

Environment and Globalization

Five Propositions

Adil Najam, David Runnalls and Mark Halle



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Introduction

The processes that we now think of as “globalization” were central to the environmental cause well before the term “globalization” came into its current usage. Global environmental concerns were born out of the recognition that ecological processes do not always respect national boundaries and that environmental problems often have impacts beyond borders; sometimes globally. Connected to this was the notion that the ability of humans to act and think at a global scale also brings with it a new dimension of global responsibility—not only to planetary resources but also to planetary fairness. These ideas were central to the defining discourse of contemporary environmentalism in the 1960s and 1970s¹ and to the concept of sustainable development that took root in the 1980s and 1990s.²

The current debate on globalization has become de-linked from its environmental roots and contexts. These links between environment and globalization need to be re-examined and recognized. To ignore these links is to misunderstand the full extent and nature of globalization and to miss out on critical opportunities to address some of the most pressing environmental challenges faced by humanity. The purpose of this paper is to explore these linkages in the context of the current discourse.

For its February 2007 meetings, the Global Ministerial Environment Forum (GMEF) of the United Nations Environment Programme (UNEP) has selected environment and globalization as one of its areas of focus. This paper has been prepared as an independent input to that process. The thrust of the paper, therefore, is on policy-relevant debates and its principal audience is environmental leaders assembling in Nairobi, Kenya, for the GMEF meetings. However, the paper aspires also to be relevant to audiences and debates beyond this meeting. We hope that the paper will inspire discussions—even if they are critical of our analysis—on the nature and importance of the links between environment and globalization. It is hoped that the discussions that will begin in Nairobi will

not end there—that these conversations will not only be carried back to national capitals, but will also be carried forward by leaders of government, international organizations, civil society and business. We hope that this paper will contribute to a more vigorous conversation on environment and globalization at Nairobi, and beyond.

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The paper has benefited tremendously from the insights and ideas of an ad hoc advisory group that met twice in Geneva (October 2006 and January 2007). These meetings were attended by the authors and researchers as well as by Hussein Abaza (Egypt), Tariq Banuri (Pakistan), Susan Brown (Australia), Tom Burke (United Kingdom), Kim Carstensen (Denmark), Marion Cheatle (United Kingdom), Dharam Ghai (Kenya), Jean-Pierre Lehmann (France), Kilaparti Ramakrishna (India/United States), Phillipe Roch (Switzerland), Laurence Tubiana (France) and Dominic Waughray (United Kingdom), all of whom inspired and shaped the ideas contained here in countless ways. In addition, this paper has also benefited from the advice and encouragement of Achim Steiner, Executive Director of UNEP. We are also grateful to Aaron Cosbey of IISD for providing very useful comments on the final draft. We are especially grateful to Mihaela Papa and Lauren K. Inouye of the Fletcher School of Law and Diplomacy, Tufts University, for their invaluable research assistance, and for their substantive and significant contributions to the ideas contained here. The paper remains a totally independent publication, and the views expressed here do not necessarily represent the official position of either the Government of Denmark or of UNEP.

The paper is divided into three sections. Following the introduction, we outline the nature of the linkages between environment and globalization, especially highlighting the fact that these are two-way linkages: not only can the processes of globalization impact the environment, but the dynamics of the environment can also impact and shape the nature of globalization. The next section, which is the bulk of the paper, begins exploring these linkages through the lens of five “propositions” that seek to highlight those elements that are particularly prescient for policy-making and policy-makers. The propositions do not seek to cover every aspect of the environment and globalization problematique. They are, instead, designed to highlight specific aspects of the relationship that are of particular salience in realizing key environment and globalization goals. The last section posits a set of suggested avenues for action on environment and globalization. This section is organized around the notion that better global governance is the key to managing both globalization and the global environment.

Environment and Globalization: Understanding the Linkages

Although the contemporary debate on globalization has been contentious, it has not always been useful. No one doubts that some very significant global processes—economic, social, cultural, political and environmental—are underway and that they affect (nearly) everyone and (nearly) everything. Yet, there is no agreement on exactly how to define this thing we call “globalization,” nor on exactly which parts of it are good or bad, and for whom. For the most part, a polarized view of globalization, its potential and its pitfalls has taken hold of the public imagination. It has often been projected either as a panacea for all the ills of the world or as their primary cause. The discussion on the links between environment and globalization has been similarly stuck in a quagmire of many unjustified expectations and fears about the connections between these two domains.

Box 1. Defining globalization.

What is Globalization?

There are nearly as many definitions of globalization as authors who write on the subject. One review, by Scholte, provides a classification of at least five broad sets of definitions:⁴

Globalization as internationalization. The “global” in globalization is viewed “as simply another adjective to describe cross-border relations between countries.” It describes the growth in international exchange and interdependence.

Globalization as liberalization. Removing government-imposed restrictions on movements between countries.

Globalization as universalization. Process of spreading ideas and experiences to people at all corners of the earth so that

aspirations and experiences around the world become harmonized.

Globalization as westernization or modernization. The social structures of modernity (capitalism, industrialism, etc.) are spread the world over, destroying cultures and local self-determination in the process.

Globalization as deterritorialization. Process of the “reconfiguration of geography, so that social space is no longer wholly mapped in terms of territorial places, territorial distances and territorial borders.”

Although the debates on the definition and importance of globalization have been vigorous over time, we believe that the truly relevant policy questions today are about who benefits and who does not; how the benefits and the costs of these processes can be shared fairly; how the opportunities can be maximized by all; and how the risks can be minimized.

In addressing these questions, one can understand globalization to be a complex set of dynamics offering many opportunities to better the human condition, but also involving significant potential threats. Contemporary globalization manifests itself in various ways, three of which are of particular relevance to policy-makers. They also comprise significant environmental opportunities and risks.

1. **Globalization of the economy.** The world economy globalizes as national economies integrate into the international economy through trade; foreign direct investment; short-term capital flows; international movement of workers and people in general; and flows of technology.⁵ This has created new opportunities for many; but not for all. It has also placed pressures on the global environment and on natural resources, straining the capacity of the environment to sustain itself and exposing human dependence on our environment.⁶ A globalized economy can also produce globalized externalities and enhance global inequities.⁷ Local environmental and economic decisions can

contribute to global solutions and prosperity, but the environmental costs, as well as the economic ramifications of our actions, can be externalized to places and people who are so far away as to seem invisible.

2. **Globalization of knowledge.** As economies open up, more people become involved in the processes of knowledge integration and the deepening of non-market connections, including flows of information, culture, ideology and technology.⁸ New technologies can solve old problems, but they can also create new ones. Technologies of environmental care can move across boundaries quicker, but so can technologies of environmental extraction. Information flows can connect workers and citizens

Environmentalism as a norm has become truly global, but so has mass consumerism.

across boundaries and oceans (e.g., the rise of global social movements as well as of outsourcing), but they can also threaten social and economic networks at the local level. Environmentalism as a norm has become truly global, but so has mass consumerism.

3. **Globalization of governance.** Globalization places great stress on existing patterns of global governance with the shrinking of both time and space; the expanding role of non-state actors; and the increasingly complex inter-state interactions.⁹ The global nature of the environment demands global environmental governance, and indeed a worldwide infrastructure of international agreements and institutions has emerged and continues to grow.¹⁰ But many of today's global environmental problems have outgrown the governance systems designed to solve them.¹¹ Many of these institutions, however, struggle as they have to respond to an ever-increasing set of global challenges while remaining constrained by institutional design principles inherited from an earlier, more state-centric world.

The relationship between the environment and globalization—although often overlooked—is critical to both domains.¹² The environment itself is inherently global, with life-sustaining ecosystems and watersheds frequently crossing national boundaries; air pollution moving across entire continents and oceans; and a single

shared atmosphere providing climate protection and shielding us from harsh UV rays. Monitoring and responding to environmental issues frequently provokes a need for coordinated global or regional governance. Moreover, the environment is intrinsically linked to economic development, providing natural resources that fuel growth and ecosystem services that underpin both life and livelihoods. Indeed, at least one author suggests that “the economy is a wholly-owned subsidiary of the ecology.”¹³

While the importance of the relationship between globalization and the environment is obvious, our understanding of how these twin dynamics interact remains weak. Much of the literature on globalization and the environment is vague (discussing generalities); myopic (focused disproportionately only on trade-related connections); and/or partial (highlighting the impacts of globalization on the environment, but not the other way around).

It is important to highlight that not only does globalization impact the environment, but the environment impacts the pace, direction and quality of globalization. At the very least, this happens because environmental resources provide the fuel for economic globalization, but also because our social and policy responses to global environmental challenges constrain and influence the context in which globalization happens. This happens, for example, through the governance structures we establish and through the constellation of stakeholders and stakeholder interests that construct key policy debates. It also happens through the transfer of social norms, aspirations and ideas that criss-cross the globe to formulate extant and emergent social movements, including global environmentalism.

In short, not only are the environment and globalization intrinsically linked, they are so deeply welded together that we simply cannot address the global environmental challenges facing us unless we are able to understand and harness the dynamics of globalization that influ-

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ence them. By the same token, those who wish to capitalize on the potential of globalization will not be able to do so unless they are able to understand and address the great environmental challenges of our time, which are part of the context within which globalization takes place.

Table 1. Environment and globalization: some examples of interaction.

How does globalization affect the environment?	Means of influence	How does environment affect globalization?
<ul style="list-style-type: none"> - <i>Scale</i> and composition of economic activity changes, and consumption increases, allowing for more widely dispersed externalities. - <i>Income</i> increases, creating more resources for environmental protection. - <i>Techniques</i> change as technologies are able to extract more from nature but can also become cleaner. 	<p>Economy</p>	<ul style="list-style-type: none"> - Natural <i>resource scarcity or/and abundance</i> are drivers of globalization, as they incite supply and demand forces in global markets. - The need for <i>environmental amelioration</i> can extract costs from economy and siphon resources away from development goals.
<ul style="list-style-type: none"> - Global interactions <i>facilitate exchange of environmental knowledge and best practices</i>. - <i>Environmental consciousness</i> increases with emergence of global environmental networks and civil society movements. - Globalization facilitates the spread of existing <i>technologies</i> and the emergence of new technologies, often replacing existing technologies with more extractive alternatives; greener technologies may also be spurred. - Globalization helps spread a homogenization of <i>consumption-driven aspirations</i>. 	<p>Knowledge</p>	<ul style="list-style-type: none"> - Signals of environmental stress travel fast in a compressed world, <i>environmentally degraded and unsustainable locations</i> become marginalized from trade, investment, etc. - Sensibilities born out of environmental stress can push towards <i>localization</i> and <i>non-consumptive development</i> in retaliation to the thrust of globalization. - Environmental stress can trigger alternative technological paths, e.g., dematerialization, alternative energy, etc., which may not have otherwise emerged. - Environmentalism becomes a global <i>norm</i>.

