
Resource Scarcity and Environmental Degradation: Analyzing International Conflict and Cooperation

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The relationship among resource scarcity, degradation, and conflict has received a great deal of attention in both the international relations and environment and security literature. Both theoretical and empirical works have considered, either directly or indirectly, the environmental and natural resource roots of interstate conflict (Myers 1993; Tir and Diehl 1998; Homer-Dixon 1999; Matthew 1999). In its extreme yet rare form, the relationship between conflict and the environment has also been epitomized in the “resource wars” argument (Barnet 1980; Mandel 1988; Bullock and Darwish 1993; Baechler 1998; Klare 2001).

Past studies, critical of the relationship between resource scarcity, environmental degradation, and conflict, have largely argued that exogenous factors such as ingenuity, second-order resources, and trade often play a role in mitigating interstate violence over scarce resources (Simon 1989; Allan 2001). Yet the part that scarcity and degradation may in fact perform in fostering interstate cooperation, and consequently reducing both violent and political conflict, has received little attention (Deudney 1991, 1999).

This volume asserts that while resource scarcity and environmental degradation may well constitute sources of conflict, political dispute, and mismanagement between states, they may also be the impetus for cooperation, coordination, and negotiation between them. While the volume recognizes both sides of the resource scarcity and environmental degradation coin, the cooperative relationship is of particular interest and scrutiny. Indeed, conflict frequently motivates cooperation, and resource scarcity and environmental degradation are important elements of this relationship.

Generally, the authors in this volume maintain that increasing scarcity and degradation induce cooperation across states. To that extent, we provide a different perspective than that of the resource wars argument

made with regard to particular natural resources such as oil, freshwater, minerals, and fisheries. Yet beyond this claim, the volume systematically explores the intricacies and nuances of this scarcity and degradation contention across a set of additional resources and environmental problems, which may merely motivate political conflicts such as climate change, ozone depletion, oceans pollution, transboundary air pollution, and biodiversity conservation. In particular, and in line with the collective action school, the volume investigates the notion that as scarcity and degradation worsen, interstate cooperation becomes difficult to achieve since it may be too costly to manage the degradation or there is simply too little of the resource to share (Ostrom 2001). Similarly, low levels of scarcity may depress cooperation as there is less urgency to organize and coordinate. Scarcity and degradation levels, in other words, should matter in explaining the intensity of cooperation.

While it is logical to associate the term “resource scarcity” with certain issue topics (e.g., oil and minerals) and the term “environmental degradation” with a slightly different set of issue topics (e.g., oceans pollution and transboundary air pollution), these two thematic labels are quite complementary. Environmental degradation often reduces the quantity or quality of the resource in question, thereby contributing to its scarcity. For example, “air pollution in a city degrades the quality of the air and changes an unlimited public good (clean air) into a scarce one.” Likewise, the “pollution of a river . . . reduces the quality of the water; but it can also be interpreted as reducing the quantity of clean water, and therefore contributing to increased scarcity” (Gleditsch 1998, 387). To the degree that the two terms are not necessarily mutually exclusive, they are (for the most part) used interchangeably throughout this volume, when appropriate.

Recognizing that scarcity and degradation alone cannot explain the evolution of cooperation, the volume also considers other crucial factors for understanding the intricacies of interstate coordination. Although each topic boasts its own set of ancillary factors for explaining cooperation, this book investigates how asymmetries across countries (geographic, economic, and political) affect negotiation and cooperation (Botteon and Carraro 1997). To that extent, the volume looks at how respective asymmetries are managed to encourage interstate cooperation or environmental treaty making, in particular across transboundary environmental issues. While the asymmetries ascribed to the various issues help to explain the challenges to cooperation, they are directly interrelated with the book’s theme on scarcity and degradation. In other words,

countries that value the same resource differently or have varying abilities to deal with an environmental problem implicitly perceive scarcity and degradation in a divergent fashion. This does not necessarily mean that cooperation can't be achieved. Rather, such differences may need to be offset in order to encourage interstate coordination. The nature of cooperation may also be affected by different levels of scarcity as well as the asymmetries that usually influence how degradation and scarcity are perceived.

