Global Cooperation for Local Implementation:

Achieving International Sustainable Development Commitments

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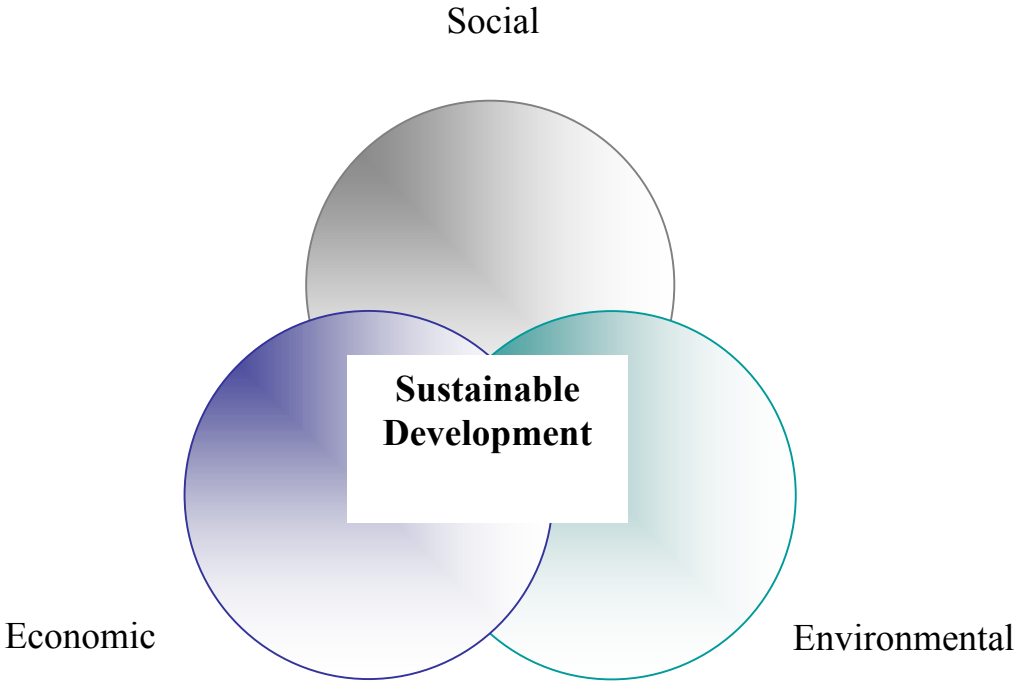
Social
Sustainable Development
Economic
Environmental

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LIST of ACRONYMS

CDC	Center for Disease Control
CFC	Chlorofluorocarbon
CITES	Convention on International Trade in Endangered Species
EEC	European Economic Community
EKC	Environmental Kuznets Curve
EU	European Union
FDI	Foreign Direct Investment
G8	Group of 8
GDP	Gross Domestic Product
GNP	Gross National Product
MDG	Millennium Development Goal
MOP	Meeting of the Parties
NAFTA	North American Free Trade Agreement
NGO	Nongovernmental Organization
ODA	Official Development Assistance
ODS	Ozone Depleting Substance
OECD	Organization for Economic Cooperation and Development
OTP	Ozone Trends Panel
UN	United Nations
UNCED	United Nations Conference on Environment and Development
UNCHE	United Nations Conference on the Human Environment
UNCSD	United Nations Commission on Sustainable Development
UNDP	United Nations Development Program
UNEP	United Nations Environment Program
UNGA	United Nations General Assembly
WBCSD	World Business Council on Sustainable Development
WHO	World Health Organization
WSSD	World Summit on Sustainable Development
WTO	World Trade Organization

PREFACE

In October of my junior year, I attended a national conference on student environmentalism, where I discovered that the United Nations would be holding a ten year follow up to the Earth Summit the following summer. Immediately, I knew that I had found my thesis topic. Not only was the timing perfect, but it would allow me the opportunity to attend a history-making event. For the most part, I have followed through with that inspiration of a year and a half ago. The learning and experiences that have gone in to this thesis have taken me around the world, introduced me to hundreds of people, from royalty and heads of state to refugees, and have fundamentally changed the way I view the world.

My first contact with the World Summit on Sustainable Development (WSSD or Rio+10) occurred in the spring of my junior year, when I attended a preparatory meeting in New York. There, I had my first exposure to the United Nations, international conferences, and the WSSD youth caucus – a group of young people representing organizations around the world. At the following preparatory meeting, in Bali, Indonesia, at the beginning of the summer, I continued to work with the youth caucus, to interview government delegates and NGO representatives for my thesis, and to puzzle at the disparity between our sumptuous surrounding and the realities of the issues at hand. Two months later, I boarded another airplane and joined the tens of thousands of people congregating on Johannesburg for the WSSD. The lack of cooperation in this process and the ultimate ineffectuality of the outcomes led me to write the following thesis.

April 2, 2003

INTRODUCTION

At the recent World Summit on Sustainable Development (WSSD) in Johannesburg, South Africa, tens of thousands of people congregated in a city marked by contrast – desperate poverty and outrageous wealth, violent crime and gated suburbs – to discuss approaches to solving the world's economic, social and environmental problems. In the glossy convention center, located in an upscale mall, security checkpoints placed next to designer clothing stores produced lines of delegates that stretched into a courtyard filled with opulent restaurants. Meanwhile, in the conference rooms, negotiators debated word placement in statements advocating assistance to the world's billions of poor and hungry, and rescue strategies for depleted fish stocks. In the streets, slum dwellers and NGO representatives clashed with riot police in protests that swarmed through the wealthy suburb, where residents watched from their walled properties.

The objective of the WSSD was implementation of commitments produced ten years earlier, at another United Nations summit, in Rio de Janeiro. The contrasts of Johannesburg, between the rich and the poor, the decision-makers and the stakeholders, are a reflection of conditions all over the world. People everywhere aspire to the standards of living broadcast by western media, but the planet simply does not have the resources to support everyone at the levels of consumption enjoyed in the United States and Europe. If China, the world's most populous country, were to follow the development patterns set forth by industrialized nations, our planet would be stretched to capacity. If every Chinese family owned a car and used oil at the rate used in the United States, China would need more oil than the world currently produces. If China's 1.3

billion people began consuming fish at the same rate as the Japanese, China would use the entire world fish catch. If paper use in China grew to the levels consumed in the United States, the demand would exceed current world production.[1] Clearly, something must change. In this thesis, I explore the potential future for development that seeks to improve the lives of people today and in generations to come, while protecting the natural environment. This approach to development, which attempts to balance economic, social and ecological needs over the long-term, is often referred to as "sustainable development."

Sustainable Development: Defining the Term

Sustainable development, the term given to the widely varied issues under discussion in Johannesburg, is a catch-all phrase that takes on widely varied meanings for different people. The most commonly accepted definition comes from the World Commission on Environment and Development, and describes "development which meets the needs of the present without compromising the ability of future generations to meet their own needs."[2] Sustainable development acknowledges the trade-offs inherent in the development process: short-term gains often come with long-term losses, just as long-term improvements may require short-term sacrifices. Three main components – economic, social and environmental – are increasingly recognized as essential to

[1] These projections for consumption in China are from Lester Brown, *Eco-Economy: Building an Economy for the Earth* (New York, N.Y.: W. W. Norton, 2001), pp. 17-18.
[2] United Nations General Assembly. "Report of the World Commission on Environment and Development," A/RES/42/187. New York, N.Y., 1987.

sustainable development.[3] These components are inextricably linked; ignoring one will, in the long-run, be detrimental to the others.

Over the past several decades, efforts at sustainable development have consisted primarily of top-down initiatives that originate at the international level, and attempt to create change through centralized treaties and agreements. These initiatives have, for the most part, not generated real progress on the ground, because they have failed to create incentives for sustainable development from the bottom-up.[4] In contrast to top-down approaches, bottom-up efforts originate at the grassroots or community scale, and are tailored to the needs of local actors. As the world looks to the new millennium, burdened by vast wealth inequalities and a deteriorating environment, a top-down framework is needed to remove obstacles and create the conditions for sustainable development at all levels. By simultaneously analyzing the many interconnected problems that fall under the rubric of sustainable development, I hope to better understand the types of comprehensive approaches that pave the way toward a sustainable future. This work does not propose to solve the many problems that I discuss, but merely to find a starting point from which they might be more easily addressed. I draw heavily on ten in-depth interviews conducted over the past five months, in person and over the phone, with well-respected academics and practitioners in the field of sustainable development. My own experiences as an accredited NGO representative at the World Summit on Sustainable Development and its preparatory meetings also significantly influence my research.

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[3] Jonathan Harris, Timothy Wise, Kevin Gallagher and Neva Goodwin, eds. *A Survey of Sustainable Development: Social and Economic Dimensions* (Washington, D.C.: Island Press, 2001), p. xxix.
[4] James Connelly and Graham Smith, *Politics and the Environment: From Theory to Practice* (New York, N.Y.: Routledge, 1999), p. 189.

Global Cooperation for Local Implementation: An Overview

Chapter 1 begins with a sweeping overview of the current state of the world, including the economic, social and environmental problems that have come under the umbrella of sustainable development. The statistics and statements used to convey this information are drawn from a variety of sources, and serve to provide a sketch of the magnitude and complexity of what sustainable development seeks to address. After summarizing the problems, I present some ideas on the sources of these problems, including economic and development theories on the tensions among the three components of sustainable development. Looking to the past, I explore the increasing international awareness of environmental problems, and their relationship to human welfare. Finally, I offer some guidelines for the future, including widely accepted principles of sustainable development, and estimates of the immense economic cost imposed by environmental degradation.

Chapter 2 examines the global response to sustainable development over the past several decades, including the evolution of international conferences and the recent frustrations with this process. This chapter examines current alternatives to the mega-summit model, and looks at the changing roles of the primary actors in sustainable development. All people and organizations are involved in sustainable development at some level, either helping or hindering its progress through individual and group decisions. For the purposes of this work, I select three groups of actors that have been central to international sustainable development activities over the past thirty years, and are likely to play key roles in the future. The first sector, governments, is currently central to international decision-making, though its role is rapidly evolving in the face of

increasing transboundary problems. The second group is the private sector, which constitutes a slightly more controversial player in sustainable development, though the vast wealth and influence wielded by corporations necessitates their involvement for a sustainable future. The third sector, nongovernmental organizations (NGOs), is taken very broadly in this work. NGOs constitute everything from large, inter-governmental organizations such as the United Nations Development Program to small, grassroots community groups.

In Chapter 3, I seek to ground my exploration of the potential for future sustainable development by turning to two case studies of successful international initiatives, and drawing lessons on what contributed to the feasibility of their achievements. The eradication of smallpox and the Montreal Protocol on Substances that Deplete the Ozone Layer were both characterized by international identification of a problem, and implementation of a solution that created incentives for cooperation and action at local and regional levels. Though these case studies explore very specific problems, while the focus of my work is exceedingly broad, they provide evidence of the factors that drive implementation. From these cases, I conclude that cooperation that overcomes the short-term, self interested behavior of national governments is essential to sustainable development.

Chapter 4 draws lessons and conclusions for the future of sustainable development. I begin by tracing a trend of divisiveness that runs through the issues and actors, undermining incentives and erecting artificial barriers to cooperation. I argue that the changes that need to take place must occur at a fundamental level to create the conditions to address the problems of sustainable development, and to reconcile

economic, social and environmental needs in the long-term. These changes include overcoming the barriers to cooperation presented by national self-interest, and internalizing social and environmental costs into the economic system. I argue that the beginnings of the necessary changes can be seen in the cooperation demanded by increasingly transboundary issues presented by economic globalization. Using the evolution of the European Union as a model, I project the potential for current international economic institutions to take on stronger roles in forcing cooperation on a variety of issues. A cooperative international body that overcomes the barriers of national sovereignty and self-interest, would have the power to make necessary changes in the economic system and to place an emphasis on long-term considerations in international decision-making. I trace these ideas through the specific problem of deforestation to examine how such a process could create the conditions for resolution of concrete and complex problems.

The conclusions to this work evolved out of my analysis of the linkages among issues and actors, the lessons of the case studies and the repeated iteration of the need for fundamental change that cropped up in the interviews. To fully explore the dynamics of globalization, the potential evolution of current economic organizations into cooperative institutions for sustainable development, and the factors required to drive such a process is far beyond the scope of this work. I do not intend to argue that globalization holds the solutions to the world's problems. Instead I propose that global governance can arise from shifting the focus of existing institutions toward increased cooperation and integration. I hope to provide new analysis on the topic, and to settle on what I perceive to be a starting point for the conditions for a sustainable future.

CHAPTER 1

THE STATE of the WORLD: PAST, PRESENT and FUTURE

We live on a human-dominated planet. Our species has altered the global ecosystem, affecting everything from ocean currents to extinction rates. These impacts do not remain external to the human experience, however. We are part of our environment, dependent on natural systems for the air we breathe, the water we drink, the shelters we inhabit, and the cultures we create. Modifying the natural world alters the human experience for the present generation, but even more so for generations to come. I begin my exploration of challenges for the future with a snapshot of the present state of the world through the three components of sustainable development: economic, social and environmental. I then turn from a description of the world as experienced by the present generation to the past, exploring roots and causes of the decisions and events that have shaped the current trajectory. Finally, I look at where this trajectory is leading, and the predicaments and constraints facing generations to come. The facts and statistics that I present may seem inflammatory in an academic setting. Many are shocking and are made more so by juxtaposition with contrasting numbers, however, it is only through such comparisons that we can create an accurate picture of the inequities and dilemmas of today and the future.

THE PRESENT GENERATION

Today's world is divided between haves and have nots. Those with money and opportunities, healthcare and education, clean air and fresh water are far outnumbered by

those without the economic, social and natural resources to maintain a healthy standard of living. These disparities divide countries into what is increasingly referred to as the "global North" and the "global South."[5] I use these terms throughout this work, as distinctions between the "North," "developed countries" or "industrialized countries" and the "South" or "developing countries." Inequalities do not adhere to political boundaries, however. Haves and have nots inhabit the same countries, many of which have seen domestic wealth discrepancies grow over the past few decades.[6] Continuing population growth in the South, coupled with increasing consumption in the North, adds considerable pressure to all three components of sustainable development.

