical honey pot hypothesis.¹⁰² Finally, some political ecologists have argued that a local abundance of valuable natural resources distorts economic and political development, employing the same reasoning as the neoclassical resource curse hypothesis.¹⁰³

Criticisms

A central cleavage between neo-Malthusians and political ecologists is their apparent disagreement regarding the importance of natural ver-

sus social sources of scarcity. Neo-Malthusians discuss both, but political ecologists are right that natural sources appear to trump social ones in many neo-Malthusian accounts. Unfortunately, political ecologists make the opposite error when they claim that natural and social sources of scarcity are “wholly unrelated processes”¹⁰⁴ or suggest that distributional concerns are *always* more important.¹⁰⁵

A more sophisticated approach would take seriously each contributor to scarcity—local population growth, environmental depletion and degradation stemming from international demand and local economic practices, and resource inequality—and closely analyze the ways that they interact. It is certainly true that population growth, environmental degradation, and resource inequality are different types of natural and social processes, and that these processes do not always produce resource scarcity. Indeed, as neoclassical economists point out, demographic and environmental pressures sometimes encourage conservation, rehabilitation, substitution, and other adaptation efforts. Still, none of this negates the fact that under many circumstances the synergy of population growth, environmental degradation, and resource inequality *does* produce scarcity.

A simple hypothetical demonstrates why an approach that downplays or ignores this possible interaction is a poor way to think about questions of resource scarcity. Imagine two forty-hectare areas of arable land, each with ten farmers. In one of these areas land is distributed equally across the population (4 ha each), while in the second area 20 percent of the population controls 60 percent of the land (leaving eight farmers with only 2 ha each). Now imagine that each farmer requires at least 1 ha to support his or her family. Under conditions of zero population growth and zero environmental degradation, there will be sufficient land to support each farmer’s family *even in the area with a highly skewed distribution of land*. In contrast, if both areas are experiencing an annual population growth rate of 3 percent, the populations of each will double every twenty-three years. In less than fifty years land will become scarce (relative to the survival needs of farmers) *even in the egalitarian area*, while poor farmers in the skewed area will experience scarcity in half that time. Now imagine that the supply of arable land in each area is not constant but instead is in gradual decline because of soil erosion. In this situation poor farmers will experience scarcity even sooner under *both* scenarios. Explaining or understanding the timing and magnitude of scarcity experienced by poor farmers in these two hypothetical areas obviously requires a thoughtful consideration of the origins and implications of inequality. But a singular focus on inequality is insufficient. A full account *also* requires a consideration of the effects of, and interactions with, population growth, environ-

mental degradation, and the adaptive capacities of local communities and institutions.

Beyond the issue of resource distribution, the specific conflict hypotheses advanced by political ecologists parallel the general logic of the deprivation, honey pot, and resource hypotheses discussed by their rivals. As such, the criticisms already examined apply to them as well. More generally, the theoretical claims made by political ecologists suffer from a high degree of indeterminacy and underspecification. There is very little conceptual elaboration or theoretical operationalization of most of the approach's central features and posited causal connections. For example, although Peluso and Watts argue that "the contours of the broad political economy (under which complex class and social forces operate) and how the rhythms of environmental change and accumulation shape the processes of exclusion, disenfranchisement, and displacement must be specified," neither they nor others working in this vein do so satisfactorily.¹⁰⁶ Crucial concepts such as capitalism, regimes of accumulation, production, labor, culture, and discourse typically go undefined; the causal relationships between these factors and key actors such as the state, firms, middle and upper classes, peasants, and urban workers (not to mention indigenous cultural communities, religious organizations, nongovernmental organizations, and other subsets of local and transnational civil society) are left vague; the causal logic whereby political, economic, and discursive practices and structures constitute particular environments and patterns of violence is underspecified; and, perhaps most important, the complex relationship *between* material processes and discursive ones is simply asserted rather than carefully theorized. This underspecification makes the various arguments advanced by political ecologists very difficult to evaluate relative to their competitors.