The volume's theme and hypotheses draw on scholars from disciplines and fields such as international relations, economics, and political science. Utilizing these disciplinary perspectives enables a more comprehensive and robust investigation of our scarcity-cooperation contention. A multidisciplinary method likewise provides a forum for better understanding important political, economic, legal, social, and cultural aspects of each natural resource or transboundary environmental issue along with the relationship to the evolution of international cooperation.

Scarcity, Degradation, and Conflict

Inspired by neo-Malthusian thinking, several studies have argued that resource scarcity and environmental degradation are key factors for understanding national and international insecurities in the form of violent conflict (Renner 1999). In their most acute form, such studies have considered the increased likelihood of resource wars among states. James Orme (1997, 165–167), for example, has generally asserted that the effects of climate change, global water scarcity, food security, and increased industrialization and population growth in the developing world could likely bring a fundamental alteration in the basic conditions of international politics. As a result, like in a Hobbesian world, states may well resort to force and war as they compete for scarce resources. This claim finds general support among realist thinkers who claim that tensions and conflict are more likely as countries attempt to reduce their dependence on other countries (Waltz 1979, 106, 154–155).

Lateral pressure theory, developed by Nazli Choucri and Robert North (1975, 1989), generally supports this claim theorizing that rivalry and conflict in the international system is partly guided by domestic growth and expansion and subsequent competition for resources and markets. Although the theory does not preclude peaceful resolutions to interstate competition for resources, it attests that countries may meet growing demands for resources by acquiring those necessary goods

outside their own borders, which may be a source of conflict and war. Richard Ullman (1983, 139–140) has argued that “conflict over resources is likely to grow more intense as demand for some essential commodities increases and supplies appear more precarious.” While focusing mostly on the relationship between resource scarcity and intrastate violence, Thomas Homer-Dixon (1999, 139) has contended that if a war was to be sparked over any renewable resource, it would be freshwater—citing the conflict-eliciting upstream/downstream configuration and power dynamics of the Nile River. Shy of an actual all-out war in the modern era, scholars have enumerated the militarized skirmishes that have been sparked over shared water resources. An often-cited example is the exchange of fire between Syria and Israel over Syria’s “all-Arab” plan to divert the Jordan River headwaters (Seliktar 2005).

With much less frequency, international fisheries have also been discussed in the context of resource wars (Peterson and Teal 1986). A favorite near-armed example is that of the so-called Cod War of 1972–1973 between Iceland and the United Kingdom. In this case, Iceland unilaterally extended its coastal fishing rights, protecting access to what it considered a resource vital to its economy. The United Kingdom, which was also fishing in these waters and refused to recognize this extension, saw their trawlers driven away by Icelandic gunboats. In turn, this resulted in the arrival of the British Navy. The so-called Turbot War between Spain and Canada is another, more recent instance of a dispute, and one that actually involved live fire (Soroos 1997a; Barkin and DeSombre 2000). In 1995, a Spanish fishing boat was located outside the two-hundred-mile limit. The Spanish trawler was spotted by a Canadian patrol boat, which fired warning shots. While the tensions between the two countries eventually subsided, Canada had accused Spain of undermining conservation efforts.