The First Component: Economic

Though inequalities within countries are rife, there is little doubt that the growth of the global economy has served to further polarize the disparities among countries. Per capita income fell in more than 80 countries over the past decade, while the global economy experienced substantial growth.[7] Over the past thirty years, the economies of the world's wealthiest nations experienced grew significantly, while the least wealthy economies showed little or no growth.[8] The United Nations Development Program (UNDP) estimates that the ratio of per capita gross domestic product (GDP) for the

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[5] Peter and Susan Calvert, *The South, the North and the Environment* (New York, N.Y.: Pinter, 1999), p. 5.
[6] Manuel Castells, "The Rise of the Fourth World," in David Held and Anthony McGrew, eds. *The Global Transformations Reader: an introduction to the globalization debate* (Cambridge, U.K.: Polity Press, 2000), pp. 351-352.
[7] United Nations Development Program, "Globalization with a Human Face," in Held and McGrew, eds. *The Global Transformations Reader*, p. 342.
[8] World Bank, *World Development Report 1999/2000: Entering the 21st Century* (Oxford, U.K.: Oxford University Press, 2000), p. 14.

richest and poorest countries in the world went from 30:1 in 1960 to 74:1 in 1997.[9] Global financial flows, through trade, debt and investment, have benefited the global economy, but the distribution of the benefits has been far from even.[10] For example, member countries of the Organization of Economic Cooperation and Development (OECD) have 71% of the global trade in goods and services and 58% of foreign direct investment (FDI), but only 19% of the world's population.[11] Public decision-making, particularly by influential Northern countries, shapes global monetary flows, as do international institutions, such as the International Monetary Fund, the World Bank and the World Trade Organization.[12]

Global economic inequalities are huge and growing. Today, around half of the world's 6 billion people live on less than $2 per day, and 1.2 billion live on less than $1 per day.[13] While the majority of the world's population struggles to survive, vast economic wealth is consolidated in the hands of the

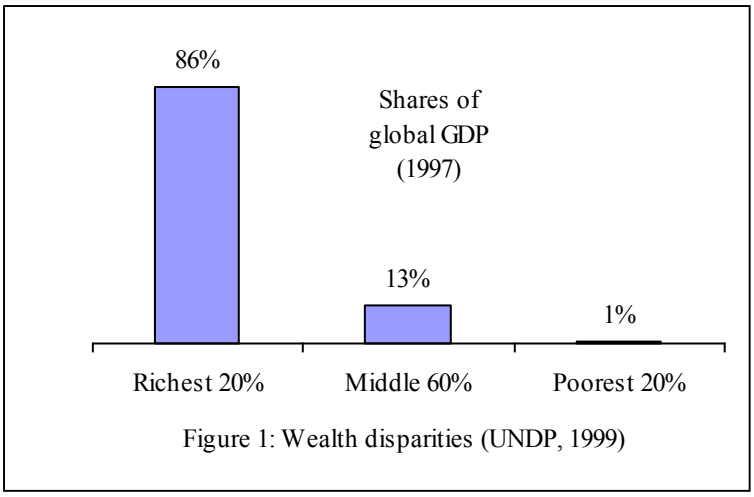

Figure 1: Wealth disparities (UNDP, 1999)

[9] United Nations Development Program, *Human Development Report 1999: Globalization with a Human Face* (Oxford, U.K.: Oxford University Press, 1999), p. 3.
[10] *Ibid*., p. 3.
[11] *Ibid*., p. 3.
[12] Ngaire Woods, "Order, Globalization and Inequality in World Politics," in Held and McGrew, eds. *The Global Transformations Reader*, p. 389.
[13] World Bank, World Development Report 2003 Overview: Sustainable Development in a Dynamic World (Washington, D.C.: World Bank, 2002), p. 1.

elite. The cumulative wealth of the world's three hundred-some billionaires is equal to the income of the poorest 2.2 billion people.[14] Over eighty percent of the global GDP is shared among 20% of the world's population.[15] The striking wealth discrepancies among individuals can, to some extent, be traced along political boundaries, as global resources become increasingly concentrated in a few countries and private institutions.[16] The average income in the richest 20 countries is 37 times that of the average income in the poorest 20 countries.[17]

A more telling measure of global inequalities, from the perspective of sustainable development, is the consumption disparities between the global North and the global South. The wealthiest 15% of the population accounts for 56% of total consumption, while the poorest 40% accounts for only 11% of consumption.[18] Much of this consumption is centered in the industrialized world, which accounts for around one quarter of the world population, but consumes 70% of the energy, 85% of the wood, and 60% of the food.[19] Many of these goods are funneled to the North from sources in the South in an unsustainable drain of natural resources.[20] James Gustave Speth, Dean of the Yale School of Forestry and Environmental Studies, points out that though poverty and

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[14] Felix Dodds, ed. The Way Forward: Beyond Agenda 21 (London, U.K.: Earthscan Publications Ltd, 1997), p. xviii.
[15] World Bank, *Johannesburg and Beyond: An Agenda for Action* (Washington, D.C.: World Bank, 2002), p. 4.
[16] United Nations Development Program, *Human Development Report 1999*, p. 3.
[17] World Bank, *World Development Report 2003 Overview*, p. 2.
[18] United Nations Department of Public Information. "Johannesburg Summit Fact Sheets: Facts about Consumption and Production Patterns." 2002. http://www.johannesburgsummit.org/html/media_info/pressreleases_factsheets/wssd9_consumption.pdf. 26 January 2003.
[19] Lorraine Elliot, *The Global Politics of the Environment* (London, U.K.: Macmillan Press, London, 1998), p. 2.
[20] Timothy Wise, "Global Perspectives: The North/South Imbalance," in Jonathan Harris, Timothy Wise, Kevin Gallagher and Neva Goodwin, eds. *A Survey of Sustainable Development: Social and Economic Dimensions* (Washington, D.C.: Island Press, 2001), p. 80.

environmental degradation are closely linked, the choices of the non-poor may be as great an obstacle as poverty in the quest for sustainable development.[21]

Both the causes and effects of resource depletion and overconsumption are increasingly globalized, such that the places that feel the environmental consequences of overconsumption first are often the places that consume the least.[22] The haves can access nearly any good in the world, from mahogany in Brazil to caviar in the Caspian Sea, without suffering the immediate consequences of its extraction. Similarly, polluting industries are increasingly located in countries with less stringent environment and labor regulations, where the need for jobs and economic investment outweighs concerns about environmental quality.[23] Overall, the distribution of global environmental burden is becoming increasingly uneven, as resource extraction and the externalities of production are concentrated in developing countries.

Rich countries currently contribute around 0.25% or 1/400 of their GDP to official development assistance (ODA).[24] Unfortunately, this aid is rarely directed to those most in need. Least developed countries remain dependent on ODA, which contributes an average of 90% of their long-term capital inflows.[25] In 2000, the average aid to low income countries came out to $12 per person. Only half of all aid goes to low-income economies, with an average per capita income of less than $755. The rest goes to

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[21] James Gustave Speth, Dean of the Yale School of Forestry and Environmental Studies, interviewed by the author, January 14, 2003.
[22] Elliot, *The Global Politics of the Environment*, p. 2.
[23] Steven Yearly, "Environment and the Compression of the Globe," in Held and McGrew, eds. *The Global Transformations Reader*, p. 377.
[24] United Nations Department of Public Information. "Johannesburg Summit Fact Sheets: Facts about Finance and Trade." 2002. http://www.johannesburgsummit.org/html/media_info/pressreleases_factsheets/trade_financearticle.pdf. 15 February 2003.
[25] *Ibid*.

middle income countries, where the average income can reach up to $9,000 per year.[26] Over the past decade, ODA has fallen from 0.33% to 0.22% of donor country GNP, moving away from the international commitment of 0.7% of GNP to ODA.[27]

The Second Component: Social

Global inequalities do not reside merely in incomes or consumption patterns. The social component of sustainable development, often referred to as human development, also shows vast inequities across and within countries.[28] The linkages between social and economic well-being emerge through patterns of disease, illiteracy and corruption that trace the global distribution of poverty. Important measures of social sustainable development include access to basic services such as health care and education, gender equity, and political transparency.[29] The statistics, though not as bleak as those for economic inequalities, show a world in which the location of your birth substantially determines the quality of your life.

Health is a major indicator of quality of life, often existing in cyclical relationships with poverty, gender inequality and crime. Over 40 million people are living with HIV/AIDS, 96% of whom live in developing countries.[30] The AIDS pandemic may present the greatest sustainable development challenge for the future. Predictions of social collapse, decreasing agricultural productivity and reductions in

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[26] Millennium Development Goals. "Building a global partnership for development." http://www.developmentgoals.org/Partnership.htm. 12 February 2003.
[27] United Nations Department of Public Information, "Johannesburg Summit Fact Sheet: Facts about Finance and Trade."
[28] Harris, Wise, Gallagher and Goodwin, *A Survey of Sustainable Development*, p. xvii.
[29] *Ibid*., p. xxix.
[30] United Nations Department of Public Information (UNDPI). "Johannesburg Summit Fact Sheets: Facts about Health." 2002. http://www.johannesburgsummit.org/html/media_info/pressreleases_factsheets/wssd6_health.pdf. 18 February 2003.

economic growth are being realized in countries with high rates of HIV/AIDS, particularly in sub-Saharan Africa.[31] Discussions of human health in the developing world lead inevitably to issues of environmental quality. Every year, 7 million people in developing countries die prematurely from environment-related diseases.[32] In fact, poor environmental quality contributes to 25% of all preventable diseases.[33]

The World Health Organization has found that poverty is closely correlated with poor water, sanitation and indoor air quality, which are, in turn, primary contributors to the burden of disease in developing countries.[34] More than one billion people lack access to safe water, and two and a half billion lack adequate sanitation.[35] Poor access to water and sanitation drastically increases the burden of disease through increased water, food and foecal borne illnesses, greater prevalence of insect vectors carrying malaria, Japanese encephalitis and dengue fever.[36] Eleven million children under five die annually of preventable causes, remediable through basic improvements in nutrition, sanitation, education and maternal health.[37] Three and a half million people die from water related diseases each year.[38] In addition to health concerns, water and sanitation issues contribute to gender inequities. Each year, women and female children spend 10 million

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[31] United Nations Program on HIV/AIDS (UNAIDS), *Report on the Global HIV/AIDS Epidemic* (Geneva, Switzerland: UNAIDS, 2002), pp. 23-28.
[32] World Bank, "The Environment and the Millennium Development Goals" (Washington, D.C.: World Bank, 2002), p. 8.
[33] United Nations Department of Public Information (UNDPI). "Johannesburg Summit Fact Sheets: Facts about Health."
[34] World Health Organization. *World Health Report 2002: Reducing risk, promoting healthy life*. Chapter 4, p. 2. 2002. http://www.who.int/whr/2002/chapter4/en/index1.html. 18 February 2003.
[35] World Bank, *World Development Report 2003 Overview*, p. 3.
[36] United Nations Children's Fund (UNICEF). "Children and the Environment." UNICEF Staff Working Papers. 1998. http://www.unicef.org/programme/wes/pubs/envpap/envp_e.pdf. 25 February 2003.
[37] United Nations Department of Public Information. "Johannesburg Summit Fact Sheets: Facts about Health."
[38] World Health Organization. "Water and Sanitation: Facts and Figures." 2002. http://www.who.int/water_sanitation_health/General/factsandfigures.htm. 25 February 2003.

person-years transporting water.[39] Such labor interferes with girls' education and opportunities. Additionally, the time costs of water gathering lead to a decreased emphasis on hygiene in many communities.[40]

One third of the world's population lacks access to modern energy sources, relying on fuelwood and biomass for cooking and heating.[41] Biomass combustion is incomplete, and produces high emissions of hazardous byproducts that combine with poor ventilation to produce devastating health effects.[42] Each year, 2.2 million people die as a result of indoor air pollution from cookstoves and heat sources. Eighty percent of the deaths occur among the rural poor in the South.[43] Women and children in developing countries spend more time indoors, and suffer disproportionately from the effects of poor energy resources.[44] Poor indoor air quality is a primary contributor to pneumonia, which is responsible for over 20% of deaths of children under five.[45]

The Third Component: Environmental

Poor environmental quality has a disastrous impact on the lives of the world's poor, with implications ranging from health to education to famine. Many sweeping

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[39] United Nations Department of Public Information. "Johannesburg Summit Fact Sheets: Facts about Water." 2002. http://www.johannesburgsummit.org/html/media_info/pressreleases_factsheets/wssd4_water.pdf. 25 February 2003.

[40] World Health Organization. "An Anthology on Women, Health and the Environment: Water." 1992. http://www.who.int/environmental_information/Women/Womwater.htm. 26 February 2003.

[41] United Nations Department of Public Information. "Johannesburg Summit Fact Sheets: Facts about Energy." 2002. http://www.johannesburgsummit.org/html/media_info/pressreleases_factsheets/wssd_energy_3105.pdf. 26 February 2003.

[42] World Health Organization. "Health effects of indoor air pollution exposure in developing countries." 2002. http://www.who.int/peh/air/Indoor/oeh0205intro.htm. 26 February 2003.

[43] Barbara Crossette. "Kofi Annan's Astonishing Facts." *New York Times* 27 September 1998. http://www.nytimes.com/learning/general/featured_articles/980928monday.html. 27 February 2003.

[44] World Health Organization. "Health effects of indoor air pollution exposure in developing countries."

[45] United Nations Children's Fund. "Children and the Environment."

environmental concerns, however, originate from the choices of the wealthy, including consumption, production, trade and technology.[46] Human influences dominate parts of the planet, but no ecosystem on Earth is free from human influence.[47] The ways in which humans interact with the environment are complicated, a rough overview of which is provided by Figure 2.[48]

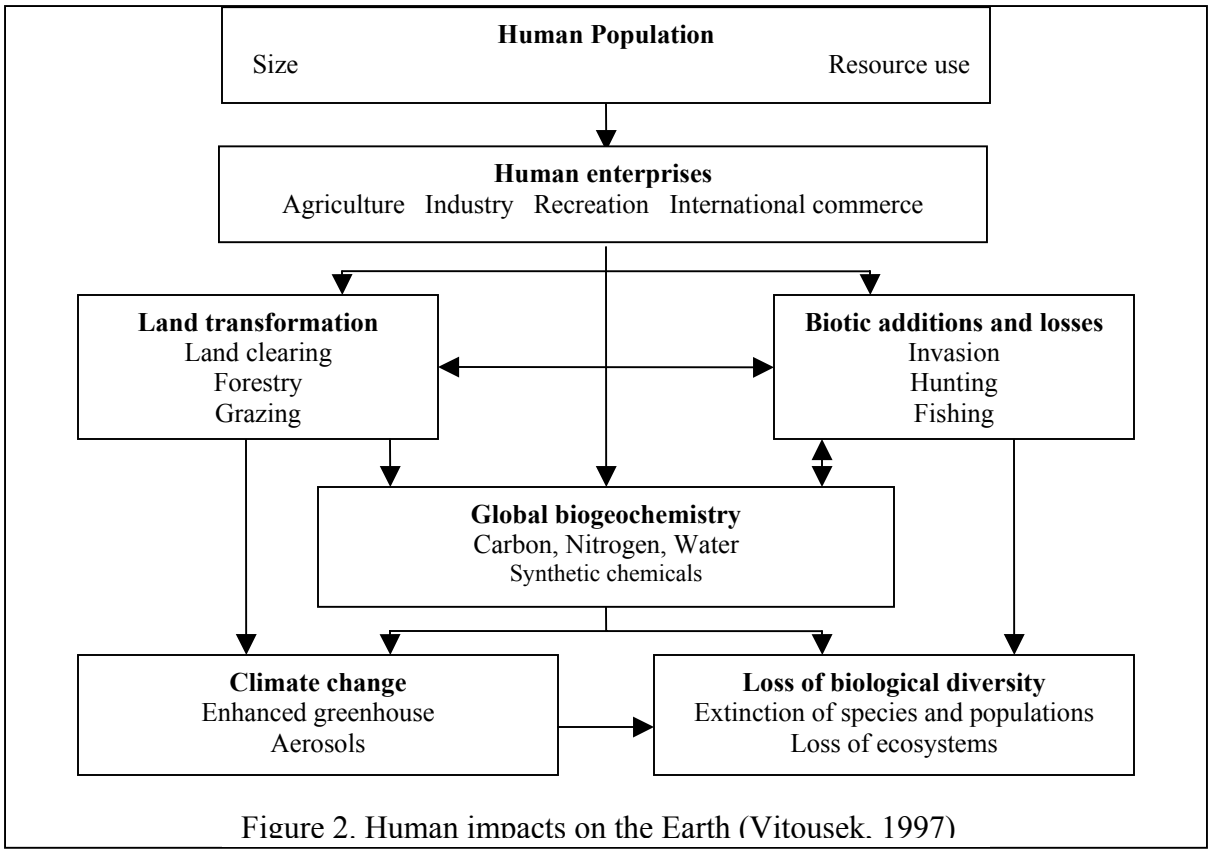

Figure 2. Human impacts on the Earth (Vitousek, 1997)