Understanding the Population–Environment– Civil Strife Connection

This book seeks to improve our understanding of the population–environment–civil strife connection in several important respects. First, it examines the degree to which demographic and environmental factors cause civil strife, and goes to great lengths to elaborate upon, and empirically demonstrate the nature of, the causal relationship. In doing so, the theoretical argument I put forth draws on a broad array of insights from the general study of internal wars. Second, my analysis focuses intensively on the intervening variables that exacerbate, or potentially mitigate, the risks of civil strife. In other words, my theoretical

and empirical analysis places as much emphasis on social and political variables as on demographic and environmental ones.

Focusing on these causal processes and intervening variables also provides an opportunity to address a number of methodological limitations plaguing current research in this area. Existing quantitative studies suggest a possible correlation between population and environmental factors, on the one hand, and civil strife, on the other. However, these studies are not very helpful in identifying and empirically tracing the nature of the causal relationship.¹⁰⁷ Previous qualitative case study research has helped to address this issue, but these studies have tended to select cases where violence occurred and then to search for demographic and environmental connections. The lack of variation in the dependent variable (the degree of civil strife) is problematic. After all, without looking at cases where demographic and environmental pressures were acute yet violence did not erupt, we are unable to discern the conditions that make conflict more or less likely.¹⁰⁸ Indeed, Homer-Dixon, the target of much criticism in this regard, has himself argued that future research should focus on cases that “exhibit all the precursor conditions hypothesized to produce violence . . . but that do not exhibit violence. Such cases, if found, will further our understanding of the many contextual factors that can influence the strength of the relationship between environmental scarcity and violence.”¹⁰⁹ In this book I take up the methodological and empirical challenge by analyzing instances where violent conflict occurred as well as those where it was muted or avoided altogether.

The Argument in Brief

The independent variable in my analysis is *demographic and environmental stress* (DES), a composite variable representing the interaction of rapid population growth, environmental degradation, and unequal distribution of renewable resources. I contend that there are two causal pathways whereby DES causes violence: *state failure* and *state exploitation*. The modified version of the state failure hypothesis presented in chapter 2 suggests that violent conflicts occur when DES puts pressure on both society and the state, simultaneously increasing the incentives and opportunities for social groups to engage in violence via the logic of the security dilemma. State exploitation represents a second pathway to bloodshed. These conflicts occur when population and environmental pressures provide state elites and their allies with incentives and opportunities to instigate violence that serves their narrow self-interests.

I further argue that two key intervening variables, *groupness* and *institutional inclusivity*, play decisive roles in determining which countries are most prone to DES-induced state failure and state exploitation conflicts. Countries with high degrees of groupness are deeply cleaved along ethno-cultural, religious, or class lines. These conditions encourage violence by helping to overcome the collective action problems inherent in the formation of conflict groups, whereas low degrees of groupness frustrate such mobilization. The second important intervening variable, institutional inclusivity, refers to the degree to which a wide array of societal actors have the ability to influence the government and, in particular, constrain the executive. I contend that inclusive institutions check violence by facilitating societal cooperation in the face of a weakened state and by making state exploitation more difficult, whereas exclusive institutions short-circuit cooperation and leave state elites free to instigate violence.

I evaluate the empirical plausibility of these claims through a careful examination of the communist insurgency in the Philippines and ethnic land clashes in Kenya. These cases were chosen for both theoretical and pragmatic reasons. Theoretically the cases exhibit variation in all three causal variables—DES, groupness, and institutional inclusivity—over time and space, providing excellent opportunities to test the specific effects of each. Pragmatically both countries have good demographic and environmental data going back for several decades, which cannot be said of many developing countries. This should increase our confidence in the empirical findings.

The remainder of the book is organized as follows. Chapter 2 presents my theoretical argument. Chapters 3–5 evaluate my theoretical claims empirically by examining civil strife in the Philippines and Kenya. Chapter 3 tests the plausibility of the state failure argument by analyzing the demographic and environmental roots of the communist insurgency in the Philippines. Chapter 4 tests the plausibility of the state exploitation argument by exploring state-sponsored ethnic clashes over land in Kenya. Chapter 5 revisits both conflicts and discusses the ways in which different levels of groupness and institutional inclusivity account for variations in the degree of violence over time and space within each country. Chapter 6 summarizes the theoretical and empirical claims, applies them to a number of other recent cases of conflict and nonconflict, and draws lessons for the future.