How does globalization affect the environment?	Means of influence	How does environment affect globalization?
<ul style="list-style-type: none"> - Globalization makes it increasingly difficult for states to rely only on <i>national regulation</i> to ensure the well-being of their citizens and their environment. - There is a <i>growing demand and need for global regulation</i>, especially for the means to enforce existing agreements and build upon their synergies to improve environmental performance. - Globalization facilitates the involvement of a growing <i>diversity of participants and their coalitions</i> in addressing environmental threats, including market and civil society actors. 	<p>Governance</p>	<ul style="list-style-type: none"> - Environmental standards <i>influence patterns of trade and investment</i> nationally and internationally. - The nature of environmental challenges requires the incorporation of environmental governance into other areas (e.g., trade, investment, health, labour, etc.). - Stakeholder participation in <i>global environmental governance</i>—especially the participation of NGOs and civil society—has become a model for other areas of global governance.

The dominant discourse on globalization has tended to highlight the promise of economic opportunity. On the other hand, there is a parallel global discourse on environmental responsibility. A more nuanced understanding needs to be developed—one that seeks to actualize the global opportunities offered by globalization while fulfilling global ecological responsibilities and advancing equity. Such an understanding would, in fact, make sustainable development a goal of globalization, rather than a victim. As a contribution towards this more nuanced understanding of these two dynamics, we will now outline five propositions related to how environment and globalization are linked and how they are likely to interact.

The Five Propositions

By way of exploring the linkages between environment and globalization, let us posit five key propositions on how these two areas are linked, with a special focus on those linkages that are particularly pertinent for policy-making and policy-makers. The purpose of these propositions is to highlight the possible implications of the dominant trends. This is neither an exhaustive list nor a set of predictions. It is rather an identification of the five important trajectories which are of particular importance to policy-makers because (a) these are areas that have a direct bearing on national and international policy and, (b) importantly, they *can* be influenced by national and international policy.

PROPOSITION #1:

The rapid acceleration in global economic activity and our dramatically increased demands for critical, finite natural resources undermine our pursuit of continued economic prosperity.

The premise of this proposition is that a sound environment is essential to realizing the full potential of globalization. Conversely, the absence of a sound environment can significantly undermine the promise of economic prosperity through globalization.

The notion that rising pressures on, and dwindling stocks of, critical natural resources can dramatically restrain the motors of economic growth is not new.¹⁴ What is new, however, is the realization that the spectacular economic expansion we have been seeing has made the resource crunch a pressing reality that could easily become the single biggest challenge to continued economic prosperity.

The premise of the proposition is fairly simple. First, natural resources—oil, timber, metals, etc.—are the raw materials behind much of global economic growth. Second, there is ultimately a finite

amount of these resources available for human use. Third, and importantly, the quantum of resources being used has grown exponentially in recent years, especially with the spectacular economic expansion of large developing economies—such as India and China—and increasing global prosperity. Fourth, we are already witnessing increasing global competition for such resources; and not just market, but geopolitical forces are being mobilized to ensure continued supplies and controls over critical resources.¹⁵

Add these facts together and you arrive at a realization that sooner rather than later the degradation of ecological processes—especially fragile ecological systems that are central to the preservation of our essential life systems—could cause a major hiccup in continued global economic growth, and possibly become the single most important threat to the continuation of current globalization trajectories.¹⁶ The dynamic is not new, but it has suddenly become more real and more immediate. Growth, of course, is a paradox in the context of sustainable development.¹⁷ We need growth in order to meet the needs of people, especially the poorest among us; but permanent global growth is impossible in a finite system. Studies demonstrate that we already exceed the productive capacity of nature by 25¹⁸ to 30 per cent,¹⁹ and that 60 per cent²⁰ of the ecosystems are currently overused.

Although scares about “limits to growth”²¹ have proved less than credible in the past, simple economic logic (and available trends) argues that, as competition for scarce natural resources increases, prices will be driven up—and sooner than we might have assumed. In the past, technology has—and in the future, it certainly could—help to alleviate some of these pressures by developing new solutions and by more widely deploying existing technological solutions. However, the prospects of higher demand, growing prices and dwindling stocks are already propelling new races for control over key resources. The race is now on not just for oil, but for metals, minerals, timber and even for recyclable waste.²² For many developing countries endowed with critical resources in high demand, this provides an opportunity to harness the power of globalization and pull themselves out of poverty. Past experience suggests that national and global economies have not been particularly good at

allowing for the benefits of resources to flow down to the poor;²³ the challenge today is to find the ways and means to do exactly that.

A parallel challenge is to decrease the adverse effects of resource competition on the poor.²⁴ For example, “fish prices are expected to rise, reducing the availability and affordability of fish for low-income families in developing countries.”²⁵ In areas like the Mekong River basin in Southeast Asia, where 50 million people depend on fish for their food and their livelihoods,²⁶ poor families will lose food security while the wealthy, both domestically and globally, bid up the price of food the poor cannot afford. Populations dependent on the extraction or exploitation of natural resources, or on natural systems and ecosystem services, could lose their livelihoods as local sources are depleted (fisheries, forests, etc.) or degraded (soil fertility for agriculture) and will need assistance to make the transition to alternative employment.

While market mechanisms and technology could possibly assist in handling increasing resource competition, they offer no solutions for running out of ecosystem services.²⁷ This is a critical threat to the continuation of current globalization trajectories and the preservation of our lives on the planet. Many critical ecosystem services—including watershed filtration, soil fertility and climate stability—are un-valued (or *under-valued*) and, therefore, as these ecological services are threatened, there are no market signals that would spur technological development of alternative supplies. More importantly, we do not have the technological ability to create substitutes for ecological services at the volume or at the costs that would be needed.

Environmental degradation could also impact productivity through damages to health. For example, international agencies found that

Ignoring environmental costs destroys value.

2.5 million people in the Asia-Pacific region die every year due to environmental problems including air pollution, unsafe water and poor sanitation.²⁸ Ignoring environmental costs destroys value. The “natural capital” of ecosystem services (such as watersheds, which provide clean water) is drawn down, creating a need to pay for services (like water filtra-

tion plants) that could have been provided for free, in perpetuity, if sustainably managed.²⁹ Similarly, environmental degradation, global and local, will affect the agricultural sector, on which the majority of the world's poor depend directly for their survival. For example, recent data suggest that global climate change could reduce South Asia's wheat area by half.³⁰ While gains in productivity in temperate areas could partially offset the difference, whether poorer tropical countries could afford to buy food from richer regions of the world is uncertain. To avoid famine, the Consultative Group on International Agricultural Research has already called for accelerated efforts to develop drought-, heat- and flood-resistant strains of staple crops.³¹ The Worldwatch Institute estimates that 17 per cent of cropland in China, and a staggering 28 per cent in India, is seriously degraded by erosion, water-logging, desertification and other forms of degradation.³²

It is most likely, therefore, that decreased environmental stability will create more hostile conditions for economic growth and also place new pressures on international cooperation. Two recent reports have documented and drawn global attention to this discussed "possibility," which has

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started to become a reality. On one hand, the *Millennium Ecosystem Assessment*³³ has meticulously documented the slide in the environmental health of the planet and how we are pushing the limits of many critical resources. The recent rise in oil prices has had the effect of making this connection tangible and recognizable even to ordinary citizens. On the other hand, the recently released *Stern Review*³⁴ has bluntly suggested that these environmental pressures have now begun impacting global economic processes and that impacts of climate change could create losses of 5–10 per cent of global GDP, and decrease welfare by up to 20 per cent if damages include non-market impacts and are weighted for ethical/distribution effects. This calculation includes estimations of damages caused by flooding, lower crop yields, extreme weather-related damages, and other direct impacts on the environment and human health.

Together, and in the context of galloping economic growth in Asia and elsewhere, these and other such findings suggest that mounting environmental degradation could impose very significant costs on globalization and economic growth. But they also hold the promise that an improved environment is central to human well-being in ecological as well as in economic terms.

PROPOSITION #2:

The linked processes of globalization and environmental degradation pose new security threats to an already insecure world. They impact the vulnerability of ecosystems and societies, and the least resilient ecosystems. The livelihoods of the poorest communities are most at risk.

With globalization, when insecurity increases and violence erupts, the ramifications become global in reach. The forces of globalization, when coupled with those of environmental degradation, expand concepts of threat and security, both individually and through their connections. We have already begun recognizing new global threats from non-state groups and individuals, and security is now being defined more broadly to include, among other, wars between and within states; transnational organized crime; internal displacements and migration; nuclear and other weapons; poverty; infectious disease; and environmental degradation.³⁵

To take one pressing example, the World Resources Institute (WRI) reports that:³⁶

Water scarcity is already a major problem for the world's poor, and changes in rainfall and temperature associated with climate change will likely make this worse. Even without climate change, the number of people affected by water scarcity is projected to increase from 1.7 billion today to 5 billion by 2025.³⁷ In addition, crop yields are expected to decline in most tropical and sub-tropical regions as rainfall and temperature patterns change with a changing climate.³⁸ A recent report by the Food

and Agriculture Organization estimates that developing nations may experience an 11 per cent decrease in lands suitable for rain-fed agriculture by 2080 due to climate change.³⁹ There is also some evidence that disease vectors such as malaria-bearing mosquitoes will spread more widely.⁴⁰ At the same time, global warming may bring an increase in severe weather events like cyclones and torrential rains.

All of this imperils human security, which in turn drives societal insecurity and, in many cases, violence. Placed in the context of globalization, violence and insecurity can spill out since now they can travel further, just as people, goods and services can.

Security is about protecting people from critical and pervasive threats.⁴¹ This ranges from the security of nations to that of individuals and of societies. Human security is about creating systems that give individuals and communities the building blocks to live with dignity. Livelihoods are, therefore, an essential element of human security. Acting together, globalization and environmental stress may directly threaten the livelihoods of the poor, i.e., the capabilities, material and social assets and activities required for a means of living, and decrease their ability to cope with, and recover from, environmental stresses and shocks.