Humans have actively transformed between 40 and 50% of the world's land area, and the rest is being indirectly affected by fragmentation, acid rain and climate change.[49] The

[46] United Nations Department of Public Information. "Johannesburg Summit Fact Sheets: Facts about Protecting Natural Environments." 2002. http://www.johannesburgsummit.org/html/media_info/pressreleases_factsheets/wssd7_environment.pdf. 27 February 2003.
[47] Peter Vitousek, Harold Mooney, Jane Lubchenco, and Jerry Melillo, "Human Domination of Earth's Ecosystems," *Science* 277 (July 1997), p. 494.
[48] *Ibid*., p. 494.
[49] *Ibid*., p. 495.

effects of these pressures are evident in the increased impacts of natural disasters, in the collapse of international fisheries, and in the acidification and eutrophication of ecosystems due to increased nitrogen output from agriculture.[50]

We are rapidly losing the forests and ecosystems that house the world's biodiversity. Every second, an acre of tropical forest is destroyed.[51] More than a third of the remaining terrestrial biodiversity is confined to an area of just 1.4% of the planet's surface.[52] Species are disappearing at a rate that is 100 to 1000 times the natural rate of extinction, caused primarily by habitat loss and invasion of exotic species.[53] The 350 million people that directly depend on forests for survival suffer alongside the natural world as their ecosystems disappear. Many developing countries rely on earnings from forest product exports, while the millions of people in these countries depend on the forests for their everyday survival. Half of the forests that graced the world during pre-agricultural time have been destroyed.[54] In addition to fostering habitat and species, forests are important for local social arrangements, mitigation of erosion, air and water purification, nutrient recycling and carbon sequestration.[55]

All organisms rely on freshwater for survival, and humans are no exception. Yet, human needs stress the world's freshwater systems at an unsustainable level. Sixty percent of the major river systems are heavily fragmented by dams, and half of the

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[50] United Nations Environment Program (UNEP), *Global Environmental Outlook 3* (London, U.K.: Earthscan Publications, 2002), p. 488.
[51] United Nations Food and Agriculture Organization (FAO), *State of the World's Forests* (Rome, Italy: FAO, 2001), p. 44.
[52] World Bank, "World Development Report 2003 Overview," p. 3.
[53] Vitousek, Mooney, Lubchenco and Milillo, "Human Domination of the Earth's Ecosystems," p. 498.
[54] World Resources Institute (WRI), *World Resources Report 2000-2001: People and Ecosystems, the fraying web of life* (Washington, D.C.: WRI, 2000), p. 88.
[55] United Nations Environment Program (UNEP), *Global Environmental Outlook 3*, p. 177

world's available freshwater is consumed by humans.[56] Four out of every ten people currently live in water-depleted river basins.[57] Wetlands play a crucial role in filtering water and buffering against storms and floods, yet over half of the world's wetlands have been destroyed.[58] Sixty percent of the population lives within 100 kilometers of the ocean, placing enormous pressure on coastal wetlands and other fragile ecosystems.[59] Agricultural runoff, development activities and destructive fishing degrade marine ecosystems, threatening the species that live in these habitats and the people that depend on them for survival. Over a billion people depend on fish as their primary form of protein, yet over 75% of the world's fish stocks are fished at or beyond their biological capacity.[60]

Perhaps the most pressing issue on the environmental agenda, with the potential for ramifications in all arenas, from water to biodiversity to health, is climate change.[61] At the moment, the impacts of human greenhouse gas emissions are most clearly seen in the sophisticated models of research laboratories around the world. However, early consequences of climate change have begun to manifest themselves in loss of coral reefs around the world and in declining numbers of some migratory birds. Humans are likely to feel the effects of climate change in many ways, including decreasing availability of freshwater, increased severity of storms, increases in vector-borne diseases and shifts in global food production.[62] The wide-ranging threats of climate change point to the

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[56] World Resources Institute (WRI), *World Resources Report 2000-2001*, p. 104.
[57] *Ibid*., p. 110.
[58] United Nations Department of Economic and Social Affairs, *Global Challenge, Global Opportunity: Trends in Sustainable Development* (New York, N.Y.: United Nations), p. 10.
[59] Vitousek, Mooney, Lubchenco and Milillo, "Human Domination of the Earth's Ecosystems," p. 295.
[60] United Nations Food and Agriculture Organization (FAO), *The State of World Fisheries and Aquaculture* (Rome, Italy: FAO, 2002), p. 23.
[61] Speth, interview by the author.
[62] United Nations Environment Program (UNEP), *Global Environmental Outlook 3*, p. 368.

pervasiveness of human impacts on the planet, and of the need for a precautionary approach in our decision-making.

OUR PARENTS' LEGACY

Having provided a very superficial overview of the economic, social and environmental problems facing the world today, it is important to step back and view these issues in context. Economic and development theories seek to explain the origins of many of these problems. The following questions serve to guide a basic exploration of the roots of sustainable development issues. What is at the root of the pressures facing our economy, our society, and our environment? How has awareness of the issues facing our planet and our people changed over time? What has changed over the past decade or century? What obstacles hinder solutions to these problems?

The Roots of the Problems

We routinely treat the three components of sustainable development as separate, making decisions in one without considering the consequences in the others. Yet change in one inevitably impacts the others.[63] The disciplines used to study each of the components are not often combined, just as the decision-making processes for each rarely integrate all three components. Different time scales are commonly applied to the three components of sustainable development, making synchronization of the demands of each difficult. The environment is viewed at the broad scale of ecological time, at the level of ecosystems, species and global cycles. Social change is seen on a shorter cultural time

[63] Guiseppe Munda, "Environmental Economics, Ecological Economics, and the Concept of Sustainable Development," in Harris, Wise, Gallagher and Goodwin, eds. *A Survey of Sustainable Development*, p. 20.

scale, in which human history shapes language, society and knowledge. Finally, economic decisions are considered on the most immediate time scale, at the level of the individual or organization. The optimal decision from a short-term, economic perspective differs from the best choice from a long-term, ecological standpoint. This tension leads to immediate conflicts between human and environmental needs. From a long-term perspective, however, economic, human and ecological needs are inextricably linked.[64]

Garret Hardin, in his famous essay "The Tragedy of the Commons," examines the conflict among economic, social and environmental needs by describing a commons on which villagers graze their livestock free of charge.[65] Each individual seeks to maximize his or her own gain, which is equal to the benefit of free grazing for an additional animal. At the same time, all of the other villagers must bear the consequences of the additional pressure on the village resources. These consequences are distributed among all of the villagers, while the benefits accrue to the individual, making it rational to continue adding animals long after it becomes detrimental to the society as a whole. Hardin explains, "Each man is locked into a system that compels him to increase his herd without limit – in a world that is limited."[66] The tragedy of the commons is carried out at the scale of the global environment, with countries and corporations, rather than individual herders, acting in their own self-interest to the detriment of others. This phenomenon can be seen at the source of many of our environmental crises, including deforestation, overfishing and climate change.

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[64] Juan Martinez-Alier, "From Political Economy to Political Ecology," in Harris, Wise, Gallagher and Goodwin, eds. *A Survey of Sustainable Development*, p. 29.
[65] Garrett Hardin, "The Tragedy of the Commons," *Science* 162 (December 1968), p. 1244.
[66] *Ibid*., p. 1244.

In economic parlance, Hardin's tragedy of the commons is a market failure, in which the individual making the decision does not feel the total cost of grazing an additional animal. Human interaction with the environment is affected by costs that are not included in market prices or signals, leading to choices that are distorted by incomplete market prices.[67] These costs, or externalities, are not felt within the market, thus they do not accurately affect behavior through demand or supply. Public goods, which include most natural resources, are not privately owned, making them prone to tragedy of the commons situations, and require regulation to internalize externalities. A common example of a public good is clean air. When clean air becomes polluted, everyone suffers equally. The pollution is an externality, because the polluter pays no additional cost for the harm visited on everyone else, much as the herder in Hardin's scenario does not feel the full cost of overgrazing. Many social and environmental problems are caused by externalities, in which the responsible party, often making an economic decision, is not faced with the full cost of the consequences, which often occur in the human or natural systems.

The interaction between economic development and environmental quality is complex, and has generated a number of theories on the relationship between levels of development and environmental factors. The Environmental Kuznets Curve hypothesis (EKC) considers the interactions between ecological degradation and a nation's per capita income, and is often used to argue that economic growth presents a solution to environmental problems.[68] According to the EKC, environmental damage follows an

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[67] Gary Meffe and Ronald Carroll. *Principles of Conservation Biology* (Sunderland, Mass.: Sinaur Associates, Inc., 1997), p. 520.

[68] Stern, David "Progress on the Environmental Kuznets Curve?" in Harris, Wise, Gallagher and Goodwin, *A Survey of Sustainable Development*, p. 42.

inverted U-shaped curve as GNP per capita increases, such that damage increases up to a certain level of income, after which it improves without specific intervention. Upon first glance at a cross-sectional selection of countries, the hypothesis seems to hold. However, when taken longitudinally and examined in depth, there are many flaws in the theory, including the irreversibility of environmental damage, and the ability of wealthy countries to export environmental harms.[69] The ecological impacts of consumption by wealthy nations, combined with a global trade regime, support the conclusion that "the poorest countries of today will find it more difficult than today's developed countries to reduce their environmental impact as income rises."[70]

The phenomenon described in the Environmental Kuznets Curve – the correlation between increasing per capita income and decreasing environmental harm – can also be explained by the fact that wealthy countries are able to export environmental harms to less developed countries. As standard of living improves, people become more receptive to regulations that improve environmental quality, even if the increased regulation drives away some industries. The push of increased regulation that drives polluting activities out of developed countries is met by a corresponding pull from countries desperately seeking jobs and economic investment.[71] Developing country governments may reduce environmental and labor regulations to attract foreign companies. Arguably, there is a trade-off between jobs or economic growth and environmental quality, which is represented in upward slope of the Kuznets Curve, before it reaches its threshold. The theory relies, to some extent, on the ability of polluting industries to relocate to countries

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[69] *Ibid*., p. 44.
[70] *Ibid*., p. 45.
[71] Yearly, "Environment and the Compression of the Globe," in Held and McGrew, eds. *The Global Transformations Reader*, p. 378.

that have not yet reached that threshold. It is best applied as a national or regional model, which does not take into account the global total of environmental harm, but allows it to be relocated to regions outside of the model. Without innovation and technology transfer, the pollution that accompanies current production techniques will continue to burden the societies that can least afford to turn away jobs and investment. Sustainable development cannot be achieved by following the logic of the EKC, and simply waiting for economic growth to take care of environmental problems.

An Increasing Awareness

The past few decades have seen growth in the field of environmental economics, which deals with issues of externalities and management of natural resources, and the emergence of ecological economics, which focuses on the compatibility of human, economic and ecological needs over the long term.[72] As the negative effects of ignoring the interconnectedness of the economic, human and natural systems become more obvious, our awareness of their interactions has grown.

The modern environmental movement grew out of the industrial expansion during and after the Second World War, which exacerbated transboundary issues, such as pollution and waste, and their accompanying health threats. Concern over both natural resource use and pollution merged science, advocacy and social studies into what we now refer to as "environmentalism."[73] The growth of an international environmental agenda also paralleled the increasing transboundary issues of the 1960s. Prior to this time period,

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[72] Martinez-Alier, "From Political Economy to Political Ecology," in Harris, Wise, Gallagher and Goodwin, eds. *A Survey of Sustainable Development*, p. 29.

[73] William Cunningham, Mary Ann Cunningham and Barbara Woodworth Saigo, *Environmental Science: A Global Concern* (Boston, Mass.: McGraw Hill, 1997), p. 20.

most environmental problems occurred and were addressed within national borders. Scientific development and advancing public concern contributed to the emergence of international environmental policy-making, and the incorporation of political, economic and social impacts into the discussion.[74] In 1968, the United Nations General Assembly passed a resolution calling for a conference to address the state of the human environment. The Preparatory Committee for the process sought to raise international consciousness and promote action on the part of governments and international organizations.[75]

Several issues coalesced to provide momentum for the first international conference on the environment as a whole. First, shipping disasters and loss of wildlife led to international conventions on maritime pollution and wetlands preservation.[76] Second, the links between environmental degradation and human causes and consequences were becoming increasingly apparent. The publication of Rachel Carson's book, *Silent Spring*, brought public attention to the health risks associated with pesticides and pollution.[77] Also, Garrett Hardin's article on the "tragedy of the commons," and various studies on the risks of increasing population generated additional concern over human impacts on the planet.[78] The UN Conference on the Human Environment (UNCHE), held in 1972, represented a significant step toward defining "environmentalism" in international terms, and opened the door to a new approach to issues of economic development, poverty and environmental quality, which later became known as sustainable development.

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[74] Elliot, *The Global Politics of the Environment*, p. 7.
[75] *Ibid*., p. 11.
[76] *Ibid*., p. 8.
[77] *Ibid*, p. 9.
[78] *Ibid*, p. 10.

The UNCHE was held in Stockholm, and attended by 1200 delegates from 114 countries.[79] Non-governmental organizations (NGOs) established a parallel forum to provide input to the official process, which set the bar for future UN deliberations. The Communist bloc countries refused to participate, blaming capitalism for environmental degradation.[80] Many developing countries approached the conference with the suspicion that environmental concerns were a luxury of the wealthy, and convinced that pollution was a small price to pay for development.[81] The conference acknowledged the links between socioeconomic factors and environmental health, and made a commitment to combat the causes of degradation, including poverty and a lack of social and economic development, in addition to seeking technological cures for the symptoms.[82]

In the decades following Stockholm, awareness and understanding continued to increase, though international conferences, treaties and the creation of organizations and agencies overshadowed concrete actions, and thus results. Agreements now exist for almost every environmental issue, with the exception of forests and a few chemicals, yet few of these agreements have been implemented.[83] In spite of an impressive amount of activity on the international stage, there is little to show for the three decades of negotiations.