Nonrenewable resources, as opposed to the above-mentioned renewable resources, have been touted as more prone to violent behavior between states, since they can be quickly utilized to build and fuel the military (Homer-Dixon 1999, 138–139). In this context, Michael Klare has claimed that access to oil could be a *casus belli*, focusing on the Persian Gulf, Caspian Sea, and South China Sea. In most of these cases, argues Klare (2001, 53, 57), the parties have yet to agree on a plan to divide up the spoils, making the situation potentially chaotic. Writing about the Middle East and Persian Gulf in the 1970s, Choucri with Vincent Ferraro (1976, 148) conjectured that the large-scale flow of armaments into the area could well increase the probability of local conflict and instability, consequently eliciting a response from oil-importing

countries. Along somewhat similar lines, Neha Khanna and Duane Chapman (2010) have claimed that arms imports from the United States and its allies to the Persian Gulf have actually contributed to stable oil markets, at least between 1989 and 1999.

Arthur Westing's seminal edited volume *Global Resources and International Conflict* (1986a) seconds oil's strategic importance. One of the chapters on oil considers the timing of Germany's invasion of Russia in World War II as a consequence of Germany's lack of access to Middle Eastern oil supplies (Arbatov 1986, 24). Minerals are also discussed in the context of armed interstate conflict in Westing's work. Territorial rivalries over the iron-rich Lorraine region and conflicts over colonies or spheres of influence in resource-rich Africa played an important role in World War I (Westing 1986b, 204).

Beyond those resources (e.g., freshwater, oil, minerals, and fisheries) hypothesized to ignite violence between states or shown to have some role in fomenting war, other issues of environmental concern analyzed in this volume include ozone depletion, oceans pollution, biodiversity loss, and climate change. Surely considering these particular environmental topics as a *casus belli* would border on sensationalism.¹ Pertaining especially to climate change, however, scholars have considered how the effects of global warming may indirectly undermine the legitimacy of governments, affect human health and food security, and induce migration (Barnett 2003; Nordås and Gleditsch 2007; Reuveny 2007). By extension these studies have argued that competition and violence may ensue. In fact, empirical studies have found moderate support for a connection between the effects of climate change and civil conflict (Raleigh and Urdal 2007).

It is likely that the violent conflict hypothesized by studies, as a result of climate change and its effects, is unique to the intrastate level (i.e., militarized internal conflicts) rather than the interstate one (i.e., militarized state-to-state interactions). Yet bearing in mind the consequences of climate change and the other environmental issues enumerated above to regional and international security, in a broad sense, would be germane, since the issues relate to a state's and region's economic well-being and environmental sustainability (Gleick 1989; Soroos 1997b; Benedick 1998, Nautilus Institute and Center for Global Communications 2000; Jacques 2002, 2006; McNeely 2005; IPCC 2007). Consequently, regional and international security, broadly defined, may also be affected to the extent that a nonviolent political dispute regarding an environmental issue ensues and remains unresolved (Mathews 1989, 174; Esty 1999, 304, 308).

Predicting the occurrence of formal militarized disputes among states over scarce natural resources (particularly water, oil, minerals, and fisheries) is a somewhat futile exercise as it is difficult to ascertain what the future holds. By one account, though, the period 1901–1986 has seen only nine interstate wars with a specific connection to such resources (Westing 1986b, 204–210).² In contrast, the periods 1920–1944 and 1946–2010 have seen the signing of around 108 and 2,719 agreements, respectively, pertaining to those same resources (United Nations Treaty Collection n.d.).³ The United Nations Treaty Collection also reports a total of about 1,128 treaties pertaining to the environment, in particular, for the periods 1920–1944 and 1946–2010.⁴ While surely these simple numerical comparisons do not debunk the possibility that a militarized violent dispute may occur over scarce resources, it is clear that exercises of cooperation are, in comparison, impressive in number.

This is not to suggest that conflicts of interest and political disputes do not take place over scarce resources or a degraded environment (Gleditsch 1998, 387). Indeed, relationships of complex interdependence may motivate tensions among states (Keohane and Nye 1977, 9–11). That being said, it is these disputes and political tensions that may likewise inspire coordination. It is thus important to understand why and how these issues motivate interstate cooperation and environmental treaty making. Resource scarcity and environmental degradation are at the root of explaining such phenomena.