For “winners” of the process, globalization becomes an integrating phenomenon—one that brings together markets, ideas, individuals, goods, services and communications. For the “losers” in the process, however, it can be a marginalizing phenomenon.⁴² Just as the winners come closer to each other they become more “distant” from the losers. The dependence within society on each other becomes diminished as trans-

boundary dependence increases. To use a basic example, as West African consumers develop a liking for imported rice, their “links” to farmers on other continents who export rice to them increase

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even as their “links” to farmers in their own country growing cassava decrease. Environmental stress can have a similarly marginalizing impact on the vulnerable and the weak. It is quite clear from the evidence now that even though climate change will eventually impact

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and vulnerable are
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everyone, it will impact the poorest communities first and hardest. In the case of desertification, we already see the poorest and most vulnerable communities being displaced the most.⁴³ In essence, the already insecure and vulnerable are pushed to greater depths of insecurity and vulnerability.

The combined effects of globalization-related marginalization and environment-related marginalization can wreak havoc on whatever resilience poor communities might otherwise have possessed. An illustrative example is the case of small fishers in the Caribbean.⁴⁴ On one hand, globalization forces of advanced extraction technologies, reduced transportation costs, increased ability to keep fish-stock fresh over long distances and increasing global demands from far-away markets combine to drive the small fisher out of the market. On the other, the very same forces dramatically decrease the amount of fish in the ocean, thereby further reducing the resilience of the small fisher. As globalization changes the patterns of environmental dependence, it may marginalize parts of Caribbean society and disintegrate local security networks.

In many ways, climate change is the ultimate threat to global security because it can existentially threaten security at every level from the individual to the planetary.⁴⁵ In a world where one-quarter of the people in developing countries (1.3 billion) already survive on fragile lands,⁴⁶ and where approximately 60 per cent of ecosystem services examined are being degraded or used unsustainably, including freshwater; capture fisheries; air and water purification; and climate regulation,⁴⁷ the implications of global climate change are becoming evident among the already vulnerable. For example, impacts of climate change on Inuit livelihoods have been recorded; evacuations of low-lying coastal populations, such as Vanuatu's, have begun; and more dramatic adaptation and survival challenges

in vulnerable states such as Bangladesh are expected. Climate change-related sea level rise and agricultural disruption could cause 150 million environmental refugees in the year 2050 which could exacerbate insecurity in host countries and regionally.⁴⁸ The death of low-lying coastal states and changes in their economic zones and maritime boundaries may cause further instability.

Three key security challenges in the context of climate change are water scarcity, food shortages and disrupted access to strategic minerals such as oil. Historically, these have been the cause of violence and war. International experience with the linkage between natural resources and conflict calls for resolute action as natural resources can fuel and motivate violent conflict (e.g., conflict diamonds funding rebel groups in Angola and Sierra Leone; conflicts over distribution of resource profits from timber and natural gas in Indonesia; oil as key factor in Iraqi invasion of Kuwait).⁴⁹ Environmental stress unleashed by potential climate change could trigger international migration and, possibly, civil wars. In fragile circumstances, environmental stress could act as an additional destabilizing factor exacerbating conflict as it combines with other political and social factors.

Conditions of insecurity and conflict impose high costs on the pursuit of sustainable development just as they impose hurdles in the way of globalization.⁵⁰ Both processes require a measure of stability without which only survival considerations will be pursued. Conflict sets back the prospects for sustainable development, often by decades, by setting in motion a negative spiral—environmental degradation leads to more competition for scarce resources, leading the powerful to secure the resources for their use, leading to conflict, which leads to worsened social relations, smash-and-grab resource use, greater resentment, etc. Security—from national to human—is, therefore, a prerequisite for realizing the benefits of sustainable development as well as those of globalization.

Conditions of insecurity and conflict impose high costs on the pursuit of sustainable development just as they impose hurdles in the way of globalization.

PROPOSITION #3:

The newly prosperous and the established wealthy will have to come to terms with the limitations of the ecological space in which both must operate, and also with the needs and rights of those who have not been as lucky.

Consider the following:

- Emerging economies now dominate and drive global growth.⁵¹ Last year their combined output accounted for more than half of total world GDP.
- China has become a major importer of just about all natural resources. It is now also the world's largest importer of recyclable waste material.⁵²
- "About 700,000 Chinese tourists visited France last year and the number is climbing annually. By 2020, the World Tourism Organization estimates, 100 million Chinese will make foreign trips each year."⁵³
- Mittal Steel, a company born in India, with its recent hostile takeover of Arcelor, is now the world's largest and most global steel company.⁵⁴ While the company's financial headquarters is in Europe, much of the company's growth has been in emerging markets—India and China, but also Latin America and elsewhere in Asia.
- "By one calculation, there are now more than 1.7 billion members of 'the consumer class'—nearly half of them in the developing world. A lifestyle and culture that became common in Europe, North America, Japan and a few other pockets of the world in the twentieth century is going global in the twenty-first."⁵⁵ "China and India alone claim more than 20 per cent of the global [consumer class] total—with a combined consumer class of 362 million, more than in all of Western Europe."⁵⁶

The point of the above is that the key decisions that will affect—and are already affecting—the trajectories of globalization as well as

environmental processes are no longer solely Northern. They are increasingly coming from a few large developing countries, especially China and India, but also a handful of other large developing countries. A palpable excitement accompanies this dramatic rise, but there are challenges as well as opportunities.

The dramatic growth in these new economies has forced them to think about the management of that growth, including its environmental dimensions. In many cases, they are doing so on their own terms and in the context of their own specific realities. China, for example, has embarked on substantial environmental programs. Some immediate programs are fueled by the upcoming Olympic Games to be held in China,⁵⁷ but many are much longer-term initiatives that emerge from an explicit realization by China that the costs of environmental degradation are a major strain on the country's prospects for continued prosperity, and threaten to affect its standing in the world.

The rapid rise of this set of erstwhile developing countries should also trigger reflection within established industrialized economies on the questions of growth and consumption. It is not viable—nor was it ever—to urge consumption restraint on the newly prosperous while continuing on paths of high consumption oneself. While the question of consumption will be discussed more specifically later, the point to be made here is that the newly prosperous as well as those who have been affluent for much longer will now have to come to terms with the limitations of the ecological space in which both must operate and also with the needs and rights of those who have not been as lucky.

The interaction of globalization and environment are writ large in the new realities unleashed by the focus of global possibilities in terms of both processes moving southwards. For example, it is popular to say that “China is the workshop to the world”;⁵⁸ but it is also worth asking “who is the customer of this workshop's products?” and “who are the suppliers to the workshop?” Of course, China is used here as a metaphor because it is the most dominant example of a host of rapidly developing countries providing manufacturing to the whole world, industrialized as well as developing. But to the extent that China (and some other countries) have emerged as the

new “workshop” of the world, the suppliers to this workshop are the still poor raw material-based economies in Asia, Africa and Latin America; and the customers of the products from this workshop are the populations in the North and within the affluent pockets in the South. To consider the “workshop” metaphor seriously requires placing the “workshop” within a supply chain that is (a) truly global in nature, and (b) not just an economic supply chain, but an environmental one.

None of the above, however, must distract our attention from the fact that countries that industrialized earlier—in North America, Europe and East Asia/Oceania—are still major movers of globalization and environmental processes⁵⁹ and have long-standing and continuing responsibilities in this regard. Many of the most pressing environmental problems that the world faces today are not caused by developing countries and, in fact, belong to a different industrialization era. The rise, and the scale of the rise, of new emerging economies in Asia should be a moment of reflection for the “old” rich countries about their own consumption and resource-use patterns. The ecological space for the North is constricting and societies that continue on the path of highly consumptive growth themselves have no right or standing to ask the “new” rich to restrain their appetites. Certainly not until they themselves have done so.

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At the same time, today it does mean that emerging economies at least have the opportunity to shape the future in ways that they did not have before. They could choose to follow distinct and different paths of their own that stem from their own particular developmental conditions as well as an understanding of today’s world. In

essence, they have an opportunity—and hopefully the motivation—to bend the curve⁶⁰ in ways that “old” industrialization did not or could not.

China, for example, is a particularly interesting and important example of the opportunities for paradigm shifts that might emerge from this shift in the global centre of gravity. Not only is China a

major importer of just about all natural resources (and so it will remain), it is emerging as a new hub of recycling.⁶¹ China—and, increasingly, India—lie at the cusp of a new set of challenges and opportunities. They seem aware of the opportunity they have to do things differently from countries that industrialized earlier and under different circumstances. The most pressing global environmental problems that the world faces today are not of their making; but they have a real opportunity to undo these problems by “bending” the proverbial curve that expresses the relationship between growth and environmental degradation. The question is whether these emerging economies of the South will have the foresight to embrace the opportunity and to chart a development path that is different from that which had been followed by those who came before them, and whether the “old” affluent economies of the North will demonstrate a shared commitment to assist the developing world in charting such a path and by demonstrably taking the lead in curtailing their own unsustainable patterns.⁶²

China—and, increasingly, India—lie at the cusp of a new set of challenges and opportunities.

PROPOSITION #4:

Consumption—in both North and South—will define the future of globalization as well as the global environment.

To put this proposition most bluntly, the central challenge to the future of environment and globalization is consumption, not growth. Fueled by the aspirational “norms” of consumption⁶³ that also become globalized through, in part, the global media and advertising, consumption changes magnify the footprints of growth. For example, while global population doubled between 1950 and 2004, global wood use more than doubled, global water use roughly tripled, and consumption of coal, oil, and natural gas increased nearly five times.⁶⁴

A focus on consumption immediately draws our attention to the challenge of inequity. That challenge cannot be brushed aside. A simple but powerful illustration suggests that on average, in 2000, one American consumed as much energy as 2.1 Germans, 12.1 Colombians, 28.9 Indians, 127 Haitians or 395 Ethiopians.⁶⁵ These numbers are, of course, stylized but they do help make the point that we live in a massively unequal world and that these inequities are central to the future of globalization as well as the environment. Also, one should note that national averages hide massive consumption inequity within nearly all societies. The very affluent within developing countries over-consume just as the poor within affluent countries under-consume.