OUR CHILDREN'S INHERITANCE

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[79] *Ibid*., p. 12.
[80] *Ibid*., p. 11.
[81] Mostafa Tolba. *Global Environmental Diplomacy: Negotiating Environmental Agreements for the World* (Boston, Mass.: Massachusetts Institute of Technology Press, 1998), p. 2.
[82] *Ibid*., p. 2.
[83] Pamela Chasek, Editor and co-founder, *Earth Negotiations Bulletin*, interviewed by author, 6 December 2002, and Speth, interviewed by author.

The environment and development issues that the international community has become so adept at discussing are essential to the quality of life of generations to come. The Brundtland Commission defined the term as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs."[84] Yet we have grown little closer to achieving this vision. In fact, the very principles upon which sustainable development is founded are seldom followed by national governments. The goods and services that nature provides are of tremendous, if not infinite, value. For the most part, we understand what it would take, both economically and politically, to address many of the world's environment and development problems. Should we continue to ignore the progress in knowledge, understanding and consensus of the past three decades, in favor of our business-as-usual trajectory, we will find that the future costs far outweigh the present benefits.

The Principles of Sustainable Development

At the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro in 1992, the international community agreed to a set of 27 principles commonly referred to as the "Rio Principles."[85] Though these principles were codified in the Rio Declaration on Environment and Development and embraced in 1992 as fundamental to sustainable development, they have repeatedly been neglected and debated. In September of 2002, at the World Summit on Sustainable Development, countries once again argued over the merits of the Rio Principles. The path of sustainable

[84] United Nations General Assembly, "Report of the World Commission on Environment and Development,"
[85] United Nations General Assembly, "Report of the United Nations Conference on Environment and Development," A/CONF.151.26 (New York, N.Y., 1992).

development requires guiding principles, without which we are likely to stray toward less a less equitable and favorable future.

The Rio Principles declare the centrality of humans to sustainable development, but clarify that environmental and development needs should be balanced with concern for the welfare of central generations. Efforts to eradicate poverty and improve the position of the least well off people and countries are given special consideration. On the flip side, the principles encourage more sustainable patterns of production and consumption in developed countries, and the transfer of technology to developing countries. Cooperation is a central theme of the principles, included the description of common but differentiated responsibilities that arise from states' disparate contributions to environmental degradation and the variation in resources they control. At the domestic level, the principles encourage environmental legislation that internalizes environmental costs in economic mechanisms, forcing the polluter to pay for environmental damage. Additionally, the principles advocate a precautionary approach in the face of scientific uncertainty or irreversible damage. Public participation, including access to information, is another important element in dealing with environmental issues. Finally, the principles stress the indivisibility of peace, environmental protection and development. In theory, these principles constitute a strong framework to foster sustainable development; however, in practice they are all too often ignored.

The Value of Our Planet

The Rio Principles outline an ethical basis for treatment of the planet that places enormous value on the natural resources upon which we depend, and recognizes their

irreplaceability. The true value of the natural world is unknown, and though we could probably never replicate the harmony with which the natural world functions, people have not hesitated to come up with estimates of the economic value of nature. The failure of Columbia University's Biosphere experiment is a telling example of how far we are from a true understanding of the Earth's systems.[86] Regardless, we can assume that the costs of inaction today will be very great for our children.

Concrete examples of the value of nature's services become apparent once we assess the costs of their replacement. In Costa Rica, erosion caused by deforestation threatens the hydroelectric dams that provide the bulk of the country's energy. The reforestation needed to save the watershed will cost the government over $50 million. Deforestation could have been prevented at a cost of $5 million.[87] The immense value in natural processes is taken to its limit in a commonly cited article that adds up the expected cost of replicating all of nature's services, such as nutrient cycling and atmospheric functions, in an estimation of the value of our planet, which comes to $33 trillion, nearly twice the global GNP.[88]

Though the expected costs of reconstructing a ruined environment are daunting, more reasonable economic estimations apply to addressing the world's current problems by implementing the commitments that have emerged out of the past three decades. Indeed, the conferences held to generate these commitments have cost the United Nations and domestic governments billions of dollars over the past thirty years. The recent World

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[86] David Chandler. "Breathing Life into Biosphere 2: New team hopes fresh air, water resuscitate Arizona lab." *Boston Globe* 16 March 1995. p. 6. LexisNexis, Academic Universe. General News: Major Papers. 20 March 2003.

[87] Tolba, *Global Environmental Diplomacy*, p. 168.

[88] Robert Costanza, et al, "The value of the world's ecosystem services and natural capital," *Nature* 387 (May 1997), p. 259.

Summit on Sustainable Development had an estimated price tag of $55 million dollars, not including the costs of transportation, hotels, food or entertainment for the tens of thousands of delegates that descended on Johannesburg for two weeks.[89] Since UNCED in 1992, the United Nations has hosted at least eight other mega conferences on a variety of social and environmental issues.

The World Bank estimates a cost of $65 to $85 billion to eradicate extreme poverty and hunger, achieve universal education, combat disease and ensure environmental sustainability, almost half of which will need to go to environmental goals.[90] Again, this figure seems large until taken in context – it is only 0.5% of GDP from donor countries. Meeting this goal would require a doubling of current official development aid, but still less than the 0.7% of GDP pledged in Rio de Janeiro.[91] An additional 0.1% of Northern GDP can provide quality health care to the entire developing world.[92] Reducing trade protection in wealthy countries by half could benefit developing countries $200 billion by 2015.[93] A well-spent investment of $66 billion by 2015 could save 8 billion lives per year and yield sixfold economic benefits of up to $360 billion per year by 2020.[94] An estimated $6 billion is needed to provide education for all, $9 billion to provide water and sewerage for all, and $13 billion for health and nutrition for all. To

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[89] Thalif Deen and Farah Kahn, "For the UN, Talk is not Cheap: Gab-fest a money spinner for Johannesburg," *Inter Press Service*, 28 August 2002. http://www.globalpolicy.org/finance/unitedstates/2002/0828summit.htm. 24 February 2003.
[90] World Bank, "The Environment and the Millennium Development Goals," p. 18.
[91] United Nations Department of Public Information, "Johannesburg Summit Fact Sheets: Facts about Finance and Trade."
[92] World Bank, "The Environment and the Millennium Development Goals," p. 8.
[93] Millennium Development Goals. "Building a global partnership for development."
[94] United Nations Department of Public Information, "Johannesburg Summit Fact Sheets: Facts about Health."

put this in context, Europeans and North Americans spend $11 billion a year on ice cream and $17 billion a year on pet food.[95]

We have promised our children a future. The present costs of fulfilling our promise are great, but far less than the costs should we choose to ignore our commitment. We enter the new millennium with a grasp of the world's problems, and with a clear idea of what it would take to address them. However, we are still not poised for action. The institutional and ideological foundations needed for results are still far from concrete, though they have been deliberated time and again at much cost. It is clear that the processes of the era of mega summits have not led us to the results we desire. So the question remains, what will?

[95] Crossette, "Kofi Annan's Astonishing Facts!"

CHAPTER 2

APPROACHES to SUSTAINABLE DEVELOPMENT

With the arrival of the 21st century, the world faces an elaborate and complex set of problems that encompass a multitude of economic, social and environmental issues. People have grown impatient with the negotiations and consensus building that has characterized international efforts toward sustainable development over the past three decades. In all but a few cases, little progress has been made toward realizing improvements on the ground. Thirty years of deliberations have not produced an action plan, nor have they left the world poised on the brink of implementation.[96] The international system is struggling for an alternative to the well-worn path of summits and treaties to address issues of sustainable development. Not only are new models and methods countering traditional approaches, but the relationships of the actors are changing as well. Governments, the private sector and non-governmental organizations (NGOs) will all significantly impact the shape of sustainable development in the new millennium.

This chapter begins with an examination of the products of the past thirty years: the treaties, the commitments, and the agreements. I pay particular attention to the Millennium Development Goals as a summary of the commitments from past meetings. Exploring the processes and outcomes of the most recent summit, the World Summit on Sustainable Development (WSSD), leads to a discussion of why the world is turning away from negotiations as an answer to economic, social and environmental issues. Next, I look at the alternatives that have been proposed for the future, paying particular

[96] Speth, interviewed by author.

attention to UN's Millennium Project and the Type II Partnerships that emerged at WSSD. I then explore the changing roles of different actors in sustainable development, including governments, the private sector and NGOs. This section will also explore the tensions between Northern and Southern priorities.

INTERNATIONAL EFFORTS

For three decades, international actors have gotten together on a regular basis, at conferences, summits, meetings of the parties and United Nations sessions, to discuss issues, create declarations, negotiate treaties and set agendas. Certainly all of the meetings have generated improvements in awareness, consensus and, in some cases, have produced results and solutions. However, impatience with the old system of negotiations is growing.[97] This frustration was expressed in the mandate to focus the World Summit on Sustainable Development on implementation of already existing goals and identification of institutional and financial requirements, rather than the establishment of new objectives and commitments.[98] Yet Johannesburg proved that moving from negotiation to implementation is easier said than done. Other than a few additional commitments on sanitation and biodiversity, the only truly new product to emerge from the Summit was the creation of more than 250 Type II outcomes or partnerships. As our only new tool moving into the new millennium, will the new partnerships be sufficient to meet the need for results?

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[97] Doyle, interviewed by author.

[98] United Nations General Assembly, "Ten Year review of progress achieved in the implementation of the outcomes of the United Nations Conference on Environment and Development." A/RES/55/199 (New York, N.Y., 5 Feb 2001).

Moving Away from the Old

Many actors involved in sustainable development at the international level insist that the world does not need any more commitments at this stage – just implementing what we already have would be an enormous service to the current population and to future generations.[99] The past thirty years have produced agreements on every environmental issue, with the exceptions of a few chemicals.[100] The many treaties and conventions, and the follow up meetings for each, place a constant demand for monitoring upon member countries, to the point where reporting burdens may actually detract from the implementation process in poor countries.[101]

In 2000, the United Nations hosted the Millennium Summit as a review of the role of the UN, progress made, and challenges ahead.[102] The Millennium Development Goals (MDGs) emerged as a reaffirmation of the commitment to fight poverty and sustain development into the next century. The document consisted of eight concrete goals that represented a summary of past agreements from United Nations conferences.[103] The MDGs have been described as recycled goals that were never achieved, insofar as they simply reassert commitments from past meetings.[104] The broad nature of the eight goals suggests the breadth of their origins, which include the World Education Forum, the World Conference on Women,

Figure 3. Millennium Development Goals

1. Eradicate extreme poverty and hunger
2. Achieve universal primary education
3. Promote gender equality and empower women
4. Reduce child mortality
5. Improve maternal health
6. Combat HIV/AIDS, malaria and other diseases
7 Ensure environmental sustainability
8. Develop a global partnership for development

[99] Doyle, interviewed by the author.
[100] Chasek, interviewed by the author.
[101] Chasek, interviewed by the author.
[102] United Nations, "The Millennium Assembly of the United Nations." http://www.un.org/millennium. 24 February 2003.
[103] World Bank, "The Environment and the Millennium Development Goals," p. 21.
[104] Sachs, Opening address to the Millennium Project Task Force on Disease

the UN Conference on Environment and Development, and the World Health Assembly. The first seven goals target poverty and quality of life, focusing on hunger, education, gender equality, child and maternal health, disease and environmental sustainability. The eighth goal calls for a global partnership for development, which can be seen as the means for achieving the previous seven goals.[105] The goals are divided, more specifically, into 18 targets with 49 indicators associated with the targets.[106] Explicit timetables are associated with the goals, however, the objectives themselves may in some cases be unclear. For example, the first goal calls for reducing by half the number of people living on less than $1 per day by 2015, yet no one really knows how many people were living on $1 per day in 1990, or where they are located.[107]

While the Millennium Summit fulfilled its mandate to reaffirm and review the UN's role in the world and in development, the World Summit on Sustainable Development was not so successful in achieving its objectives. In recommending a follow up to the Rio summit, the United Nations General Assembly called for a focus on identifying barriers to implementation and defining the means necessary to achieve sustainable development.[108] Johannesburg demonstrated the difficulty of adjusting the course of a large bureaucracy evolved for negotiations. The Political Declaration from the WSSD reads much like the outcome of any other UN conference, and is notably lacking in the targets and timetables needed to organize implementation. Consensus among participants and within the United Nations is that Johannesburg did not produce

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[105] World Bank, "The Environment and the Millennium Development Goals," p. 21.
[106] Sachs, Opening address to the Millennium Project Task Force on Disease.
[107] *Ibid*.;
1990 is the baseline year for the MDGs
[108] United Nations General Assembly, "Ten Year review of progress achieved in the implementation of the outcomes of the United Nations Conference on Environment and Development."

anything new in terms of inter-governmental commitments.[109] Nitin Desai, Secretary General for the WSSD, describes the summit as a summary of the past three decades, which indicates certain things about the future. One, people are tired of talking; they want to see results on the ground. Two, transnational corporations must be made part of the sustainable development discussion because of the resources they control. Three, all countries must remain involved, while at the same time allowing for the credible participation of non-state actors.[110]

Though some would certainly argue that Johannesburg produced valuable results, few are clamoring for another large meeting.[111] In recognition of the limitations of international conferences, the UN has no further summits planned after early 2003.[112] Indeed, a substantial break from summits is one thing agreed upon by both the South and the North. Developing countries already feel overcommitted, and developed countries are reluctant to publicize their lack of progress in achieving the goals of past meetings.[113] A combination of frustration over the lack of implementation of international commitments, and the high cost of conferences contributed to the feeling of futility with which many actors approached the WSSD.[114] This frustration was part of the UN's motivation to focus on implementation in Johannesburg. When it became apparent that the official outcomes of the WSSD would be little more than another negotiated text, the

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[109] Anonymous, Member of the United Nations Commission on Sustainable Development, interviewed by the author, 17 December 2002.
[110] Nitin Desai, Secretary General for the World Summit on Sustainable Development, interviewed by the author, 21 November 2002.
[111] "After Johannesburg … Do UN Summits really accomplish much?" *Africa Online*. www.africaonline.com/site/Articles/1,3,49286.jsp. 3 February 2003.
[112] Doyle, interviewed by the author.
[113] Anonymous, interviewed by the author.
[114] Adil Najam, et al, "From Rio to Johannesburg: Progress and Prospects," *Environment* 44 (September 2002), pp. 26-38.

United Nations turned to another type of outcome: Type II Partnerships.[115] These partnerships brought together Northern and Southern governments, the private sector and NGOs, in commitments to specific projects to further the implementation of sustainable development commitments. Formal, intergovernmental agreements guide the substance of the partnerships, which were entirely voluntary in their formation, and encouraged self reporting on tangible results.[116] Beyond introducing the notion of partnerships to the United Nations, the WSSD made little progress toward solving the questions of whether implementation can be internationally coordinated, or whether the need for action on the ground can be achieved through top-down mechanisms. It did, however, make clear that another summit, producing more words on paper, will not solve the world's problems.