Scarcity, Degradation, and Cooperation

Critics of the resource wars and environment-conflict conjectures have mostly argued from an ingenuity or second-order resources standpoint, among other perspectives.

The late economist Julian Simon (1981, 3–11, 345–348), for example, maintained that people are the “ultimate resource” and the effects of scarcity could be overcome through human ingenuity. Esther Boserup (1981, 3–28, 93–111), the agricultural economist, has seconded this idea, demonstrating that (prior to the Industrial Revolution) densely populated countries, where there would be more strain on the environment, were actually beacons of technological innovation. In other words, the necessity to cope with environmental scarcities—instigated by a large population—motivates invention.

A second-order resources perspective considers the availability of institutional capacities to deal with the social consequences of consider-

able physical scarcity or first-order resources (Ohlsson 1999; Ohlsson and Turton 2000).

Aside from a small number of works, the premise that resource scarcity and environmental degradation actually provide the impetus for cooperation and negotiation has not been developed in greater detail. Unquestionably, these works provide the rationale and starting point for this volume. That is, scarcity is the basic impetus for interstate cooperation. As the Scottish philosopher David Hume ([1739–1740] 1978, 494–498) postulated, the need for rules of justice is not universal. Such rules arise only under conditions of relative scarcity, where property must be regulated to preserve order in society.

Most notable of the few contemporary writings that directly link scarcity and degradation with international cooperation is Daniel Deudney's critical analysis of the scarcity-conflict contention. In the edited volume titled *Contested Grounds*, Deudney (1999, 203) argues that "analysts of environmental conflict do not systematically consider ways in which environmental scarcity or change can stimulate cooperation."⁵ Others have likewise joined Deudney's assertion, challenging the environment-conflict thesis. Jon Barnett, for example, has even criticized more "reasoned" works that question the resource wars argument (as they pertain to raw materials) as not going far enough since they still see a real possibility for environmentally induced conflicts (say, over water). According to Barnett (2000, 274), such studies have nevertheless given the ontological priority to conflict over cooperation.⁶ Albeit concentrating on the effects of resource scarcity on individual island states, Richard Matthew and Ted Gaulin (2001) also challenge the popular conflictual scenarios hypothesized in the literature, demonstrating how scarcity has actually led to cooperation.

Another important study considers the relationship between environmental cooperation and peacemaking (Conca and Dabelko 2002). The book tests the proposition that environmental cooperation may be a trigger for reducing tensions, broadening cooperation, and promoting peace on other political levels. While Ken Conca and Geoffrey Dabelko's volume considers a broader spectrum of cooperation, it goes beyond the traditional relationship linking environmental degradation and violent conflict, and tackles the issue of environmental coordination. To that extent, it is an inspiration for this particular volume.

While this volume seeks to more systematically consider the general relationship between resource scarcity, environmental degradation, and cooperation, it attempts to make another contribution to the literature.

In particular, the collective action school provides that additional rational for this book.

John Rawls has conjectured that when natural and other resources are abundant, schemes of cooperation become superfluous. Conversely, when conditions are particularly harsh, fruitful ventures break down. A situation of moderate (or relative) scarcity therefore provides a suitable impetus for action between parties (Rawls 1971, 127–128). Similarly, Elinor Ostrom and her colleagues have argued that for cooperation or successful governance to occur, “resource conditions must not have deteriorated to such an extent that the resource is useless, nor can the resource be so little used that few advantages result from organizing” (1999, 281; see also Dolšak and Ostrom 2003, 12–13). As Ted Gurr (1985, 53) concurs, “political constraints weigh heavily on what might be achieved collectively in the face of serious scarcity.”

A related association claims that when the economic burden of dealing with an environmental externality increases, the incentives to creating interstate regulations are lower (Sprinz and Vaahtoranta 1994). In turn, abatement cost functions and the general ability to alleviate degradation—say, through technological innovation—are partly hampered by the severity of the degradation and its impacts (Barbier and Homer-Dixon 1996; Homer-Dixon 1999, 108; Chasek, Downie, and Brown 2006, 205). Consequently, degradation or scarcity should not have become so severe that it is too costly to manage, thereby making international coordination less likely.