The scope of the challenge is highlighted by the *2006 Living Planet Report*⁶⁶ which points out that, based on current projections, humanity will be using two planets' worth of natural resources by 2050—if those resources have not run out by then. Humanity's ecological footprint—the demand people place upon the natural world—has increased to the point where the Earth is unable to keep up in the struggle to regenerate. The key to resolving this challenge is to de-link consumption from growth, and growth from development:⁶⁷ to provide the poor with the opportunity to increase their use of resources even as the affluent reduce their share so that a sustainable level and global equity can be achieved.⁶⁸

Technology is one key element in meeting this challenge. The policy decisions we now take that will influence future trajectories of technology development and deployment—and of consumption choices—will shape the interaction between globalization and the global environment. The good news is that these trajectories *can* be shaped by policy. Technology has been one of the great drivers of modern globalization.⁶⁹ It has also become one of the principal drivers of environmental processes. Transport technologies, for example, have not only made the world a smaller and more “global” planet, they have also resulted in new environmental stress, especially through increased atmospheric carbon concentrations. Technology has sped up prosperity for many, but it has also allowed extraction of resources—fish, timber, metals, minerals, etc.—at unprecedented rates, thereby placing new and massive pressures on stocks.

At the same time, technological advances have allowed, in some areas, reduced environmental stress. Evidence suggests, for example, that China's economic growth has come with a relatively lesser increase in emissions than what had happened earlier in Europe and North America because China has been able to "leapfrog" to technologies that are much cleaner than Europe and North America were using at similar stages in their development. Although its emission rates per GDP are still high, they are decreasing and have been halved in the last decade.⁷⁰ For example, their fuel economy standards are higher than those of the United States.⁷¹

Technological solutions will inevitably determine the future of globalization as well as the global environment. But they will do so within the context of global consumption demands. Technology cannot change the demands or help us satisfy all of them but it can, through globalization, help meet these demands in a more planet-friendly way.

Automobiles, in fact, are an interesting area of interplay between technological advances and consumption growth. Although the far greater number of automobiles more than makes up for these advances, the fact is that the automobile today is many orders of magnitude cleaner in environmental terms than automobiles were 30 or 40 years ago. The promise of technology also lies in the fact that, even with existing knowledge, we have the ability to make automobiles an order of magnitude cleaner than they are today. The point, of course, is that technology does not operate in a vacuum. In particular, it cannot be understood outside of the context of consumption.⁷²

Ultimately, the trajectories of the future—as well as the technologies available—will be shaped by our aspirations of what a "good life" really is.⁷³ The moral and spiritual dimension of planetary aspirations may not seem like an appropriate subject for policy discussions, but it lies at the very heart of the type of global society that we want to live in and the type of global society that we are constructing. Not only are policy discussions impacted by aspirational decisions of society,

Ultimately, the trajectories of the future—as well as the technologies available—will be shaped by our aspirations of what a "good life" really is.

they can in fact shape these aspirations. The Brundtland Report⁷⁴ released 20 years ago was very much an attempt to shape global aspirations on environment as well as what we now call globalization. Agenda 21, which emerged from the Rio Earth Summit 15 years ago, was another such attempt.⁷⁵ Since then, an array of other influential ideas have come from governments, civil society and business. For example, concepts of “natural capitalism,” industrial ecology, eco-efficiency, “Factor Ten” efficiency improvements, and “Global Transitions” have been proposed and some have gained currency in civic discourse, business strategy and government policy.⁷⁶

The European Union has launched an initiative that aims to “reduce the negative environmental impacts generated by the use of natural resources in a growing economy;” decoupling growth and environmental impact.⁷⁷ Similarly, the U.K. has

In short, key actors have begun to recognize—and some to implement—the notion that ultimately consumption will have to be constrained.

signalled a shift towards a “One Planet Economy,” with the launch of the government’s new U.K. Sustainable Development Framework.⁷⁸ Sweden has pledged to become the first “oil-free nation” by 2020 by switching to alternative fuels.⁷⁹ In short, key actors have begun to recognize—and some to implement—the notion that ultimately consumption will have to be constrained.

The purpose of this proposition, therefore, is not simply to say that consumption is the key to understanding globalization and the environment. It is to propose that de-linking consumption from growth, and growth from development is possible. That the promise of sustainable development is—or can be—an honest promise; honestly kept. It is also to suggest that policy interventions are necessary to make this transition and to offer the hope that slowly—albeit too slowly—this realization is coming to be accepted by decision-makers. The challenge, of course, is whether this slow realization will be able to trigger the much larger change in global consumption trajectories before it is too late.

PROPOSITION #5:

***C*oncerns about the global market and global environment will become even more intertwined and each will become increasingly dependent on the other.**

Although still unrecognized by many, it is nonetheless a fact that a large proportion of existing global environmental policy is, in fact, based on creating, regulating and managing markets. The most obvious examples are direct trade-related instruments like the Convention on International Trade in Endangered Species of wild fauna and flora (CITES) or the Basel Convention on Trade in Hazardous Waste. But even less obvious instruments such as the Climate Convention (especially through its emission trading provisions) or the Biodiversity Convention (through, for example, the Cartagena Protocol on living modified organisms) operate within created or existing marketplaces and markets are a central element of their design and implementation.

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For their part, the managers of market interactions—most prominently in the area of international trade, but also in investment, subsidies, etc.—have also belatedly come to the conclusion that they cannot divorce market policies from environmental policy for long. To take international trade as an example, we see that a significant part of international trade is in environment-related goods—ranging from trade in resources such as timber or fish to flowers and species, and much more. Moreover, trade in just about all goods has environmental relevance in the manufacture, transport, disposal and use of those goods. The Preamble to the Marrakech Agreements establishing the World Trade Organization (WTO) recognizes this clearly. And following its lead, the Doha Round of WTO negotiations has also acknowledged this intrinsic connection by placing environment squarely on the trade negotiation agenda.⁸⁰ Although those negotiations are currently stalled, the principle of the inclu-

sion of environmental concerns on the trade agenda is no longer in question and is not in doubt.

Importantly, there is a synergy in the stated goals of the trade and the environment system. Both claim to work in the context of, and for the attainment of, sustainable development.⁸¹ Given that international trade is a principal motor of globalization, one can argue that sustainable development should be considered an ultimate goal of globalization, just as it is the stated end-goal of the international trading system.

This integration of environment into trade policy and trade into environmental policy will only intensify.

This integration of environment into trade policy and trade into environmental policy will only intensify. The hope, of course, is that not only the two policy issues, but also the two policy arenas, will interact more than they have to date; that each will recognize that they share the meta-goal of sustainable development; and that both will seek to reach that goal

through collaboration. One must start, therefore, with the acceptance that policies that impact markets go beyond the WTO (e.g., supply chains, regional and bilateral arrangements, etc.) just as policies that impact the environment go beyond UNEP (e.g., national and local initiatives, private sector and civil society initiatives, etc.). Our concern here, therefore, is larger than to the future of WTO and UNEP; it is how environmental and market dynamics interact to reap the potential of globalization and environmental improvement.

One interesting example of how the interactions between markets and environment may play out beyond international trade is in the area of electronic waste.⁸² The manufacture of electronic equipment is one of the world's fastest growing industries. Yet, with the proliferation of such equipment also comes the growing environmental challenge of proper management of the equipment at the end of its useful life. As technology advances and the demands by consumers for new and advanced equipment soar, proper management of the waste will be of paramount importance. In 2004 alone, about 315 million personal computers became obsolete.⁸³ Despite

efforts by many countries to tighten control over acceptable disposal methods, adopt processes to recover valuable constituents and use safe practices to deal with the hazardous constituents in e-wastes (e.g., cadmium, lead, beryllium, CFCs, brominated flame retardants, mercury, nickel and certain organic compounds), many difficulties lie ahead.

One interesting sub-component of this is the trade in refurbished mobile phones. Phones that are used and discarded in advanced industrialized countries (and some fast-industrializing developing countries) end up in poorer countries where they are refurbished and resold, soon to become useless and electronic-waste. By this time, however, there are few options for proper disposal and few affordable opportunities to return items to the original producer. Resolving this growing problem will require us to think outside of the confined boxes of “markets” and “environment.” For example, a mechanism could be established to fund the buy-back of mobile phone waste in developing countries wherein the funds are collected from producing companies (based on their average cost of buy-back) and donors. The collection itself could be done by the same small entrepreneur who sells used phones, thereby contributing to livelihood, with the network of collection and compensation managed with civil society assistance, since they have far better access to local markets and entrepreneurs than large multinationals. Such a mechanism illustrates how a creative and integrated approach and the inclusion of relevant market actors can bring the benefits of global markets to the poorest communities in ways that are beneficial to the environment and lead to the shared goal of sustainable development.

Looking at the larger picture, one does begin to see the emerging recognition of the need for better integration among the key players. On the trade side, for example, the Doha Declaration and its reaffirmation of sustainable development as the meta-goal of global trade policy was a manifestation of this recognition. Soon afterwards, the World Summit on Sustainable Development (WSSD) of 2002 also reaffirmed the centrality of the trade and environment connections in its Declaration and all its deliberations. However, the move from the declaratory to the regulatory remains mired in insti-

tutional challenges since our systems of global governance have been designed to keep the two issues apart rather than to inspire collaboration for the achievement of common goals.⁸⁴

The central point of this proposition, then, is that even though the reality of the global marketplace and the global environment are intrinsically intertwined and becoming ever more so—through the mechanisms of international trade; manifestations of environmental stress; the changes in peoples' livelihoods; and the actions of business and civil society—the processes of decision-making in these two areas are still far apart and only occasionally interact. The good news is that recent developments have nudged policy-makers in the two areas to talk to each other just a little bit more. To be meaningful, however, this nudge must soon convert into a real push and the stated common goal of sustainable development should become a central driver of coordinated policies.

Avenues for Action: What Can We Do?

Better global governance is the key to managing both globalization and the global environment. More importantly, it is also the key to managing the relationship between the two. The processes of environment and globalization are sweepingly broad, sometimes overwhelming, but they are not immune to policy influence. Indeed, the processes as we know them have been shaped by the policies that we have—or have not—put in place in the past. Equally, the direction that globalization, the global environment and the interaction of the two will take in the years to come will be shaped by the policy decisions of the future. Governance, therefore, is the key avenue for action by decision-makers today.