Locating the New

The movement away from the old methods for addressing international sustainable development issues is clear. As we discard one model, we must take up an alternative. Increasing emphasis has been placed on the need for local actions and solutions, yet grassroots initiatives do not solve broad international problems.[117] Several prominent practitioners in the field of sustainable development point to a lack of political will as a primary obstacle to implementation, and hint that some kind of catastrophe or jolt may be needed to catalyze action.[118] In the absence of a dramatic shift in international attitudes toward the urgency of these issues, several options present

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[115] Alison Drayton, Policy Adviser, United Nations Development Program, interviewed by the author, 17 December 2002.
[116] Jan Kara and Diane Quarless, "Guiding Principles for Partnerships for Sustainable Development," 7 June 2002. http://www.un.org/esa/sustdev/partnerships/guiding_principles7june2002.pdf. 27 March 2003.
[117] Calvert and Calvert, *The South, the North and the Environment*, p. 191.
[118] Chasek, interviewed by the author;
Anonymous, interviewed by the author

themselves as alternative methods to implementing international commitments. The World Business Council on Sustainable Development (WBCSD) explores possible scenarios for the future of sustainable development in an interesting theoretical report. Beyond the WBCSD's predictions, the Millennium Project hosted by the UN, is the only project currently underway with an explicit focus on follow up to the Millennium Development Goals. Finally, the WSSD infused the idea of partnerships for sustainable development with a new vitality and a central position on the international stage.

The World Business Council's "Exploring Sustainability" project examines the uncertainties of human response to environmental change by providing scenarios of potential reactions to the challenges of sustainable development.[119] Looking at different paths the future could take, WBCSD outlines three scenarios: FROG!, GEOpolity, and Jazz. First Raise Our Growth! (FROG!) describes a world very much like the present, in which emphasis is placed on economic growth at the expense of sustainability.[120] Currently, we are on a FROG! trajectory, made obvious by the lack of funding and political emphasis on sustainable development. The GEOpolity scenario is a step closer to sustainability, and acknowledges the impending social and environmental crises that accompany unfettered economic growth. In this scenario, governments and the private sector do not take sufficient initiative, so the world turns to new powerful institutions, such as a Global Environment Organization.[121] Finally, the Jazz scenario relies on

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[119] World Business Council on Sustainable Development. "Exploring Sustainable Development: Global Scenarios 2000-2050." Summary Brochure. 1997. http://www.wbcsd.ch/newscenter/reports/1997/exploringscenarios.pdf. 18 February 2003. p. 10.
[120] *Ibid*., p. 21.
[121] *Ibid*., p. 23.

bottom-up innovation and a dynamic market. Transparency and cooperation among many actors are the keys to this third and most sustainable scenario.[122]

The United Nations' Millennium Project is in the process of defining a route away from the FROG! path toward a more sustainable future. Organized by the United Nations as a follow up to the Millennium Development Goals, the Project seeks to detail plans of implementation for the MDGs. Ten task forces, each consisting of around twenty global experts, will spend three years assessing the measures needed to achieve the MDGs. The importance of knowing what it will take to meet the goals was emphasized by the Director of the Millennium Project, UN Special Adviser Jeffery Sachs, in his opening address to the Task Force on Disease.[123] The first wave of assessments highlighted the interconnectedness of the eight Goals, and the need for intensive, simultaneous action in several areas. For example, reducing poverty relies on lower fertility rates, which in turn demand improvements in education, health, gender equity and access to health services.[124] Just as the three components of sustainable development require simultaneous attention, improvements in one of the MDGs requires efforts in others. Funding, in the form of donor assistance, was identified as the top priority by the task forces. Even where service delivery, management and oversight is decentralized or controlled by communities or NGOs, an international financing structure is a crucial first step.[125] The Millennium Project embraces a model of top-down coordination and implementation that resembles the WBCSD's GEOpolity scenario. However, the one area that the project is not addressing in its pragmatic, action-oriented analysis of

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[122] *Ibid*., p. 25.
[123] Sachs, Opening address to the Millennium Project Task Force on Disease.
[124] Jeffery Sachs, "Suggested Priorities in Achieving the Millennium Development Goals," Preliminary Draft (New York, N.Y.: 3 January 2003), p. 1.
[125] *Ibid*., p. 2.

problems is that of funding. No matter how much detail and instruction is contained in the final product of the Millennium Project, without funding or political will, it will not automatically generate change.

The Type II Partnerships that emerged out of Johannesburg moved one step further than the Millennium Project on the path away from abstract discussion toward concrete action. We have learned through experience that neither strictly governmental activities nor pure non-governmental initiatives are able to achieve the desired sustainable development objectives, so partnerships are a logical next approach.[126] Though partnerships for development are not a new concept, the World Summit on Sustainable Development was the first time that they were at the center of an international meeting and embraced by the United Nations as a mechanism for problem solving. Partnerships have historically existed through what WBCSD would refer to as a Jazz approach to development. Bringing partnerships to the international level and placing them within the framework of the United Nations creates a sort of fusion between Jazz and GEOpolity.[127] Type II Partnerships are not without their potential downsides, however, and it will take significant development of their current structure to fully address the widespread and complex problems of sustainable development.

Partnerships are unique in the world of international negotiations, presenting a fundamentally different tactic than the inter-governmental commitments and top-down approaches that have been favored over the past thirty years. However, NGO representatives at the fourth preparatory meeting for the WSSD and in Johannesburg made it clear that there are intense doubts about the potential of achieving sustainable

[126] William Clark, Professor, Kennedy School of Government at Harvard University, interviewed by author, 13 December 2002.
[127] Speth, interviewed by author.

development through partnerships. Concerns focus on the potential for governments and companies to pick and choose the issues addressed through Type II Partnerships, and on the involvement of the private sector and its need to generate profit from these ventures.[128] NGOs involved in the Summit process also expressed doubts over the private sector's lack of transparency and accountability. Many of the partnerships announced at the WSSD include highly imbalanced partners, such as large transnational corporations and small countries or NGOs. On top of these concerns, the private sector's initial support of Type II Partnerships seems to have waned in the face of public disapproval and uncertain regulatory terms.[129] Though many were skeptical of private sector involvement, the financial resources and mobility it would have introduced to the process were essential to the success of partnerships. With no enforcement or management body, the Type II Partnership outcomes of the Summit have no guarantee of fruition. Of course, the many decades of intergovernmental treaties, even when signed and ratified, are not guaranteed to succeed, however partnerships may put more at stake. An unfulfilled treaty may lead to further environmental damage or continued disease burden; a failed partnership may result in the exploitation of a country or its people for the benefit of the private sector.[130]

The United Nations estimates that some $250 million has been committed through partnerships, though little of it is likely to be new money for sustainable development.[131] Donors tend to prefer concrete projects to funding agencies, so with the creation of

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[128] Clark, interviewed by the author.
[129] David Waskow, Friends of the Earth, presentation to WWS 402f, 4 March 2003.
[130] Drayton, interviewed by the author.
[131] United Nations Department of Economic and Social Affairs "Partnerships for Sustainable Development." 2002. http://www.johannesburgsummit.org/html/sustainable_dev/partnership_background.html. 2 February 2003.

partnerships within the structure of the UN, the United Nations agencies may be facing new competitors for funding.[132] The most steadfast supporters of the Type II Partnerships at the WSSD were the countries that had contributed to or stood to gain from partnerships.[133] Over a hundred countries are in need of immediate development assistance. If partnerships become the way forward, there is no method for ensuring that the benefits are distributed evenly or effectively prioritized. NGOs saw partnerships as a distraction from the more important commitments of the WSSD, and as an excuse used by governments to hold back from the inter-governmental negotiations. The United States, when questioned on their repeated removal of concrete commitments from the official documents at the WSSD, continually referred to the many Type II initiatives they had launched.[134] Partnerships demonstrate the changing roles and importance of states, NGOs and the private sector, which will have a profound impact on how sustainable development is carried out in the future.

KEY GROUPS OF ACTORS

The primary actors in sustainable development negotiations and implementation have been all levels of government, the private sector, and nongovernmental organizations, including intergovernmental institutions such the United Nations Development Program and donors such as the World Bank. The roles and interactions of these sectors have changed over the past thirty years, as notions of international involvement shift and evolve, and sectors gain or lose credibility. Looking to the future, the choices and behavior of all actors will determine the path and success of sustainable

[132] Drayton, interviewed by the author.
[133] *Ibid*.
[134] Waskow, presentation to WWS 402f.

development efforts. The three sectors are increasingly separated, yet the cooperation of all is ultimately necessary for a transparent and efficient move toward a sustainable future.[135] WBCSD's GEOpolity scenario takes a dismal view of the future roles of states and the private sector, favoring international agencies and NGOs, while the Jazz scenario incorporates all actors at all levels, particularly local interests and the private sector in a process that, under the correct conditions, is inherently more sustainable.[136]

The first sector to consider is the most traditional driver of development, the state. Type II Partnerships are one example of the trend of increased sidelining of governments in sustainable development activities. The current attitude toward governments within the United Nations has been described as one of dismissal, with the sentiment that progress will occur in spite of, not because of governments.[137] Industrialized countries increasingly view the United Nations as unimportant, preferring the G8, the World Trade Organization (WTO), or the Organization of Economic Cooperation and Development (OECD) for matters of international governance.[138] Though the trend is real, too much of a shift away from governments would be detrimental to sustainable development efforts.[139] The involvement of the state at all levels is essential to sustainable development, because of the demand for investment in human capital. Services such as education, healthcare and infrastructure will be neglected without government intervention.[140] Though many of the problems that are central to sustainable development are transnational in nature, the current system relies on sovereign states,

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[135] Minu Hemmati, Project Coordinator, UNED Forum, interviewed by the author, 11 November 2002.
[136] World Business Council on Sustainable Development. "Exploring Sustainable Development," pp. 3-7.
[137] Drayton, interviewed by the author.
[138] Anonymous, interviewed by the author;
[139] Speth, interviewed by the author.
[140] Timothy Wise, "Local and National Strategies: Overview Essay," in Harris, Wise, Gallagher and Goodwin, *A Survey of Sustainable Development*, p. 298.

which inevitably act in their own interest, presenting an obstacle to cooperation.[141] Though notions of state sovereignty are changing with increasing globalization and international problems, national governments are likely to remain key players in sustainable development.

Governments themselves are not complaining about their dwindling prominence in international sustainable development, because with this decreasing standing comes decreasing responsibility.[142] A smaller role enables them to pick and choose their actions, potentially avoiding controversial or difficult issues.[143] Reduced prominence on the international agenda regularly translates into low domestic priorities for sustainability. Local authorities are perhaps the most crucial government actors for sustainable development since they are closest to where implementation must occur.[144] At a variety of scales, the onus of sustainable development is shifting from the state to NGOs and the private sector.[145] The government of the United States, for example, repeatedly refers to Type II Partnerships in defense of their inaction.[146] Concurrent with these trends, the private sector has replaced national governments as the primary target for NGO pressure, decreasing the emphasis on state responsibilities toward sustainable development.[147]

Non-governmental organizations, including civil society groups, are ever more able to influence other actors in the sustainable development arena. Because of publicity, legal recourse and activist campaigns, NGOs can be credited with mobilizing

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[141] Anonymous, interviewed by the author
[142] Drayton, interviewed by the author.
[143] *Ibid*.
[144] Desai, interviewed by the author.
[145] Rosalie Gardner, UNED Forum, interviewed by the author, 14 November 2002.
[146] Sachs, Opening address to the Millennium Project Task Force on Disease.
[147] Hemmati, interviewed by the author.

governments and the private sector to act more sustainably. The presence of NGOs and civil society groups in international sustainable development has grown immensely over the past thirty years. Only 134 organizations attended the summit in Stockholm. In Rio de Janeiro, the number of NGOs had grown to 1400, resulting in an unprecedented show of public participation and awareness in an international summit.[148] In Johannesburg, over 3,000 organizations were accredited, though not all sent representatives to the Summit.[149] In spite of an increasing presence, the actual influence of NGOs within large negotiations is limited to their ability to introduce transparency and accountability to the process.[150]

Public participation at international conferences is not without its own problems. In many cases, NGOs are less accountable than governments or the private sector in terms of actually representing the groups for which they claim to speak.[151] Wealthy, Northern NGOs are often much better represented and organized than their Southern counterparts, resulting in the overemphasis of certain viewpoints and concerns.[152] Additionally, NGOs are often distracted from the important work that has to occur on more local levels by the hype of large international summits.[153] The benefits of public participation, that include greater symmetry between local needs and decision-making outcomes, are better generated at local and national levels, through lobbying and awareness efforts. Progress toward implementing commitments requires not only

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[148] Calvert and Calvert, *The South, the North and the Environment*, p. 199.
[149] Johannesburg Summit Secretariat. "Accreditation of Major Groups in the WSSD Process." 2002. http://www.johannesburgsummit.org/html/major_groups/preregistration.html. 3 February 2003.
[150] Shelley Preston, "Electronic Global Networking and th NGO Movement: The 1991 Rio Summit and Beyond," *Swords and Ploughshares: a Chronicle of International Affairs* 3 (Spring 1994).
[151] Gardner, interviewed by the author.
[152] *Ibid*.
[153] Adil Najam, Professor of International Relations, Boston University, interviewed by the author, 20 November 2002.

different actions by governments and the private sector, but the involvement of different kinds of NGO participants, ones that are involved in implementation on the ground.[154] Though the mechanisms for participation remain imperfect, non-governmental involvement in decision-making processes is essential to ensuring transparency and accountability in local, national and international government and private sector sustainable activities.

At this point, NGOs are important monitors and regulators for the private sector, particularly as governments become less involved in ensuring the social and environmental sustainability of corporate activities. The private sector controls most of the world's productive assets, and extracts and processes the bulk of utilized natural resources.[155] This economic power translates into political and cultural power that can coerce and influence governments and the public.[156] The power imbalance between transnational corporations and many states means that governments may no longer be effective regulators of private sector activities.[157] In the face of these changing dynamics, many NGOs advocate self-regulation and market pressure such as changing consumer preferences, exercising boycotts and creating certification programs. Like no other actor, corporations have the financial and institutional resources to implement the world's commitments to sustainable development. The extent of corporate influence over the potential of sustainable development is difficult to ignore; the challenge remains to find incentives for increasing corporate responsibility. Even the United Nations has officially welcomed corporations into sustainable development through the creation of Type II

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[154] Hemmati, interviewed by the author.
[155] Neva Goodwin, "Taming the Corporation: Overview Essay," in Harris, Wise, Gallagher and Goodwin, A Survey of Sustainable Development," p. 261.
[156] *Ibid*., p. 261.
[157] Hemmati, interviewed by the author.

Partnerships at the WSSD. Though NGOs protested unregulated corporate involvement, open involvement of the private sector in international conventions may increase public pressure for private sector transparency. Many NGOs called for mandatory reporting or the creation of a binding convention on corporate accountability, yet few governments were willing to show their support for such measures.[158]

Northern and Southern Priorities

The priorities of international commitments vary not only in the eyes of the different types of actors in the sustainable development arena, but are also broadly divided along a North-South continuum. The differences between Northern and Southern perspectives are highlighted by the following story. At the final preparatory meeting for UNCED, the negotiations on the final text had stretched into the night of the last day, and the delegates seemed at an impasse. Finally, the negotiator from Canada stood up and reprimanded the group, arguing that all they needed to produce was a document that his grandchild could hang on her wall, stating that his generation cared about her generation. The room was silent until the delegate from Senegal stood up and replied that little girls in his country did not have walls on which to hang things.[159]

The two negotiators had very different ideas about the objectives of the declaration. To the Canadian, it was a symbolic outcome affirming the importance of environment and development issues. To the Senegalese, however, the declaration held the potential to address the dire circumstances facing his country. Even at the earliest environment and development negotiations, in Stockholm in 1972, Northern and

[158] Speth, interviewed by the author.
[159] Najam, interviewed by the author.