In the context of the book’s general investigation into the links between scarcity and cooperation, it is expected that cooperation may be inhibited at low and high levels of scarcity and degradation. In other words, there is less incentive to coordinate actions, since the resource is relatively plentiful or environmental harm is not believed to be serious enough. Similarly, cooperation is expected to be less likely when scarcity and degradation are at a high level, either because there is little of the resource to divide among the parties or because the environmental harm is relatively costly to manage.

Beyond Scarcity and Degradation: Additional Imperative Factors

Cooperation may be motivated by resource scarcity and environmental degradation, but it does not necessarily materialize because of these two important elements. This volume highlights a set of other factors crucial for understanding how cooperation is facilitated or mitigated. The

general desire for stable markets and prices, in the context of lucrative resources such as oil and minerals, is hypothesized to lead to interstate cooperation (Mikdashi 1976, 118; Westing 1986c, 12; Arbatov 1986, 36; Hveem 1986, 81; Chapman and Khanna 2006, 511). The overall political environment and the level of influence of domestic forces in favor of cooperation are likewise argued to be significant factors (Putnam 1988; Milner 1997, 60–64; Moravcsik 1997). Finally, differences in the countries' political systems and structures may also play a role in facilitating or inhibiting cooperation (Gleditsch 1998; Leeds 1999; Martin 2000, 26, 47).

Beyond these factors, this volume is particularly interested by the manner in which environmental problems often arise among asymmetrical players (Faure and Rubin 1993, 23; Susskind 1994, 18–19). This book thus scrutinizes the difficulties such asymmetries may pose and investigates how they are overcome so as to facilitate cooperation. While the authors of this volume identify a number of asymmetries unique to their own chapters, several issues are discernible across the majority of the cases. They are discussed below.

The Relevance of Country Asymmetries to Understanding Conflict and Cooperation

The ramifications and effects of economic asymmetries on negotiation and cooperation are commonly discussed in the environmental politics and economics literature. As Michele Botteon and Carlo Carraro (1997, 27) argue, environmental problems are often characterized by large asymmetries across countries in terms of both the benefits received and the costs accrued from, say, abating pollution. In addition, poorer countries tend to have shorter shadows of the future (or high discount rates) with regard to the resource (Dasgupta and Mäler 1994, 4–5; Fairman 1996, 69; Compte and Jehiel 1997, 63). This may exacerbate an environmental problem and make cooperation more difficult to attain (Scott 1974, 842; Ostrom 1992, 299). Such countries may have higher propensities to pollute or simply prioritize more pressing issues over environmental protection (Keohane 1996, 3–4; Barkin and Shambaugh 1999a, 13; Barkin and Shambaugh 1999b, 178; Darst 2001, 39). To that extent, we expect richer states may have to provide incentives, such as compensation, if they wish to conclude an environmental agreement and minimize defection (Young 1994, 128, 132–133; Keohane 1996, 5; Raustiala and Victor 1998, 696; Underdal 2002b, 123; Barrett 2003, 335–351). Negative incentives or inducements, such as trade restrictions, can also

be employed to offset asymmetries and encourage cooperation (Levy 1997; Barrett 2003, 310–315). Often, however, positive gestures make would-be international agreements more legitimate, contributing to their effectiveness (Connolly 1996, 334–335; Bodansky 1999, 603; Oakerson 1992, 52).