However, it is also quite clear that both globalization and environment challenge the current architecture of the international system as it now exists. Both dynamics limit a state's ability to decide on and control key issues affecting it. Globalization does it largely by design as states commit to liberalize trade and embrace new technologies. The environment challenges the system by default as ecosystem boundaries rarely overlap with national boundaries and ecological systems are nearly always supra-state. The role of the state in the management of the international system has to evolve to respond to the evolution of the challenges facing it.

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This evolution is already happening, but often in painful, even con-torted, ways. Having outgrown its old structure, the international system is designing a new, more inclusive one.⁸⁵ Many problems have been identified in the current system of global governance: it is too large; it is chronically short of money and yet also wasteful of the resources it has; it has expanded in an ad hoc fashion; it lacks coordination and a sense of direction; it is often duplicative and

sometimes different organizations within the system work at cross-purposes to each other, etc. In terms of environment and globalization, we see three important goals for the global governance system as it exists today.

Managing institutional fragmentation: Although there already exist organs within the system to address most problems thrown up by environment and globalization, the efforts of these institutions are fragmented and lack coordination or coherence. The efforts and the instruments for making the “system” work as a whole either do not exist or are under-utilized. The institutional architecture that we

There is a pressing need, therefore, for meaningful global governance reform.

have remains focused on precise issues even though the pressing challenges of our times—particularly those related to environment and globalization—relate to the connections between issues (e.g., labour and trade; environment and investment; food and health; etc.). There is a pressing need, therefore, for meaningful global governance reform that creates viable and workable mechanisms for making existing institutions work together more efficiently and effectively than they have so far.

Broadening the base of our state-centric system: Despite some headway over the last two decades, the essential architecture of the

... the essential architecture of the international governance system remains state-centric, even though neither the problems nor the solutions are any longer so.

international governance system remains state-centric, even though neither the problems nor the solutions are any longer so. In terms of environment and globalization dynamics, one now finds civil society and market actors playing defining roles in establishing the direction and sequence of events. Whether it is companies creating new global norms and standards through their procurement and supply chains, or NGOs establishing voluntary standards in areas such as forestry or organic products, we see that policy in practice is no longer the sole domain of the inter-state system. It should be acknowledged that both civil society

and business are beginning to be integrated into global governance mechanisms—for example, through their presence and participation in global negotiations and summits and through closer interactions with environmentally progressive businesses. This process needs to be deepened and accelerated, and meaningful ways need to be found to incorporate them as real partners in the global governance enterprise.

Establishing sustainable development as a common goal: The post-World War II international organizational architecture was originally designed to avoid another Great War. In terms of what the system does and in terms of the types of goals that it has set for itself (e.g., the Millennium Development Goals; stabilization of atmospheric concentrations of CO₂; eradication of diseases such as Malaria; control of HIV/AIDS; etc.), the system has evolved to a broader understanding of what we mean by “security” as well as of what its own role is. Yet, it is not always clear that the entire system of global governance is moving towards a common goal. This creates undue friction between the organizations that make up the system and results in disjointed policies.

To the extent that a new common global goal has emerged, it is sustainable development. Not only is sustainable development quintessentially about the linkages between environment and globalization, it is also a goal that has increasingly been adopted by various elements of the global system. For example, it is not only the overarching goal of all environmental organizations and instruments, it is also now a stated goal of the World Trade Organization, the Food and Agriculture Organization and many others.

To the extent that a new common global goal has emerged, it is sustainable development.

Laying out a detailed plan for achieving this shared goal is beyond the scope and mandate of this document. To a more limited extent, an earlier related report, *Global Environmental Governance: A Reform Agenda*,⁸⁶ begins doing so for the process of environmental governance only. While recommendations from that work are valid here, the challenge of environment and globalization lays out an even bigger agenda for us to think about. By way of prodding such

thinking, a sampling of the types of initiatives that could be considered is presented here.

- The last few years have seen a number of different initiatives on *international institutional reform*, and the next few will invariably see more. Many of these have been focused on organizational reform relating to management, operations, financing, etc. Some have been focused more precisely on strengthening key institutions in specific issue areas (e.g., UNEP for global environmental governance). The success of such initiatives is important in making the system efficient and these processes should be supported and strengthened. Bringing more coherence and coordination between sub-systems should also be a major priority: e.g., the global environmental governance system; the global financial governance system; the global economic development support system; etc.
- The challenge, however, is larger than efficiency alone. It is also about making the various components of the system work together and towards a shared vision. As an initial step, one could envisage choosing just one area with which to begin and establishing modalities for *deep and permanent links between institutions that are dealing with clearly related issues*. The obvious candidate is the area of trade and environment. Given our earlier discussion and the steps that have already been taken in improving coherence between these intertwined areas, one could envisage an agreement between the two institutions that clearly defines the role of each and the “services” that each can provide to the other and the expertise that can be shared across the two domains. Such coordination at the global level could also serve to instill greater interaction between environmental and trade decision-making at the domestic level.
- Effectively responding to the challenges of environment and globalization requires a concerted effort to find *new and meaningful ways to engage non-state actors from business and civil society*. A first generation of attempts towards public-private partnerships is already underway with efforts such as the UN Secretary General’s Global Compact Initiative, the Type 2 partnerships devised during WSSD in 2002, and increasing interac-

tion between state and non-state actors at various global fora.⁸⁷ There is a need to elevate this notion of partnerships to a new and higher level. One which seeks to establish not only shared goals and priorities, but to also devise a course of shared responsibility and joint action. Until now, for the most part, partnerships between state and non-state parties have meant seeking synergies in what they are already doing. In order to meet the challenges of environment and globalization, we need to move to deeper—possibly contractual—bargains that bring business and civil society as full partners into the enterprise of global governance. The type of partnerships that was discussed above in terms of e-waste may be one example of what this might look like.

- The existing instruments that do relate to environment and globalization tend to come either from the direction of environmental policy (e.g., the climate convention) or from the direction of economic policy (e.g., WTO rules). As a first step, and as elaborated above, the cross-cutting elements within these instruments need to be better understood, and actors from various domains need to be engaged in these discussions. However, we will soon also need to start *creating new instruments that emerge not from one of the two dynamics—environment or globalization—but from the interaction of the two*. For example, there is already an advanced body of interesting work done on “green accounting” and various forms of ecological accounting and ecological tax reform. There is both a need and an opportunity to begin thinking of integrating this work into our national and global accounting mechanisms. One option might be to promote systems of payment for ecological services (domestically, internationally and possibly globally). Or, at a minimum, to account for the value of such services in national accounts so that more reasoned and reasonable decision-analysis can be done for and by policy-makers. Another option, at a more extreme end of the spectrum of possibilities, may be to consider new legal instruments: a possible “Global Compact on Poverty Reduction” or a “Global Treaty on Consumption.” The merits of particular instruments may be debatable, but the point to be made here is that if global opportunities are to be maximized

while adhering to principles of global responsibility, then new and innovative mechanisms of understanding, measuring and managing economic and ecological values will be needed.

- Another area of global governance that needs attention in terms of environment and globalization is that of *security—and insecurity*. An acknowledgement and appreciation of the importance of human insecurity and of the multiple drivers of societal as well as international conflict has begun to grow. However, our governance mechanisms for discussing security remain fixated on a much narrower conception of security. Institutions responsible for dealing with issues of security are slowly—but, again, too slowly—beginning to accommodate broader notions of the term. The UN Security Council, for example, held a special hearing on conflict diamonds.⁸⁸ The U.S. military, as another example, has had for a number of years an Assistant Secretary for environmental security, and has been seriously studying the implications of global climate change on U.S. security. There is a need to even more explicitly broaden the mandate of global security organizations to include non-traditional security mandates, including those related to environmental security.
- Although discussions of environment and globalization may take place at the global level, the implications of these dynamics are invariably national and local. It is evident that the ability to manage these processes, to benefit from the potential of globalization and to minimize the threats of environmental degradation are all functions of *preparedness, information and capacity*. Investments in these areas—and particularly in developing countries—can have immediate as well as long-term benefits vis-à-vis sustainable development. As has been suggested, globalization has great potential to bring economic prosperity to the poor. But this potential cannot be realized without the capacity to do so and a readiness within those communities and societies to actualize these benefits. The role of international assistance in creating such readiness and enhancing such capacities is critical. Addressing domestic capacity constraints—including, for example, in early warning; technology choice and innovation;

decision analysis; long-term investment analysis; etc.—should, therefore, be a key area of international cooperation.

- Finally, we do need *better assessments* of the full potential as well as the full costs of environment and globalization interactions. If any of the ideas presented here are to be adopted, we will need far more robust information and analysis than we now have. What is the full value of global ecological services? What are the best available instruments for ecological accounting? How are the costs and benefits of globalization currently distributed? What are the economic costs of various environmental stresses? What are the long-term impacts of alternative technology decisions? What is the potential for de-materialization and de-linking growth from consumption? These, and many others, are some of the many important questions that we need to think about. It may not be possible to get answers to all of the questions. But it is possible to get answers to many. In other cases, even if exact answers are not available, indicative assessments may be possible. A first step, therefore, would be to conduct a large-scale global assessment of the state of knowledge on environment and globalization. As we found with the global assessments on climate change and, more recently, the *Millennium Ecosystem Assessment*,⁸⁹ the act of conducting such systematic studies is important not only for the answers that they bring out but also because they raise new and more important questions, they identify new and otherwise unexplored options, and they help create the policy space for new discussions.