Southern governments had different notions of what was being negotiated and how the outcomes would be implemented. Northern governments left Stockholm believing that they had produced a set of commitments that would be achieved through national implementation by each of the attending governments. Southern countries, on the other hand, considered the Stockholm outcomes to be global commitments that would come about through the cooperation of all governments.[160] Many negotiations have broken down or failed because of tensions between Northern and Southern representatives, which according to some, are rooted in historic power imbalances.[161] The needs, threats and potential solutions are often very different for developed and developing countries. For example, Northern countries often place an emphasis on governance and policy as a means for achieving sustainable development, because in the North, laws lead to results. The same is not true in the South, making developing country representatives unwilling to relying upon governance.[162]

Common North-South divides revolve around issues of who should assume responsibility for today's environmental problems. A frequent debate questions whether overconsumption in the North or overpopulation in the South contributes more to environmental degradation.[163] The South also takes a historical perspective, invoking the polluter pays principle to argue that the North should pay for the damage done during its development.[164] Similarly, the South claims a right to development and to enjoy the

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[160] Anonymous, interviewed by the author.
[161] Timothy Wise, "Global Perspectives: the North/South Imbalance," in Harris, Wise, Gallagher and Goodwin, *A Survey of Sustainable Development*, p. 79.
[162] Anonymous, interviewed by the author.
[163] Wise, "Global Perspectives: the North/South Imbalance," in Harris, Wise, Gallagher and Goodwin, *A Survey of Sustainable Development*, p. 84.
[164] *Ibid*., p. 85.

standard of living that the North takes for granted.[165] The North replies that if Southern development follows the patterns of already-industrialized countries, humans will quickly exceed the carrying capacity of the planet. However, the North is unwilling to discuss its own unsustainable patterns of production and consumption, or question the precedent for the very development patterns that it does not wish the South to emulate.[166] Because of this, Southern states accuse the North of eco-imperialism, charging the North with an ecological debt taken in resources from the South.[167]

Both the North and the South are a long way from realizing a sustainable future. Most basic to the achievement of this goal is the need for cooperation. Self-interest and debate over who is to blame for the current environment and development crises does not lead to solutions. Just as states, NGOs and the private sector must come together to work toward implementation, industrialized and developing nations must cooperate for the future. The well-being of any one country is not independent from the welfare of the others in transboundary issues such as environmental quality or trade. In the long-term, each country has an interest in assuring that others develop sustainably or move toward sustainable patterns of production and consumption.

Where to now?

In addressing the Millennium Project Task Force on Disease, a member of the team asked where the money would come from to implement the plan drawn up by the Task Force. Jeffery Sachs, the Director of the project, confidently responded that the 0.7% official development aid commitments from Northern countries would be more than

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[165] *Ibid*., p. 85.
[166] Calvert and Calvert, *The South, the North and the Environment*, p. 188.
[167] *Ibid*., p. 188.

sufficient to meet the Millennium Development Goals.[168] While Sachs is in all likelihood right about the financial demands of the MDGs, the ODA commitments may the most difficult goal to reach. With the current lack of Northern government priority toward sustainable development, these commitments will not automatically be fulfilled upon the presentation of a sound plan, as Sachs seems to suggest. Additionally, even with the necessary funding, it is uncertain that even an incredibly detailed plan of implementation by the Millennium Project Task Forces would lead to achievement of the MDGs. The biggest deficiencies may not be in funding, but in the institutional infrastructure and cooperation needed for the implementation of international sustainable development commitments.

Partnerships are, the most prominent alternative to centralized implementation currently under discussion, yet there is little guarantee that partnerships will address the most pressing and difficult issues and regions of sustainable development. As we look to the future, it is important to draw on examples from to past to explore the paths toward successful achievement of environment and development goals. It is with this objective in mind that I turn to case studies of the two most outstanding successes of the latter half of the 20th century.

[168] Sachs, Opening address to the Millennium Project Task Force on Disease.

CHAPTER 3

CASE STUDIES: SMALLPOX AND OZONE DEPLETION

The previous two chapters have been broad explorations of sustainable development issues, of the methods used in attempts to address these issues, and of the primary actors involved in negotiating and implementing sustainable development agreements. To further ground my analysis of future implementation of sustainable development commitments, I have selected two case studies of successful international responses to economic, social or environmental issues. From these case studies, I hope to draw conclusions on the conditions that allow movement from meetings to implementation, and create incentives for cooperation and action at all levels.

I have chosen to look at the eradication of smallpox and the reversal of ozone depletion as case studies of successful international initiatives. Looking over the hundreds of treaties, declarations and commitments in trade, poverty, health, education and environment over the past several decades, it is difficult to find cases that have yielded conclusive positive outcomes. I chose to examine smallpox and ozone because both health and atmosphere are central areas of sustainable development, and also because they are two of the most outstanding instances of response to an international problem. Judging the effectiveness of an international effort through the extent to which it addresses the problem in question, smallpox is an obvious first choice. The eradication of smallpox in 1980 was the first and last time a human disease would become extinct through human effort.[169] Smallpox represents the seminal success in disease control,

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[169] Jonathan Tucker, Scourge: The Once and Future Threat of Smallpox (New York, N.Y.: Atlantic Monthly Press, 2001), p. 3.

while ozone is heralded as the role model for international environmental treaties. The Montreal Protocol on Substances that Deplete the Ozone Layer is often seen as the most successful example of international environmental cooperation and law.[170] Together, the cases represent the best of the efforts of the past decades to address the many human and environmental issues of sustainable development.

I will present both cases, first exploring how they appeared on the international agenda, and how a goal was set for addressing the problems. Then I will turn to the implementation of that goal, and look at the ways in which the international community was able to move from meetings to implementation. I will look to the roles of different actors, the phases of the implementation process, and difficulties encountered along the way. Finally, I will look specifically at what made the goals feasible, including importance of appropriate technology, incentives and cooperation. Once both of the cases have been laid out, I look to draw conclusions on what conditions allow international commitments to become reality.

SMALLPOX ERADICATION

For millennia, humans lived with smallpox, a disease that took more lives than the bubonic plague and all the wars of the twentieth century combined.[171] The first suggestions of eradication came from Alfred Jenner shortly after his discovery of a smallpox vaccine in the late 1700s.[172] However, build up of infrastructure and international political will took nearly 200 years to reach levels where the goal of

[170] Elliot, *The Global Politics of the Environment*, p. 53.
[171] Tucker, Scourge: *The Once and Future Threat of Smallpox*, p. 3.
[172] *Ibid*., p. 25.

eradication could become reality.[173] From an epidemiological standpoint, eradication of smallpox was fairly straightforward, though significant obstacles such as international cooperation and infrastructure development stood between the objective and its implementation.[174] Eradication required: first, the acceptance of the goal by the international health and political communities; second, a strong implementation phase; third, technical feasibility combined with coordination of Northern and Southern goals and international and domestic efforts.

Setting the Goal

Though smallpox eradication was proposed in the 18th century, it was brushed off as unrealistic until the 1900s, when the World Health Organization began to take on a series of global eradication campaigns, including hookworm, yellow fever and malaria.[175] In 1958, the Soviets attended the World Health Assembly after ten years of boycott. At the meeting, the Soviets proposed a five-year plan for the eradication of smallpox, referring to the success of their own domestic eradication campaign and the high cost of avoiding importation of cases from neighboring countries as reasons for prioritization of global eradication.[176] Recent experience with the expensive and largely unsuccessful malaria eradication efforts made the international health community unwilling to take on another onerous campaign. At the same time, WHO was also anxious to appease the Soviets after their long absence.[177] The Assembly unanimously approved the Soviet

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[173] Ibid., p. 38.
[174] F. Fenner, D.A. Henderson, I. Arita, Z. Jezek and I.D. Ladnyi, *Smallpox and its Eradication* (Geneva, Switzerland: World Health Organization, 1988), p. 422.
[175] *Ibid*., pp. 366-379.
[176] *Ibid*., p. 366.
[177] Tucker, *Scourge: The Once and Future Threat of Smallpox*, p. 47.

proposal, but allocated only $300,000 and a staff of two to the campaign.[178] Smallpox eradication received little attention between 1959 and 1966, due to the large discrepancy between the campaign's budget and its ambitious objectives, and WHO's malaria eradication efforts consumed most of the resources for international eradication campaigns.[179]

Five countries began eradication programs in the early 1960s under the WHO campaign, though they lacked organization, money and manpower, and hence, made little progress.[180] The first phase of the smallpox eradication campaign consisted mainly of consensus by the World Health Organization, with little progress on political, financial or institutional fronts. The Soviets persevered in their commitment to the smallpox campaign, continuing to badger WHO when they felt the organization was neglecting its commitments.[181] In spite of continued Soviet pressure, it was not until the United States rallied behind the campaign that things really shifted toward implementation.[182] In 1965, D.A. Henderson, an administrator in the U.S. Center for Disease Control (CDC), suggested that the United States expand a measles vaccination program in West Africa by branching out into smallpox eradication.[183] Henderson did not expect his suggestion to be accepted, but President Lyndon Johnson, looking for an initiative to announce as the U.S. contribution to the United Nations International Cooperation Year, announced support for the program. The announcement set into motion the wheels for greater focus on smallpox eradication and launched D.A. Henderson to a position of importance within

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[178] *Ibid*., p. 47.
[179] Fenner, et al, *Smallpox and its Eradication*, p. 393.
[180] Tucker, *Scourge: The Once and Future Threat of Smallpox*, p. 47.
[181] Fenner, et al, *Smallpox and its Eradication*, p. 390.
[182] *Ibid*., p. 419.
[183] Tucker, *Scourge: The Once and Future Threat of Smallpox*, pp. 54-55.

the international campaign.[184] With the increased interest from the United States, and a new, more receptive director in WHO's Communicable Diseases department, smallpox eradication gained funding and support.[185] Subsequently, the World Health Organization established a Smallpox Eradication Unit, and the eradication program moved into its second, intensified phase in 1966.[186]

Implementing the Goal

The Smallpox Eradication Unit, headed by D.A. Henderson, was based in Geneva and worked with four semi-autonomous regional WHO offices to implement the program.[187] The Eradication Unit's Intensified Plan of Action for smallpox eradication focused on a basic structure for program execution, rather than prescriptive plans that ignored the variations in countries resources and the status of the disease from place to place.[188] The flexibility of the campaign facilitated cooperation between international efforts and domestic contributions. In each endemic country, national vaccination campaigns were integrated with the general public health services, though WHO played a coordinating role overall.[189] Each country was responsible for its own campaign, but received support and incentives to participate through training of local health officials, vaccine donations, vehicles, and technical and administrative assistance.[190] WHO placed between two and four international staff in each country actively engaged in the campaign, though at no time were more than 100 employees in the field, which allowed

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[184] *Ibid*., p. 56.
[185] Fenner, et al, *Smallpox and its Eradication*, pp. 405-406.
[186] *Ibid*., p. 410.
[187] Tucker, *Scourge: The Once and Future Threat of Smallpox*, p. 64.
[188] Fenner, et al, *Smallpox and its Eradication*, p. 410.
[189] *Ibid*., p. 369.
[190] *Ibid*., pp. 394-395.

bureaucratic and staffing costs to remain at a minimum.[191] Instead, these field staff established programs to train the domestic health system to produce and administer vaccines, to recognize smallpox cases and to accurately report, for a more sustainable and acceptable campaign.[192] Provision of vehicles, money and vaccines earned the cooperation of many countries that were unwilling to commit to an eradication campaign.[193] The overall success of the program depended on the cooperation of national governments and domestic health regimes with the international efforts.[194]

During the early stages of the campaign, before the Smallpox Eradication Unit had developed its program, twenty-four countries eradicated the disease through their own efforts, in spite of a lack of technical assistance.[195] Twenty-six more countries achieved eradication of smallpox during the latter stages of the campaign, with the help of the Smallpox Eradication Unit. The top-down strategy began with mass vaccination campaigns that relied on the epidemiological knowledge that vaccinating 80 percent of most populations would be sufficient to halt a smallpox epidemic.[196] As scientific knowledge progressed, the program and its policies were able to evolve to engage the most sophisticated techniques. In 1967, WHO adopted a two-pronged strategy that continued to rely on mass vaccination for countries with high rates of smallpox.[197] For countries with large, rapidly growing and mobile populations or where the occurrence of smallpox was rare, the campaign adopted a surveillance-containment vaccination strategy

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[191] Tucker, *Scourge: The Once and Future Threat of Smallpox*, p. 65.
[192] Fenner, et al, *Smallpox and its Eradication*, pp. 394-395.
[193] Tucker, *Scourge: The Once and Future Threat of Smallpox*, p. 67.
[194] *Ibid*., p. 66.
[195] Fenner, et al, Smallpox and its Eradication, pp. 404-405.
[196] Ibid., p. 369.
[197] Tucker, *Scourge: The Once and Future Threat of Smallpox*, p. 76.

that proved more efficient and effective than mass vaccination.[198] In both cases, the strategy was conformed to the situation of each country and the demands of the local health authorities. India and the Middle East proved to be the most difficult sites for eradication, presenting significant obstacles to harmonization of top-down and bottom-up efforts. India's highly mobile and rapidly growing population posed technical difficulties, while several Middle Eastern countries refused to report accurate numbers and covered up outbreaks.[199]

In 1965, at the start of the second phase of the eradication campaign, people in over 50 countries were suffering from smallpox, and the international health community felt that the goal of eradication was infeasible.[200] As late as 1967, over 15 million cases of smallpox were occurring annually, with over 2 million deaths.[201] Through a centrally coordinated, but locally implemented campaign that lasted over two decades and employed 150,000 people during its course, smallpox became the first human disease to have been eradicated from the planet.[202]

Feasibility

The Smallpox Eradication Plan was a success because of a combination of factors, including the nature of the problem, the incorporation of technical innovation, incentives for cooperation at all levels, and coordination among international players and between international and domestic actors. The epidemiological characteristics of smallpox made it the ideal candidate for eradication. Smallpox was highly fatal, with a

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[198] Ibid., p. 75.
[199] Ibid., p. 85.
[200] Fenner, et al, *Smallpox and its Eradication*, p. 419.
[201] Tucker, *Scourge: The Once and Future Threat of Smallpox*, p. 62.
[202] *Ibid*., p. 3.