The discussion on economic asymmetries may logically relate to a more general assessment of power broadly defined. In other words, more powerful states in aggregate power terms may find themselves in a weaker position in relation to the environmental issues negotiated (Habeeb 1988; Zartman and Rubin 2000, 289). Issue-specific structural power therefore may effectively favor the otherwise-weaker state (in aggregate power terms), assuming the richer and more powerful country has a longer shadow of the future toward the environmental good in question. While, in line with hegemonic stability theory, mightier parties may be more inclined to take the lead in initiating environmental regimes, they are not necessarily able to exercise power over other states to their sole advantage. As Oran Young (1994, 135) attests, “Those countries in possession of structural power will often find that they can achieve more by using their power to make promises and offer rewards than they can by relying on threats and punishments.”

Second, the different effects of the environmental externality or natural resource scarcity on a given country may also be of particular relevance in either prolonging or mitigating the dispute. Related to the discussion on economic asymmetries, a given party may have different propensities to, for example, accept pollution. In addition, the same environmental problem may have different effects across time on the same party. The less that countries are affected by a given environmental externality, the less urgency they will have in responding to that problem in a concerted fashion with other parties, which may be more affected (Young 1989, 354). By extension, the more countries are dependent on a particular resource, the more concerned they will be with its present and future viability. The dispute thus may either take on a prolonged state, or incentives from those states more affected by the externality or dependent more on the resource may have to be forthcoming to those parties less affected by the externality or less dependent on the resource.

Third, the transboundary nature of environmental externalities makes the effects of geographic asymmetries relevant. The directionality of particular environmental problems may not only exacerbate a dispute but also affect cooperation and negotiation (Weinthal 2002, 25; Giordano 2003, 371–372). Those countries that are situated upstream or

upwind may have a strategic advantage over their neighboring states (Sprout and Sprout 1962, 366). In this instance, the externality is unidirectional (rather than reciprocal), which in general affects the downstream or downwind countries substantially more (Matthew 1999, 171). Naturally, when directionality issues are combined with the different economic characteristics of countries, several scenarios pertinent to conflict, cooperation, and bargaining power are possible in the case of both unidirectional and reciprocal externalities (Barkin and Shambaugh 1999b; Zartman and Rubin 2000, 289). Inducements and other bargaining strategies (such as compensation or issue linkage) may have to be considered in this scenario as well so as to offset inherent asymmetries and encourage cooperation.

While the asymmetries described above may have their exogenous effects on conflict, cooperation, and negotiation, they are also inextricably linked to our conception of scarcity and environmental degradation. To the extent that countries have different shadows of the future, are affected differently by the pollution or diminishing resource, and are differently situated along an environmental commons in terms of scale and space, such countries may have different conceptions of scarcity and degradation (Cooper 1989, 181). For example, since a downstream or downwind state is (all things being equal) typically more concerned with the effects of a unidirectional externality like pollution, such a state may perceive the degradation to be more serious, and the resource increasingly scarce, compared to its upstream or upwind neighbor. These nuances—that is, the lopsidedness in the interdependent relationship among parties in terms of scarcity and degradation—are also important for an exploration of the evolution of cooperation (Knorr 1975, 221–222; Keohane and Nye 1977, 9–11; Mandel 1988, 32). In other words, country asymmetries (affecting each party's perception of scarcity and degradation) make particular issues that much more “malignant” and increasingly difficult to solve (Underdal 2002a, 19).

The Chapters

Part II of the book investigates the global commons. In chapter 2, Robert Mendelsohn analyzes the case of climate change. He considers the stock of greenhouse gases in the atmosphere and the asymmetries among the respective countries as key to understanding why an optimal cooperative regime has not materialized. In chapter 3, Elizabeth DeSombre scrutinizes the case of ozone. She looks at the uncertainty that surrounded

ozone depletion, the cooperation that nonetheless ensued, and then the deepening of that cooperation as the uncertainty regarding degradation and its causes abated. The underlying asymmetries among the parties are likewise important, especially as they elicited different bargaining tactics and eventually shaped the negotiated outcome. Chapter 4, by Kristin Rosendal, explores global biodiversity cooperation. The author examines how the physical loss of biodiversity, in addition to its economic value, gave rise to the Convention on Biological Diversity in the 1990s. The evolution of environmental norms at the time of the agreement is also discussed. Asymmetries between developing and developed countries are considered paramount for understanding how the benefits from cooperation were divided among the parties. Despite a seemingly impressive treaty, implementation of the agreement has become problematic. The uncertainty in the value of biodiversity and the effective abundance of the resource, at least in the short term, may help to explain the difficulties with implementation.