Endnotes

- 1 Carson, 1962; Boulding, 1966; Ehrlich, 1968; Ward and Dubos, 1972; Meadows, 1972; Lovelock, 1979.
- 2 Brundtland, 1987; UNCED, 1992; WSSD, 2002; Raskin *et al.*, 2002; For a general overview see Brown *et al.*, 2006, and IISD, 2006.
- 3 Prof. Adil Najam is an Associate at the IISD and teaches at the Fletcher School of Law and Diplomacy, Tufts University. Adil Najam, Mihaela Papa and Lauren K. Inouye are all affiliated with the Center for International Environment and Resource Policy (CIERP) at the Fletcher School, Tufts University.
- 4 Scholte, 2000:15–17.
- 5 Bhagwati, 2004; IMF, 2002.
- 6 Georgescu-Roegen, 1971.
- 7 Daly, 1993; Bauman, 1998; Shiva, 2005.
- 8 Jelin, 2000; Held, 2003; Mittelman and Othman (eds.), 2001.
- 9 UNSG, 2000; UNDP, 2002.
- 10 Weiss, 1999; Roch and Perez, 2005.
- 11 Najam *et al.*, 2004; Najam *et al.*, 2006.
- 12 Speth (ed.), 2003; Wijen *et al.* (eds.), 2005.
- 13 Nelson, 2002. Popularly attributed to Paul Hawken.
- 14 Even 18th century scientists were preoccupied with the effects of resource scarcity on the future improvement of society, e.g., see Malthus, 1798.
- 15 Bromley, 2006; Sturm and Wackernagel, 2003; Roughneen, 2006; Godoy, 2006.
- 16 See Young *et al.*, 2006, for the effects of globalization on the resilience, vulnerability and adaptability of socio-ecological systems. See Pirages and Cousins, 2005, for the evolution of the “new limits to growth.”
- 17 The authors are thankful to Phillippe Roch for this insight and some of the text on growth in this and other sections.
- 18 See <http://www.footprintnetwork.org>.
- 19 WWF, 2006.
- 20 Millennium Ecosystem Assessment, 2005.
- 21 See Meadows, 1972; Meadows *et al.*, 2004, for the concept of “limits.” The concept as originally presented was widely challenged (see Simon, 1981), but as a general concept it is widely accepted that there are ultimate limits to all finite resources. Also see Georgescu-Roegen, 1971.
- 22 See for example Lees, 2006. The race also increases our interest in mining the oceans and the skies.
- 23 On “resource curse” thesis and implications Auty, 1993; Lay *et al.*, 2006; for policy solutions see WRI, 2005.
- 24 Homer-Dixon, T., 1995.
- 25 21 UNSG, 1999.

- 26 Worldwatch Institute, 2006:41.
- 27 Constanza *et al.*, 1997; Allen and Nelson, 1999.
- 28 Worldwatch Institute, 2006, xxiv.
- 29 See Daily, 1997; Hawken *et al.*, 2000. For estimated saving of watershed management as an alternative to filtration plants see Worldwatch Institute, 2006: 49.
- 30 Black, 2006.
- 31 Black, 2006.
- 32 Worldwatch Institute, 2006:15.
- 33 Millennium Ecosystem Assessment, 2005.
- 34 Stern, 2006.
- 35 UNSG, 2004.
- 36 See discussion in WRI *et al.*, 2005: Chapter 1 “Nature, Power and Poverty,” 17.
- 37 IPCC, 2001:9 in WRI, 2005.
- 38 IPCC, 2001:84 in WRI, 2005.
- 39 FAO, 2005:2 in WRI, 2005.
- 40 IPCC, 2001:455 in WRI, 2005.
- 41 More on the concept of “human security” in Human Security Centre, 2006 report. Also see Najam, 2003.
- 42 On the relationship between globalization, inequality and marginalization within and across nations, see e.g., Basu, 2005.
- 43 Johnson *et al.*, 2006; Najam, 2004a.
- 44 See also e.g., Breton *et al.*, 2006; Macfadyen and Corcoran, 2002.
- 45 Sindico, 2005; Abbott *et al.*, 2006.
- 46 World Bank, 2003.
- 47 Millennium Ecosystem Assessment, 2005.
- 48 Myers, 1993; IPCC, 2001.
- 49 For an overview of the environment-security nexus see Gleditsch, 2001; Stedman, 1997; Najam, 2003; Ross, 2004.
- 50 World Conservation Union, 2002; Matthew, Halle and Switzer, 2002; Najam, 2003.
- 51 Measured at PPP, The Economist, 2006.
- 52 Sun *et al.*, 2004; Terazono *et al.*, 2004.
- 53 Smith, 2006.
- 54 BBC, 2006.
- 55 See “The Rise and Spread of the Consumer Class” at <http://www.worldwatch.org/node/810->.
- 56 See Chapter 1, “The State of Consumption Today,” Worldwatch State of the World 2004.
- 57 Saltmarsh, 2006.
- 58 Story, 2005.
- 59 Polaski, 2006; Williams, 2005; Tussie, 1999.
- 60 This refers to the linkage between economic growth and growth in emissions.

- 61 Sun *et al.*, 2004; Terazono *et al.*, 2004.
- 62 Fisher-Vanden *et al.*, 2004.
- 63 See e.g., Durning, 1992.
- 64 State of the World 2006:44.
- 65 See Sierra Club Web site; <http://www.sierraclub.org/population/consumption/>.
- 66 WWF, 2006.
- 67 See e.g., Daly, 1996.
- 68 Schor, 1991.
- 69 James, 2002; Castells, 1999.
- 70 WWF and Ecofys, 2005.
- 71 Bradsher, 2003. Also see WRI, 2004.
- 72 Brown, 2006.
- 73 The Economist, 2006; Schor, 2000; Gasper, 2005; Binswanger, 2006; Galati *et al.*, 2006; Graham and Pettiano, 2006; Prescott-Allen, 2001.
- 74 Brundtland, 1987.
- 75 Agenda 21, 1992.
- 76 On factor four: Weizsäcker, Lovins and Lovins, 1997; on natural capitalism: Hawken, Lovins and Lovins 2000; on eco-efficiency/industrial ecology: McDonough and Braungart, 2002, Bleischwitz and Hennicke, 2004, OECD, 1998; on the ecology of commerce: Hawken, 1994; on Great Transition: Raskin *et al.*, 2002.
- 77 European Commission, 2005.
- 78 WWF-UK, 2005.
- 79 Making Sweden an Oil-free Society. Report of the Swedish Government Commission on Oil Independence. 21 June 2006. <http://www.sweden.gov.se/content/1/c6/06/70/96/7f04f437.pdf>.
- 80 For full text of these documents see <http://www.wto.org>. See preamble in Marrakech Agreement Establishing the World Trade Organization, as well as and Article XX chapeau and sub-points for environmental exceptions in the General Agreement on Tariffs and Trade.
- 81 Najam, 2004; Halle, 2005.
- 82 Selin and VanDeveer, 2006.
- 83 See http://www.ban.org/ban_news/2006/060921_toxic_shock.html. Also see, for related figures, Selin and VanDeveer, 2006.
- 84 Najam, Papa and Taiyab, 2006; Najam, 2004.
- 85 Najam, Papa and Taiyab, 2006.
- 86 Najam, Papa and Taiyab, 2006.
- 87 White *et al.*, 2003; Najam, 2005.
- 88 See <http://www.kimberleyprocess.com>.
- 89 Millennium Ecosystem Assessment, 2005.

Bibliography

- Abbott, C., P. Rogers and J. Sloboda, 2006. *Global Responses to Global Threats: Sustainable Security for the 21st Century*. Oxford, U.K.: Oxford Research Group.
- Allen, J. and M. Nelson, 1999. "Biospherics and Biosphere 2, Mission One (1991–1993)." *Ecological Engineering* 13, 15–29.
- Annan, K., 1999. Address of the United Nations Secretary-General to the World Economic Forum in Davos, Switzerland. January 31.
- Auty, R. M., 1993. *Sustaining Development in Mineral Economies: The Resource Curse Thesis*. London, U.K.: Routledge.
- Basel Convention Secretariat, 2006. *Mobile Phone Partnership Initiative (MPPI)*. Information Brief and Background at <http://www.basel.int/industry/mppi.html>.
- Basu, K., 2005. *Globalization, Poverty and Inequality: What is the Relationship? What Can be Done?* Research Paper No. 2005/32. Helsinki, Finland: UNU-WIDER.
- Bauman, Z., 1998. "On Glocalization: Or Globalization for Some, Localization for Others." *Thesis Eleven*, 54, 37–49.
- BBC News, 2006. "Mittal Steel Unveils Arcelor Bid." January 27.
- Bell, D., 1988. "Previewing Planet Earth in 2013." *Washington Post*, January 3.
- Bhagwati, J., 2004. *In Defense of Globalization*. New York: Oxford University Press.
- Black, Richard, 2006. "New crops needed to avoid famines," On BBC News Web site, December 3, 2006. Available at <http://news.bbc.co.uk/2/hi/science/nature/6200114.stm>.
- Bleischwitz, R. and P. Hennicke (eds.), 2004. *Eco-efficiency, regulation and sustainable business: Towards a governance structure for sustainable development*. Cheltenham, U.K., and Northampton, MA: Edward Elgar.
- Blustein, P., 2002. "New Faith in Free Trade: In Break With Allies, Oxfam Backs Globalization." *Washington Post*, April 11.
- Boulding, K.E., 1966. "The Economics of the Coming Spaceship Earth". In Jarrett H. (ed.), *Environmental Quality in a Growing Economy*, pp. 3–14. Baltimore, MD: Resources for the Future/Johns Hopkins University Press.
- Bradsher, K., 2003. "China Set to Act on Fuel Economy; Tougher Standards Than in U.S." *The New York Times*. November 18.

- Breton, Y. *et al.*, 2006. *Coastal Resource Management in the Wider Caribbean: Resilience, Adaptation, and Community Diversity*. Kingston, Miami: Ian Randle Publishers and Ottawa, Canada: IDRC.
- Bromley, D., 2006. "Toward Understanding Global Tension: Natural Resources and Competing Economic Histories." *Resource Policies: Effectiveness, Efficiency, and Equity*. 2006 Berlin Conference on the Human Dimensions of Global Environmental Change 17–18 November.
- Brown, J.W., Chasek, P. and D.L. Downie, 2006. *Global Environmental Politics*. Boulder, CO: Westview Press.
- Brown, L., 2006. *Plan B 2.0: Rescuing a Planet Under Stress and a Civilization in Trouble*. New York: W.W. Norton and Company.
- Brundtland, G.H. (ed.), 1987. *Our Common Future: Report of the World Commission on Environment and Development*. Oxford, U.K.: Oxford University Press.
- Carson, R., 1962. *Silent Spring*. Boston, MA: Houghton Mifflin.
- Cassara, A., Prager, D. and P. Steele, 2005. *Poverty and Governance in a Global Frame*. EarthTrends Environmental Information. Washington, DC: WRI. September.
- Castells, M., 1999. *Information Technology, Globalization and Social Development*. United Nations Research Institute for Social Development (UNRISD). Geneva: UNRISD Publications.
- Cosbey, A.J., 2000. *Institutional Challenges and Opportunities in Environmentally Sound Trade Expansion: A Review of the Global State of Affairs*. Miami, FL: North South Center, University of Miami.
- Costanza, R. *et al.*, 1997. "The Value of the World's Ecosystem Services and Natural Capital." *Nature*, Volume 387.
- Daily, G.C., 1997. *Nature's Services: Societal Dependence on Natural Ecosystems*. Washington, DC: Island Press.
- Daly, H.E., 1993. "The Perils of Free Trade." *Scientific American*. (November): 50–57.
- Daly, H.E., 1996. *Beyond Growth*. Boston; Beacon Press.
- De Soto, H., 2000. *The Mystery of Capital: Why Capitalism Triumphs in the West and Fails Everywhere Else*. New York: Basic Books.
- Dilley, M. and R.S. Chen *et al.*, 2005. *Natural Disaster Hotspots: A Global Risk Analysis*. Washington DC: World Bank Publications.
- Durning, A., 1992. *How Much is Enough? The Consumer Society and the Future of the Earth*. New York: W.W. Norton and Company.
- Economist, The, 2006. "Economist Survey: World Economy." September 14.
- Ehrlich, P.R., 1968. *The Population Bomb*. New York: Buccaneer Books; Reprint ed. December 1995.