short infection time, easily diagnosed, and either killed victims or left them immune to reinfection.[203] With no animal vector or host, eradication from the human population ensured the end of the disease.[204] The practice of intentional infection with a mild variation of the disease to prevent later infection had been practiced since 1000 B.C., though the risk of complication outweighed the benefits in all but the most infection-prone societies.[205] Even as the vaccine itself was improved to minimize potential infection, delivery remained an obstacle. Innovation and the participation of the private sector pushed the campaign forward on two separate occasions. The development of a freeze-dried vaccine in the 1950s, which was made freely available to all laboratories, allowed the vaccine to withstand high temperatures, making fieldwork less expensive and burdensome.[206] The invention of the bifurcated needle in the late 1960s increased the success rates of vaccination and decreased the amount of vaccine needed for successful vaccination.[207] The needle was extremely inexpensive to manufacture and easy to use, benefits that were furthered by the agreement from the needle's patent-holder to waive licensing fees for developing countries participating in the smallpox eradication campaign.[208]

Though technology and the nature of the disease made eradication feasible, it was cooperation and coordination among actors, both domestic and international, that pushed the campaign forward. The support of Northern countries forged a strong central core for the program, which combined, through incentives and technical support, with substantial

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[203] *Ibid*., p. 63.
[204] *Ibid*., p. 46.
[205] *Ibid*., p. 15.
[206] *Ibid*., p. 37.
[207] *Ibid*., p. 72.
[208] *Ibid*., p. 73.

bottom-up efforts in endemic countries. Once international support solidified, D.A. Henderson became a pivotal force in implementing the eradication plan. Henderson compiled an extremely effective international team by selecting individuals based on enthusiasm, idealism and determination rather than technical expertise.[209] Each member of the Smallpox Eradication Unit spent at least one-third of their time in the field, giving everyone a solid grasp of local conditions and aligning decision-making with implementation needs.[210] The most top-down components of the campaign remained directly linked to the problems on the ground, keeping the focus on implementation and away from abstract planning. In its fusion of top-down with bottom-up techniques, Henderson's team was unconventional, bending rules and skirting international procedures to achieve results.[211]

Neither WHO nor the Smallpox Eradication Unit had the power to command or coerce governments into following the eradication plan or contributing domestic support to the campaign.[212] Instead, they relied on the creation of incentives through offers of assistance and tools of political pressure to gain cooperation. Many countries came on board through offers of money, vehicles and vaccines donated by the campaign.[213] The lethal nature of the disease in most endemic countries meant that the governments could not, for political reasons, refuse WHO's offer once the domestic sacrifices were minimized. Progress reports for each country involved in the campaign were published in the *Weekly Epidemiological Record*, giving countries incentives to step up the campaign to avoid bad reviews. Similarly, smallpox eradication was included on every

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[209] *Ibid*., p. 65.
[210] *Ibid*., p.66.
[211] *Ibid*., p. 64.
[212] Fenner, et al, *Smallpox and its Eradication*, p. 422.
[213] Tucker, *Scourge: The Once and Future Threat of Smallpox*, p. 67.

meeting agenda for the World Health Assembly, prompting many countries to launch new initiatives or step up efforts before the meetings to that their ministers would be able to report favorably at the annual meetings. [214]

Unlike many health and sustainable development issues, both developing and industrialized nations had an interest in seeing smallpox eradicated. Developing countries, which bore the main burden of the disease, favored the eradication campaign as long as they received sufficient assistance from the international community.[215] Though many countries had internally eradicated the disease by the start of the 1960s, outbreaks caused by importations from endemic countries caused even smallpox-free countries to push for eradication.[216] For example, the United States was spending $150 million per year in the mid-1960s on prevention, including monitoring and testing travelers, maintaining health records, vaccinating the population, and other bureaucratic costs.[217] Obviously, a straightforward, centralized campaign would be unable to address many of the complex problems of sustainable development, but the difficulties experienced even in the case of smallpox points to the importance of international cooperation and shared objectives.

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[214] *Ibid*., p. 67.
[215] *Ibid*., p. 58.
[216] Fenner, et al, *Smallpox and its Eradication*, p. 388.
[217] Tucker, *Scourge: The Once and Future Threat of Smallpox*, p. 58.

THE MONTREAL PROTOCOL ON SUBSTANCES THAT DEPLETE THE OZONE LAYER

Ozone depletion was the first truly global environmental issue to challenge international science and diplomacy.[218] For years, people had been aware of the important role that ozone plays in the stratosphere, blocking harmful ultraviolet radiation (UVB).[219] In the mid-1970s, the hypothesis emerged that the chlorine from chlorofluorocarbons used in the home could react with and damage ozone in the stratosphere.[220] Loss of the ozone layer affected everyone, regardless of their role in the emission of ozone depleting substances (ODSs). In the face of such a global problem, the United Nations, national governments, scientists and NGOs came together in an unprecedented show of cooperation, and resolved to address the problem of ozone depletion.[221] Like in the case of smallpox, halting ozone depletion required international consensus on the goal, a successful implementation phase, technical feasibility and both vertical and horizontal cooperation. Ongoing scientific discovery played an important role in supplementing each element of the diplomatic and implementation processes.

Setting the Goal

In the early 1970s, people became aware that ozone production and depletion in the stratosphere were in a delicate balance, one that could be disrupted by human

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[218] Elliot, *The Global Politics of the Environment*, p. 53.
[219] Tolba, *Global Environmental Diplomacy*, p. 56.
[220] Elliot, *The Global Politics of the Environment*, p. 54.
[221] Stephen Andersen, *Protecting the Ozone Layer: the United Nations History* (London, U.K.: Earthscan Publications, 2002), p. 345.

activities.[222] At the same time, they began to link human caused ozone depletion and the corresponding increase in ultraviolet radiation to skin cancer, cataracts, immune system suppression, and decreased ecosystem productivity.[223] Tests revealed that CFCs were accumulating in the atmosphere and had spread to areas far from their release sites.[224] Together, these findings sparked international response from all sectors. The United States National Academy of Sciences established the Panel on Atmospheric Chemistry, which concluded in 1976 that CFCs were destroying the ozone layer.[225] Even the private sector got involved through a manufacturer's meeting to discuss the potential harms of CFC production, organized by DuPont Chemical.[226] The United Nations Environment Program called a meeting of experts in 1977 that produced the World Plan of Action on the Ozone Layer, which emphasized the need for further study.[227] Executive Director of UNEP, Mustafa Tolba convened a group to draw up a draft of a convention on ozone protection at the 1981 UNEP Governing Council meeting.[228] The following year, the first draft convention outlined the issues that would be the focus for negotiations between 1982 and 1985.[229]

In 1985, at the UNEP sponsored Vienna Convention for the Protection of the Ozone Layer, countries agreed that action was needed on ozone loss, but failed to agree on specific measures.[230] Though consensus had been achieved on the correct objective, the international community remained far from a means for implementing that objective.

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[222] *Ibid*., p. 7.
[223] Elliot, *The Global Politics of the Environment*, p. 54.
[224] Andersen, *Protecting the Ozone Layer*, p. 8.
[225] *Ibid*., p. 11.
[226] *Ibid*., p. 8.
[227] Elliot, *The Global Politics of the Environment*, p. 54.
[228] *Ibid*., p. 54.
[229] Andersen, *Protecting the Ozone Layer*, pp. 55-58.
[230] *Ibid*., p. 59.

UNEP collaborated with other international and United States agencies to form the International Ozone Trends Panel (OTP) to further scientific research and explore the actions required to halt ozone depletion.[231] Simultaneously, negotiations began for a diplomatic meeting planned for 1987, to produce a protocol to the Vienna Convention that would outline a plan of implementation for the goals laid in 1985.[232] Between the mid-1970s and the 1987 meeting, considerable progress occurred on scientific and diplomatic fronts, preparing the international community for action.

Implementing the Goal

Negotiations concluded in 1987 on the Montreal Protocol on Substances that Deplete the Ozone Layer, which put forward binding limits on the production and consumption of ozone depleting substances. The chemicals were bundled into two "baskets," one consisting of CFCs and one consisting of halons.[233] Limits on the chemicals were set relative to a 1986 baseline, and called for a freeze followed by a 50 percent cut in CFCs and a freeze on halons.[234] Flexibility in the specific reductions within the baskets allowed countries to select the most efficient methods for meeting the demands of the Protocol. In response to developing country concerns that the Protocol would constrain their growth, nonindustrialized countries were given a 10 year grace period on the commitments in exchange for cooperation.[235] Before the Montreal meeting had concluded, many realized that the provisions in the Protocol would be insufficient to

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[231] *Ibid*., p. 20.
[232] *Ibid*., p. 73.
[233] Elliot, *The Global Politics of the Environment*, p. 56.
[234] *Ibid*., p. 56.
[235] Andersen, *Protecting the Ozone Layer*, p. 101.

halt the depletion of the ozone layer.[236] Stronger limitations on ODS production and consumption would have to be combined with increased incentives for cooperation to make the Protocol a success. Fortunately, the Protocol had included an innovative mechanism that allowed adjustments in the limits on chemicals already under the Protocol to go into effect without ratification by individual countries.[237]

In subsequent meetings of the parties (MOPs) to the Montreal Protocol, adjustments and amendments to the Protocol made it into the success story it represents today. At MOP 2 in 1990, the parties committed to phaseout of ODSs by 2000, and established the $240 million Multilateral Fund for the Implementation of the Montreal Protocol.[238] The Fund was established in response to the concern that the good achieved through implementation in industrialized nations would be undone by increasing use of ODSs in the developing world. The Fund was a way of easing the transition for developing countries, encouraging them, through financial support, to begin progress toward compliance with the Montreal Protocol before their commitments came into effect.[239] In 1991, at the 3rd MOP, the parties adopted trade sanctions as a means of enforcement against any nation not party to the Protocol. The amendment prohibited the import and export of substances, and products containing substances, controlled by Protocol to or from non-member states.[240]

As of 2002, the Montreal Protocol has been ratified by 183 countries.[241] Developed country compliance with the terms of the Protocol has been high though

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[236] *Ibid*., p. 95.
[237] Elliot, *The Global Politics of the Environment*, p. 56.
[238] Andersen, *Protecting the Ozone Layer*, p. 125.
[239] Elliot, *The Global Politics of the Environment*, p. 57.
[240] Andersen, *Protecting the Ozone Layer*, p. 130.
[241] *Ibid*., p. 345.

regionally varied. Production and consumption of ODSs globally has fallen below the target levels.[242] Use has increased in many developing countries and economies in transition, though they could still meet their obligations under the Protocol because of the phase in mechanism for non-industrialized nations.[243] Research has shown that the concentration of ozone depleting substances in the troposphere peaked in 1994, and has been declining ever since.[244] Because of these accomplishments, Montreal has been called the most successful example of an environmental treaty, combining international cooperation, technological innovation, and scientific research in the face of a global problem.[245] Challenges to the Protocol remain, particularly as developing country limitations come into force, and as additional ODSs are discovered and the Protocol is forced to undergo constant amendments that, unlike adjustments to substances already under the Protocol, must be ratified by member states.

Feasibility

The success of the Protocol is due to a variety of elements, including scientific progress that paralleled the diplomatic process, incentives for action at all levels, unprecedented cooperation both internationally and among a wide range of actors, and innovative mechanisms for implementation and enforcement within the treaty itself. Perceived threats from deteriorating stratospheric ozone were made more immediate by the continual advancement of scientific knowledge, which contributed to diplomatic

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[242] Edward Miles et al, *Environmental Regime Effectiveness: Confronting Theory with Evidence* (Cambridge, Mass.: Massachusetts Institute of Technology Press, 2002), p. 151.
[243] *Ibid*., p. 151.
[244] Andersen, *Protecting the Ozone Layer*, p. 36.
[245] Tolba, *Global Environmental Diplomacy*, pp. 83-84.

consensus, public awareness and political pressure.[246] The first wave of discussions, including the UNEP meeting of experts and DuPont Chemical's manufacturers' summit, were a direct response to the increasing scientific evidence pointing toward ozone depletion.[247] At the time of the Vienna Convention, an announcement by the British Antarctic Survey revealed that ozone over Antarctica had thinned by approximately 40% since the late 1970s, shocking negotiators into greater cooperation.[248]

Increasing evidence that humans were responsible for ozone depletion provoked continuous strengthening of the Montreal Protocol, and research and innovation on the part of the private sector.[249] DuPont announced its own phase out of CFCs immediately following the release of an OTP report linking CFCs and ozone in 1988.[250] Both governments and the private sector were continually challenged by scientific information, and both sectors rose to the challenge, and policy responses evolved alongside scientific discovery.[251] The Scientific Assessment Panels formed at the Montreal Protocol brought together the experts from all fields, including government, academia, international organizations and industry. The annual reports issued by the Panels were largely undisputable, and served to further unite the different sectors involved in implementing the treaty. With a basic and uncontroversial foundation of scientific knowledge upon which to base decision-making, states, NGOs and the private sector worked cooperatively toward shared objectives.

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[246] Miles, *Environmental Regime Effectiveness*, p. 154.
[247] Andersen, *Protecting the Ozone Layer*, pp. 8-12.
[248] Tolba, *Global Environmental Diplomacy*, p. 61.
[249] Andersen, *Protecting the Ozone Layer*, pp. 22-30.
[250] Elliot, *The Global Politics of the Environment*, p. 56.
[251] Miles, *Environmental Regime Effectiveness*, p. 155.

Industry developed a long-term approach to ozone depleting substances when they realized that governments were going to commit to an international treaty, and create a market for substitutes. A handful of companies controlled much of the CFC production worldwide, composing a concise and manageable group that represented the bulk of the loss from the phase out of ODSs.[252] Du Pont Chemical played a key role in bringing manufacturers on board, however their opposition early in the process slowed the initial stages of negations.[253] The diplomatic process inspired innovation, though once the private sector expressed its willingness to cooperate in CFC phaseout, it also contributed to the success of the negations.[254] Once manufacturers decided to act, they moved forward cooperatively rather than competitively, allowing for faster phaseout of CFCs and adoption and transfer of new technologies.[255] Industry participation undoubtedly played a significant role in the success of the Montreal Protocol.[256]

Industry cooperation with governments was augmented by the willingness of NGOs to work with the private sector, government and the public. Environmental NGOs realized the importance of cooperation and immediate response to the threats of ozone depletion, and took the unique role of promoting partnerships to further innovation and adoption of alternate technologies.[257] Growing public awareness was fostered by NGO and government activity that helped inform individual consumers of the impacts of their decisions.[258] Many governments adopted regulatory measures, taxation and product

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[252] Andersen, *Protecting the Ozone Layer*, p. 44.
[253] *Ibid*., p. 45.
[254] *Ibid*., p. 74.
[255] *Ibid*., p. 235.
[256] Chasek, interviewed by the author.
[257] Andersen, *Protecting the Ozone Layer*, p. 270.
[258] *Ibid*., p. 272.

labeling to encourage public compliance with the Protocol.[259] Each country was responsible for its own implementation of the protocol, merging bottom-up implementation with the top-down mechanisms of the Protocol.[260]

Cooperation among states was fostered, to a large extent, by the actual mechanisms of the Protocol. Like many environmental issues, discussions on ozone depletion created a rift between Northern and Southern concerns. Southern nations argued that the North was largely responsible for the buildup of ozone depleting substances in the stratosphere as well as for the production of these substances. Northern countries responded that there was no point in taking action if Southern countries were increasing their own ODS use without restriction.[261] Two mechanisms help alleviate North-South tensions and created incentives for countries to join the Protocol. First, the trade sanctions against non-party nations coerced many countries into joining the Protocol to avoid costly import and export restrictions.[262] Second, the Multilateral Fund for the Implementation of the Montreal Protocol demonstrated that countries had made varying contributions to ozone depletion, and accepted that, therefore, they had different responsibilities toward addressing the problem.[263] Thus, Northern countries that had created depletion would deal with the bulk of the problem, but they would also establish the Fund to allow developing countries to meet their own responsibilities.