Part III of the book takes a regional approach to the analysis of scarcity and environmental degradation. In chapter 5, Miranda Schreurs considers how transboundary air pollution was framed as a problem, based on its effects, in North America, Europe, and East Asia, and the timing of the policy responses that followed. She also looks at some of the obstacles that slowed down the development of regimes, particularly in East Asia, including domestic influences and country asymmetries. Chapter 6, by Gabriela Kütting, explores the case of oceans pollution in the context of the Mediterranean Action Plan. Her analysis points to the increased capacity building and scientific cooperation among the regional players as a result of the sea's degradation. Yet she describes why relatively little action has taken place on the formal policy level, in light of the transborder effects of the pollution.

Part IV is dedicated to those stock resources that are generally seen, in both the academic and popular press, to be the main cause of future wars. In chapter 7, Samuel Barkin discusses three types of outcomes given the evidence of fish stock depletion: continued degradation, conflict, or cooperation. He argues that the particular outcome is often determined by the parties' differing shadows of the future toward the resource, which in turn are made up of several other country differences and asymmetries. In chapter 8, I consider the case of freshwater, with special emphasis on transboundary rivers. I look at the relationship between scarcity and cooperation, accounting for the large corpus of documented water agreements. While keeping domestic influences

in mind, I also explore the various asymmetries that must be overcome to promote cooperation across specific property rights outcomes by analyzing specific international water agreements. Chapter 9, by Christopher Fettweis, investigates the case of oil. He studies three different regions with distinct contestation-inducing characteristics (by design, identical to those cited by Klare). In his analysis, he examines the relationship between consumer and producer states, including the behavior of great powers and regional players throughout history, assessing the costs and benefits of conflict and cooperation. Economically based incentives, in addition to other critical variables, are investigated in their relationship to cooperation. Chapter 10, by Deborah Shields and Slavko Šolar, examines the increased demand for minerals, and the overall relationship to short- and long-term scarcity, including real and perceived scarcity. Beyond sheer physical scarcity as a catalyst for conflict and cooperation, the authors consider other forms of scarcity. The authors tout additional cooperation-inducing factors such as market-, policy-, and consensus-based incentives. Chapter 11 concludes the volume by synthesizing the findings of the above chapters as they pertain to the conjectures presented. Further implications for theory and policy are also provided.

Notes

I would like to thank fellow volume contributors (and particularly Samuel Barkin) for their comments on this chapter before it was anonymously reviewed.

1. Peter Schwartz and Doug Randall (2003) discuss the possibility of climate change educing violent interstate conflict.
2. Westing actually identifies twelve incidents, but three of them are of an intra-state nature.
3. The search consisted of the subject terms “fishing and fisheries,” “mineral resources,” “mining,” “petroleum,” and “watercourses-water resources.” Additional information was provided by Andrei Kolomoets, Legal Information Officer in the Treaty Section of the Office of Legal Affairs at the United Nations.
4. The search consisted of the subject term “environment.” Other depositories of environmental agreements include Barrett (2003, 165–194) with about 290 multilateral agreements. The International Environmental Agreements Database Project out of the University of Oregon includes about 2,750 treaties. See <<http://iea.uoregon.edu/page.php?file=home.htm&query=static>> (accessed May 13, 2010).
5. For related writings, see Dokken 1997, 519–520, 533; Brock 1992, 99.
6. In this case, Barnett was specifically referring to Lipschutz and Holdren 1990.

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