- European Commission, 2005. *Thematic Strategy on the Sustainable Use of Natural Resources*. Brussels, Belgium: European Commission. December 21.
- European Environment Agency (EEA), 2005. *Household Consumption and the Environment*. EEA Report No 11/2005. Copenhagen, Denmark: EEA. November.
- Falk, R., 2003. "Globalization-from-Below: An Innovative Politics of Resistance." Chapter 15 in Sandbrook, R. (ed.) *Civilizing Globalization*. Albany, NY: SUNY Press.
- Fisher-Vanden, K. *et al.*, 2004. "What is Driving China's Decline in Energy Intensity?" *Resource and Energy Economics* 26:77–97.
- Food and Agriculture Organization (FAO), 2005. "Impact of Climate Change, Pests and Diseases on Food Security and Poverty Reduction." Background document for the Special Event at the 31st Session of the Committee on World Food Security. 23–26 May.
- Georgescu-Roegen, Nicholas, 1971. *The Entropy Law and the Economic Process*. Cambridge, MA: Harvard University Press.
- Geyer M.H. and J. Paulmann (eds.), 2001. "Introduction: The Mechanics of Internationalism." In *The Mechanics of Internationalism: Culture, Society and Politics from the 1840's to the First World War*. Oxford: Oxford University Press, 1–25.
- Gleditsch, N.P., 2001. "Environmental Change, Security, and Conflict." In Crocker, C.A., F.O. Hampson and P. Aall (eds.) *Turbulent Peace: the Challenges of Managing International Conflict*. Washington, DC: USIP, 55–69.
- Godoy, J., 2006. "China Reaches into Europe's Resource-Rich 'Backyard.'" *Inter Press Service News Agency*, November 15.
- Halle, M., 2005. *Where Are We in the Doha Round?* Winnipeg, Canada: International Institute for Sustainable Development. Available at: <http://www.iisd.org>.
- Hawken, P., A. Lovins and L.H. Lovins, 2000. *Natural Capitalism*. Boston, MA: Back Bay Books.
- Hawken, P. 1994. *The Ecology of Commerce: A Declaration of Sustainability*. New York: HarperCollins Publishers.
- Hedley, A.R., 2002. *Running out of Control: Dilemmas of Globalization*. Bloomfield, CT: Kumarian Press, Inc.
- Held, D., 2003. "Cosmopolitanism: Taming Globalization." In Held, D. and A.G. McGrew (eds.) *The Global Transformations Reader*. 2nd ed. Cambridge, U.K.: Polity Press.
- Hempel, L., 1995. *Environmental Governance: The Global Challenge*. Washington DC: Island Press.

- Holton, R. J., 2005. *Making Globalization*. Hampshire and New York: Palgrave Macmillan.
- Homer-Dixon, T., 1995. "The Ingenuity Gap: Can Poor Countries Adapt to Resource Scarcity?" *Population and Development Review*, Volume 21(3).
- Human Security Centre, 2006. *Human Security Report 2005: War and Peace in the 21st Century*. New York: Oxford University Press.
- Intergovernmental Panel on Climate Change (IPCC), 2001. *Third Assessment Report: Working Group II: Impacts, Adaptation and Vulnerability*. Oxford: Oxford University Press.
- International Energy Agency (IEA), 2006. *World Energy Outlook 2006*. Paris, France: IEA Publications.
- International Institute for Sustainable Development (IISD), 2006. *The Sustainable Development Timeline*. 4th ed. Winnipeg: IISD.
- International Monetary Fund (IMF), 2002. *Globalization: A Framework for IMF Involvement*. IMF Issues Brief of March 15. Washington, DC: IMF.
- International Strategy for Disaster Reduction Secretariat, 2006. *Building a Global Network of NGOs for Community Resilience to Disasters*. More information at <http://www.unisdr.org>.
- International Trade Union Confederation (ITUC), 2006. "Humanising Globalisation – the Challenge of International Institutions," ITUC Press Release of November 2. Brussels: Belgium.
- James, J., 2002. *Technology, Globalization and Poverty*. Cheltenham, U.K. and Northampton, MA: Edward Elgar.
- Jelin, E., 2000. "Towards a Global Environmental Citizenship?" *Citizenship Studies*, Volume 4(1).
- Johnson, M., K. Mayrand and M. Paquin, 2006. *Governing Global Desertification: Linking Environmental Degradation, Poverty and Participation*. Hampshire, U.K.: Ashgate Publishing, Ltd.
- Kiely, R., 2005. *Empire in the Age of Globalisation*. London, U.K. and Ann Arbor, MI: Pluto Press.
- Lay, J., R. Thiele and M. Wiebelt, 2006. *Resource Booms, Inequality and Poverty: The Case of Gas in Bolivia*. Kiel Working Paper No. 1287. Kiel, Germany: The Kiel Institute for the World Economy.
- Lees, G., 2006. "India and China Compete for Burma's Resources." *World Politics Watch Exclusive*. August 21.
- Lipschutz, R.D. and J.K. Rowe, 2005. *Globalization, Governmentality and Global Politics: Regulation for the Rest of Us?* London, U.K.: Routledge.
- Lovelock, J., 1979. *Gaia: A New Look at Life on Earth*, 3rd ed. In 2000, Oxford, U.K.: Oxford University Press.

- Macfadyen, G. and E. Corcoran, 2002. *Literature Review of Studies on Poverty in Fishing Communities and of Lessons Learned in Using the Sustainable Livelihoods Approach in Poverty Alleviation Strategies and Projects*. FAO Fisheries Circular No. 979 FIPP/C979. Rome, Italy: FAO.
- Malthus, T., 1798. *An Essay on the Principle of Population, as it Affects the Future Improvement of Society*. With Remarks on the Speculations of Mr. Godwin, M. Condorcet, and Other Writers. London, Printed for J. Johnson, in St. Paul's Church Yard.
- Matthews, R.A., M. Halle and J. Switzer, 2002. *Conserving the Peace: Resources, Livelihoods and Security*. Winnipeg: IISD.
- McDonough, W. and M. Braungart, 2002. *Cradle to Cradle: Remaking the Way We Make Things*. New York: North Point Press.
- Meadows, D.H. et al., 1972. *The Limits to Growth*. New York: Universe Books.
- Meadows, D. H., J. Randers and D.L. Meadows, 2004. *Limits to Growth: The Thirty-Year Update*. White River Jct., VT: Chelsea Green Publishing Company.
- Milanovic, B., 2005. *Worlds Apart: Measuring International and Global Inequality*. Princeton, NJ: Princeton University Press.
- Millennium Ecosystem Assessment, 2005. *Ecosystems and Human Well-Being: Synthesis Reports*. Washington DC: MA, WRI and Island Press.
- Mittelman, J.H. and N. Othman (eds.), 2001. *Capturing Globalisation*. London, U.K.: Routledge.
- Morgera, E., 2006. "The UN and Corporate Environmental Responsibility: Between International Regulation and Partnerships." *Review of European Community & International Environmental Law*, Volume 15(1).
- Mullard, M., 2004. *The Politics of Globalisation and Polarisation*. Cheltenham, U.K. and Northampton, MA: Edward Elgar Publishing Limited.
- Myers, N., 1993. *Ultimate Security: the Environmental Basis of Political Stability*. New York and London: W. W. Norton.
- Najam A., I. Christopoulou and W. Moomaw, 2004. "The Emergent System of Global Environmental Governance." *Global Environmental Politics*, 4(4):23–35.
- Najam, A. (ed.), 2003. *Environment, Development and Human Security: Perspectives from South Asia*. Lanham, MD: University Press of America.
- Najam, A. 2004a. "Dynamics of the Southern Collective: Developing Countries in Desertification Negotiations," *Global Environmental Politics*. 4(3): 128–154.

- Najam, A., 2004. "Trade and Environment Negotiations after Doha: Southern Priorities and Options." In *Sustainable Development: Bridging the Research/Policy Gaps in Southern Contexts* edited by Sustainable Development Policy Institute, Pakistan. Pp. 183–195. Karachi: Oxford University Press.
- Najam, A., 2005. "A Tale of Three Cities: Developing Countries in Global Environmental Negotiations." In *Global Challenges: Furthering the Multilateral Process for Sustainable Development* edited by Angela Churie Kallhauge, Gunnar Sjöstedt and Elisabeth Correll. Pp. 124–143. London: Greanleaf.
- Najam, A., M. Papa and N. Taiyab, 2006. *Global Environmental Governance: A Reform Agenda*. Winnipeg: IISD.
- Nelson, G. 2002. *Beyond Earth Day: Fulfilling the Promise*. Madison, WI: University of Wisconsin Press.
- Organisation for Economic Co-operation and Development, 2002. *Towards Sustainable Household Consumption? Trends and policies in OECD countries*. 2002 Synthesis Report. Paris, France: OECD Publications.
- Organization for Economic Cooperation and Development (OECD), 1998. *Eco-Efficiency*. Paris, France; OECD Publications.
- Pirages, D. and K. Cousins, 2005. *From Resource Scarcity to Ecological Security: Exploring New Limits to Growth*. Cambridge, MA: MIT Press.
- Polaski, S., 2006. *Winners and Losers: Impact of the Doha Round on Developing Countries*. Carnegie Endowment Report, March. Washington, DC: Carnegie Endowment.
- Prahalad, C.K., 2004. *The Fortune at the Bottom of the Pyramid: Eradicating Poverty Through Profits*. Upper Saddle River, NJ: Wharton School Publishing.
- Prescott-Allen, R., 2001. *The Well-Being of Nations*. San Francisco: Island Press.
- Rajae, F., 2000. *Globalization on Trial: The Human Condition and the Information Civilization*. Bloomfield, CT: Kumarian Press, Inc.
- Raskin, P., T. Banuri, G. Gallopin and P. Gutman, 2002. *Great Transitions: The Promise and Lure of the Times Ahead (a report of the Global Scenario Group)*. Boston, MA: Stockholm Environment Institute.
- Rees, W. and M. Wackernagel, 1995. *Our Ecological Footprint: Reducing Human Impact on the Earth*. Gabriola Island, BC, Canada: New Society Publishers.
- Revin, A.C., 2004. "A Greener Globe, Maybe." *The New York Times*, August 29.

- Roch, P. and F.X. Perez, 2005. "International Environmental Governance: Striving for a Comprehensive, Coherent, Effective and Efficient International Environmental Regime." *Colorado Journal of International Environmental Law and Policy*, 16(1).
- Rodrik, D., 1997. *Has Globalization Gone Too Far?* Washington DC: Institute for International Economics.
- Rosenberg, J., 2000. *The Follies of Globalisation Theory*. London and New York: Verso.
- Ross, M., 2004. "How Do Natural Resources Influence Civil War? Evidence from Thirteen Cases," *International Organization* 58 Winter: 35–67.
- Roughneen, S., 2006. "Influence Anxiety: China's Role in Africa." *ISN Security Watch*. May 15.
- Roychowdhury, A. et al., 2006. *The Leapfrog Factor: Clearing the Air in Asian Cities*. New Delhi, India: Centre for Science and the Environment.
- Ruggie, J.G., 2006. *Requiem for Liberal Internationalism?* Public Lecture Delivered at the Hertie School of Governance, Berlin, Germany. August 28.
- Rupert, M. and S. Solomon, 2005. *Globalization and International Political Economy*. Lanham, MD: Rowman & Littlefield Publishers, Inc.
- Saltmarsh, M. "Getting in early as China cleans up." *International Herald Tribune*. January 8, 2006.
- Sandbrook, R. (ed.), 2003. *Civilizing Globalization*. Albany, NY: SUNY Press.
- Scholte, J.A., 2000. *Globalization: A Critical Introduction*. New York: Palgrave.
- Schor, J., 1991. "Global Equity and Environmental Crisis: An Argument for Reducing Working Hours in the North." *World Development*. Volume 19(1).
- Schor, J.B. and D.B. Holt (eds.). 2000. *The Consumer Society Reader*. New York: W.W. Norton and Company.
- Selin, H. and S. VanDeveer, 2006. "Raising Global Standards: Hazardous Substances and E-waste Management in the European Union," in *Environment*, 48(10):6–18.
- Shiva, V., 2005. *Globalization's New Wars: Seed, Water and Life Forms*. New Delhi: Women Unlimited.
- Simon, J.L., 1981. *The Ultimate Resource*. Princeton, NJ: Princeton University Press.
- Sindico, F., 2005. "Ex-Post and Ex-Ante [Legal] Approaches to Climate Change Threats to the International Community." *New Zealand Journal for Environmental Law*, Volume 9:209–238.
- Singer, P., 2004. *One World: The Ethics of Globalization*. New Haven: Yale University Press. 2nd ed.

- Smith, C., 2006. "Chinese Speak the International Language of Shopping." November 7, *The New York Times*.
- Speth, J.G. (ed.), 2003. *Worlds Apart: Globalization and the Environment*. Washington D.C.: Island Press.
- Stedman, S.J., 1997. "Spoiler Problems in Peace Processes," *International Security*, 22: 5–53. Fall.
- Stern, D.I., Common, M.S. and Barbier E.B., 1996. "Economic Growth and Environmental Degradation: The Environmental Kuznets Curve and Sustainable Development." *World Development*, Volume 24(7).
- Stern, N., 2006. *Stern Review on the Economics of Climate Change*. Report to Her Majesty's Treasury. 30 October. Cambridge, U.K.: Cambridge University Press.
- Stiglitz, J., 2006. *Making Globalization Work*. New York: W.W. Norton and Company.
- Story, J., 2005. "China – Workshop of the World?." *Journal of Chinese Business and Economic Studies*, 3(2):95–109.
- Sturm, A. and M. Wackernagel, 2003. *The Winners and Losers in Global Competition: Why Eco-Efficiency Reinforces Competitiveness: A Study of 44 Nations*. Ashland, OH: Purdue University Press.
- Sun, X., E. Katsigris and A. White, 2004, "Meeting China's Demand for Forest Products: An Overview," in *International Forestry Review*, 6(3–4):227–236.
- Swedish Commission on Oil Independence, 2006. *Making Sweden an Oil-free Society*. Report of June 21. Stockholm, Sweden: Swedish Government Offices.
- Talberth, J. et al., 2006. *The Ecological Footprint of Nations: Measuring Humanity's Impact on Marine Ecosystems*. Oakland, CA: Redefining Progress.
- Terazono, A., A. Yoshida, J. Yang, Y. Moriguchi and S. Sakai, 2004. "Material Cycles in Asia: Especially the Recycling Loop between Japan and China," in *Material Cycles and Waste Management*, 6(2):82–96.
- Tussie, D (ed.), 1999. *The Environment and International Trade Negotiations: Developing Country Stakes*. Basingstroke, U.K.: Macmillan.
- UNDP, 2002. *Global Reports: An Overview of Their Evolution*. New York: UNDP Office of Development Studies.
- UNDP, 2004. *Reducing Disaster Risk: A Challenge for Development*. New York: UNDP Bureau for Crisis Prevention and Recovery.
- UNDP, 2006. "Beyond Scarcity: Power, Poverty and the Global Water Crisis," *Human Development Report 2006*. Published for UNDP, New York: Palgrave Macmillan.

- UNDP, 1997. "Human Development to Eradicate Poverty," *Human Development Report 1997*. Published for UNDP, New York, Oxford: Oxford University Press.
- United Nations Environment Programme, 2006. *GEO Yearbook 2006: An Overview of our Changing Environment*. Nairobi, Kenya: UNEP.
- United Nations Secretary General (UNSG), 1999. *Comprehensive Review of Changing Consumption and Production Patterns*. E/CN.17/1999/2, January 13.
- UNSG, 2000. *We the Peoples: The Role of the United Nations in the 21st Century*. Report of the Secretary-General. See Chapter 1 on "Globalization and Governance." New York: United Nations A/54/2000.
- UNSG, 2004. Report of the U.N. Secretary-General's High Level Panel on Threats, Challenges and Change *A More Secure World: Our Shared Responsibility*. New York: United Nations A/59/565.
- Ward, B. and R. Dubos, 1972. *Only One Earth: The Care and Maintenance of a Small Planet*. New York: W.W. Norton and Company.
- Weiss, E.B., 1999. "The Emerging Structure of International Environmental Law." In Vig, N. and R. Axelrod (eds.) *The Global Environment: Institutions, Law, and Policy*. Washington DC: CQ Press.
- Weizsäcker, E.U., A.B. Lovins and L.H. Lovins, 1997. *Factor Four. Doubling Wealth – Halving Resource Use*. London, U.K.: Earthscan.
- White, M., C. Streck and T. Benner, 2003. "The Road from Johannesburg: What Future for Partnerships in Global Environmental Governance?" In *Progress or Peril? Partnerships and Networks in Global Environmental Governance*, edited by Witte *et al.* Berlin: Global Public Policy Institute.
- Wijen, F., K. Zoeteman and J. Pieters (eds.), 2005. *A Handbook of Globalisation and Environmental Policy*. Cheltenham, U.K. and Northampton, MA: Edward Elgar Publishing Limited.
- Williams, M., 2005. "The Third World and Global Environmental Negotiations: Interests, Institutions and Ideas," *Global Environmental Politics*. Volume 5(3):48–69.
- Wolf, M., 2004. *Why Globalization Works*. New Haven: Yale University Press.
- World Bank, 2003. *World Development Report 2003: Sustainable Development in a Dynamic World: Transforming Institutions, Growth, and Quality of Life*. See Chapter 4 "Improving Livelihoods on Fragile Lands." Washington DC: World Bank Publications.
- World Conservation Union, 2002. *State of the Art Review on Environment, Security and Development Cooperation*. Prepared for the OECD Development Assistance Committee. Gland, Switzerland: IUCN.

World Resources Institute (WRI), 2004. "WRI Report Outlines Impacts of New Chinese Fuel Economy Standards on Automakers," News Release November 9. Washington DC: WRI.

WRI, 2006. Earthtrends: Environmental Information, at <http://earthtrends.wri.org/>.

WRI, UNDP, UNEP and the World Bank, 2005. *World Resources 2005: The Wealth of the Poor: Managing Ecosystems to Fight Poverty*. Washington DC: WRI.

Worldwatch Institute, 2004. *State of the World 2004: The Consumer Society*. New York: W.W. Norton and Company.

Worldwatch Institute, 2005. *State of the World 2005: Redefining Global Security*. New York: W.W. Norton and Company.

Worldwatch Institute, 2006. *State of the World 2006, Special Focus: China and India*. New York: W.W. Norton and Company.

WWF and Ecofys, 2005. *WWF Climate Scorecards: Comparison of the Climate Performance of the G8 Countries*. July. Gland, Switzerland: WWF.

WWF, 2006. *Living Planet Report 2006*. Gland, Switzerland: WWF.

WWF-UK, 2005. "Tony Blair signals radical move towards 'One Planet Economy,'" Press Briefing, March 7. Godalming, Surrey U.K.: WWF-UK.

Ying, D., 2006. Statement by the Head of the Chinese Delegation at the Ministerial Interactive Dialogue at the 14th UN Commission on Sustainable Development, New York. 10 May. Beijing: Foreign Ministry of the People's Republic of China.

Young, O. *et al.* (2006) "The Globalization of Socio-Ecological Systems: An Agenda for Scientific Research" *Global Environmental Change* 16(3).

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