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[259] *Ibid*., pp. 255-256.
[260] *Ibid*., p. 235.
[261] Elliot, *The Global Politics of the Environment*, p. 57.
[262] Andersen, *Protecting the Ozone Layer*, p. 353.
[263] *Ibid*., p. 351.

COMPARING THE CASES

Of the hundreds of international meetings and conferences on issues of sustainable development, few can claim to have been fully addressed the problems. Of the commitments, declarations and treaties that have generated positive change on the ground, smallpox eradication and the reversal of stratospheric ozone depletion are arguably the two most notable cases of successful international initiatives. The limited results from decades of efforts are evidence enough to conclude that large international meetings do not lead directly to implementation of sustainable development goals. Smallpox and ozone depletion are exceptional, both as problems and in the ways in which they were addressed. These processes cannot be replicated for the rash of sustainable development problems facing the world today, because of the complexity of existing issues, and because of barriers that hinder progress on sustainability and perpetuate economic, social and environmental problems. Centralized, top-down initiatives are important insofar as they create the conditions needed for bottom-up actions. A bottom-up approach that does not rely upon external assistance or resources is fundamentally more sustainable, yet without any sort of overarching framework, bottom-up approaches may fail to intersect or to work toward common goals. To better understand these generalizations, looking to the past, particularly to successful initiatives, can provide important conclusions about the elements needed for sustainable development.

Though both smallpox and ozone depletion were dealt with through international agreements, which have been the most common mechanisms used to address problems of sustainable development, the actual initiatives for each of these issues were fairly

innovative. Both depended on cooperation between Northern and Southern countries, and among states and other actors, including the private sector. In the case of smallpox, even countries that were smallpox-free had an interest in eradicating the disease because of the high risk of imports from endemic countries, and the costs associated with guarding against those risks. Some developing countries were able to take measures into their own hands and move independently toward domestic elimination of the disease. Other developing countries were dependent upon the assistance, both financial and technical, of the centralized eradication campaign. The campaign was flexibly structured to allow for adaptation to the circumstances of each country involved, and to encourage cooperation by working with domestic health ministries and offering incentives for cooperation in the form of vehicles, vaccines and money. Much of the campaign's feasibility turned on specific private sector interventions, namely the decisions to waive licensing fees, first on freeze dried vaccine and later on bifurcated needles. Northern countries drove the processes to a large extent, though without the cooperation of Southern governments and health departments and the private sector, the smallpox initiative would have been likely to fail. Additionally, policy was able to evolve alongside emerging scientific knowledge, through the adoption of improved strategies for disease control and vaccine delivery.

The success of the Montreal Protocol was similarly dependent on cooperation among countries and other actors. However, achieving alignment of the goals of the actors involved was considerably more difficult, and required substantially more innovation than in the case of smallpox. In the early stages of international action to halt the depletion of stratospheric ozone, both developing countries and industry were

adamantly opposed to action, insisting that Northern countries had no right to constrain Southern development, that scientific information was incomplete, and that the economic costs of action would be too great. Developments during the negotiations and treaty process served to address each of these concerns. First, striking scientific evidence emerged during negotiations that pointed to a significantly deteriorated ozone layer, and linked the problem to anthropogenic sources. Second, the measures to reduce ozone depleting substances were developed with built-in flexibility that allowed implementing countries to choose which specific substances to reduce. Third, the developed countries agreed to create a multilateral fund for implementation of the Protocol in developing countries, calming both the fear that Southern development would be hindered by the Protocol and the concern that increasing use of ODSs by Southern countries would undo the efforts of the North under the Protocol. These three developments served to assure industries of a market for ODS substitutes, and to coerce both Northern and Southern countries to take action on the problem of ozone depletion. The diplomatic process of the Protocol and subsequent follow-up meetings remained closely attuned to evolving scientific knowledge on the status and causes of stratospheric ozone depletion.

Smallpox eradication was, for the most part, strictly a health campaign, and the Montreal Protocol was essentially an environmental treaty, yet several sustainable development principles can be seen in both initiatives. International cooperation, the principle of common but differentiated responsibilities, technology transfer, the precautionary principle, and the principle of integrated decision-making all played important roles in creating the basis for the successes of the case studies.

In the smallpox eradication campaign, Northern countries recognized that action and results would depend upon assistance to the South, both to provide the financial and technical means for achieving the goal, and as a way of securing cooperation. Many of the resources for smallpox eradication, including technical expertise and tools of implementation were transferred from developed countries. Unlike smallpox, the problem of ozone depletion had its source in Northern countries that consumed and produced the bulk of ozone depleting substances. As the parties responsible for the problem, developed countries had an obligation to invest the resources to deal with ozone depletion. The Multilateral Fund for the Protocol, which enabled technology transfer, was an essential element in the recognition of common but differentiated responsibilities and securing developing country cooperation.

The precautionary principle played a much stronger role in the Montreal Protocol than in the smallpox eradication campaign. Science and policy activity on the risk of ozone depletion began eleven years before conclusive evidence of stratospheric ozone loss was available. Had the international community waited until scientific information was indisputable, the problems of ozone depletion would have been much more extensive, costly and difficult to reverse. Montreal revealed the importance of swift and early action in the face of scientific uncertainty, and led to the adoption of the precautionary principle in 1992 at the UN Conference on Environment and Development in Rio de Janeiro.[264] Smallpox, on the other hand, was not a new problem, and the much of the scientific knowledge needed for eradication had been around for decades.

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[264] Andersen, *Protecting the Ozone Layer*, p. 350.

Both initiatives relied on integrated decision-making that brought together actors from all levels, from international to local and allowed cooperation and avoidance of a strictly top-down or bottom up process. Both processes included mechanisms for flexibility that allowed a certain degree of autonomy, among national programs in the case of smallpox, and among domestic regulations in the case of ozone depletion. The Montreal Protocol demonstrates that, if properly designed, a treaty can involve incentives and mechanisms that create a framework for cooperation and action at all levels. Though both initiatives stressed cooperation and flexibility, they both addressed a narrow problem, one falling under the social component of sustainable development and the other under the environmental component. The central institutions in each were narrow international bodies: the World Health Organization and the United Nations Environment Program. Though, to some extent, these case studies represent narrow and centralized approaches to problems of sustainable development, they were both able to overcome these limitations, and to meet top-down initiatives with bottom-up action for successful sustainable development.

CHAPTER 4

LESSONS and CONCLUSIONS

A vast array of problems falls under the label of sustainable development. Any single solution that I might propose in this final chapter would be sure to fall short of the magnitude and complexity of the issues at hand. However, by exploring these problems as a whole, rather than targeting a narrow, manageable subset, I can look to the commonalities and differences among them, and seek a starting place for comprehensively addressing sustainable development. To ground my analysis, I focus on the following question: What approach provides incentives to local, regional and international actors to create the conditions necessary for sustainable development? Together, the case studies and the many treaties of the past three decades demonstrate that meetings alone are not sufficient to achieve sustainable development. Instead, success depends on what sort of framework emerges, whether cooperation and action continue beyond the initial agreement, and the extent to which bottom-up activities emerge to compliment the essentially top-down function of international agreements.

I begin this chapter with a brief return to the case studies, to reiterate and expand on the lessons learned from two successful examples of centralized sustainable development initiatives. Next, I turn to an analysis of the obstacles to more successful efforts. Namely, I explore a trend of divisiveness that runs through issues and actors, perpetuating national self-interest and barring the creation of conditions for sustainable development. I then apply these lessons to the current sustainable development alternatives within the international community to examine their potential for the future.

I conclude with an exploration of my vision for encouraging sustainable development at all levels. The European Union serves as a model for the evolution of international economic institutions into powerful organizations for cooperation on transboundary issues. By providing a forum in which countries are forced to think beyond their own short-term self interest, such an organization creates the conditions needed for sustainable development at all levels. Cooperation paves the way for essential steps toward broad-based sustainability, including internalization of social and environmental costs, increased technology transfer and a more even playing field for trade. Applying this approach to the specific example of deforestation, I attempt to show the way in which increased cooperation removes many of the current obstacles to sustainable development. I end by tying these conclusions in to the rest of this work.

LESSONS LEARNED

The preferred path forward can, in many instances, be divined from an examination of the past. For the past thirty years, international activities for sustainable development have consisted of states and other actors negotiating commitments and treaties to address economic, social and environmental problems. Some of these processes have been more notable than others, and some have gone so far as to catalyze results on the ground and create significant progress toward implementing sustainable development goals. For the most part, however, energy has gone into the conferences and their follow up meetings, at the expense of concrete results.[265] Recurrent separation of the economic, social and environmental dimensions of sustainable development issues lead to processes that fail to address the full ramifications and interconnections of the

[265] Anonymous, interviewed by the author.

three components of sustainable development. Successful international initiatives have been characterized by a shared vision among the actors. The case studies illustrate the importance of top-down initiatives that, through common objectives and principles, flexibility, scientific information and integrated decision-making, lead to cooperation and bottom-up action.

Returning to the Case Studies

The eradication of smallpox and the Montreal Protocol demonstrate the importance of internationally coordination efforts for forward looking change. The cooperation spawned through these initiatives created the conditions needed for activities to happen at the local, regional and international levels. The ability to coordinate interests, particularly among the state actors involved, relied upon addressing concerns of sovereignty to overcome conflicts of national self-interest. In the smallpox case study, sovereignty concerns did not present a substantial stumbling block to the campaign's success. Funding and support from countries that had successfully eradicated the disease from within their own borders emerged from the recognition that each country's interests remained tied to eradication as long as the threat of importations presented a risk of outbreaks. The Montreal Protocol required much greater tradeoffs between national sovereignty and cooperation. The nature of ozone depletion was such that no single nation would be able to address the environmental and health threats without coordination with other countries. The Protocol balanced mechanisms of coercion, such as trade sanctions and binding adjustments to ODSs, with the preservation of national autonomy through flexible implementation requirements and delays for developing

countries. By creating an international framework, which led to coordinated domestic efforts, the Montreal Protocol created the conditions under which the global problem of ozone depletion could be addressed.

A Trend of Divisiveness

Up to this point, I have focused on what I perceive to be the keys to success in the case studies. Now, I will turn to what I argue is a primary element in the failure of other sustainable development initiatives – the continuous division of issues, actors and interests that are fundamentally interlinked. For the most part, the case studies were able to overcome these obstacles, generating cooperation and alignment of interests. First, and most broadly, artificial divisions can be seen in the three components of sustainable development, which, as described in Chapter 1, are fundamentally linked. Causes and effects move freely among economic, social and environmental factors, undermining efforts to address one to the exclusion of the others. Second, divisions can be seen among the actors, who are typically grouped by government, private sector, and non-governmental organizations. Again, such separation serves to undermine efforts toward cooperation, which is essential to cohesive progress toward sustainable development goals. Third, divisions are apparent between Northern and Southern concerns and viewpoints, augmented by the self-interest created by artificial political boundaries. Pervasive tendencies, such as short-term, economic decision-making and national self-interest significantly undermine efforts for sustainable development, and prevent the conditions needed for action on all levels.

Economic, social and environmental issues are constantly separated, in everything from public policy to everyday individual decision-making. Integration of the three components usually comes in the form of economic influence on social and environmental decisions, rather than vice versa. The tendency to separate the choices and consequences of economic, social and environmental decision-making leads to unforeseen impacts that emerge through the linkages between the three components. To some extent, the need to address all three components simultaneously has been acknowledged in international environmental decision-making, with the increasing emphasis on sustainable development over pure conservation considerations. While social and environmental decision-making are becoming increasingly integrated, economic policy remains less holistic in its scope. Examples of integrated economic decision-making can be seen in different areas. Some countries, mostly in Europe, have begun to impose green taxes, on everything from gasoline to waste disposal in landfills, to discourage environmentally harmful activities.[266] Consumer demand is increasing in many industrialized nations for products that come at less environmental and social cost, though sometimes at higher economic prices, such as organic produce, sustainable wood products, and sweatshop-free clothing.[267] However, common economic signals, such as prices on commodities, fail to internalize the social and environmental costs of production and distribution.

Divisions among the three primary groups of actors have similar ramifications as the divisions among the components of sustainable development. Government, the

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[266] "Green Taxes," *OECD Observer*, 15 June 2001. Online. http://www.oecdobserver.org/news/fullstory.php/aid/497/Green_taxes.html. 16 March 2003.
[267] Curtis Moore and Alan Miller, *Green Gold: Japan, Germany, the United States, and the Race for Environmental Technology* (Boston, Mass.: Beacon Press, 1994), pp. 68-70.

private sector and nongovernmental organizations are usually separated in decision-making processes. For decisions to be sustainable and for cooperation to occur, it is essential that dialogue and balance occur among the three sets of actors. Furthermore, the private sector and NGOs are often crucial to implementation of government decisions, as well as to providing the scientific and technical expertise that informs decision-making. In the absence of this cooperation, efforts made by one sector can easily be undermined by the others. The case studies of smallpox and ozone depletion demonstrate the importance of private sector support in international initiatives. The trend toward incentive- or market-based regulation of the private sector, in favor of command and control mechanisms, also reveals the greater efficiency and success of cooperative initiatives. Additionally, national self-interest and appeals to short-term economic concerns often serve to polarize governments, presenting an additional obstacle to cooperation. In the long-term, the interests of the actors correspond. Successful sustainable development relies upon aligning the interests in short-term decision-making to allow for cooperation.

A further rift runs among the actors in sustainable development – that of the North-South divide. As described in Chapter 2, the priorities of Northern countries often differ substantially from those of their Southern counterpoints. Divisions center on questions of who should pay for development or environmental protection, and whether overpopulation or overconsumption is the greater contributor to the social and environmental problems of the world. The role of the private sector in the global economy, and the power wielded by large corporations that are run out of the North but operate in poor Southern countries, is another source of North-South tension. Like

cooperation among different sectors, cooperation between the North and the South is essential for sustainable development. Through cooperative initiatives, developing countries have the potential to increase the economic well-being of their citizens with fewer environmental problems than were created by the industrialization of the North. To realize this goal, however, developed countries must engage in technology transfer and financial assistance to the South. At the same time, Southern countries must make an effort to reach even their poorest citizens, to reduce corruption and to engage in good governance. In the long-run, high environmental quality and poverty reduction are in the interests of all nations. The lack of cooperation between industrialized and developing countries often prevents consensus from being established in the first place. Once a commitment is reached, differing interpretations and priorities undermine efforts toward implementation. Smallpox eradication and the Montreal Protocol would not have been possible without considerable harmonization of Northern and Southern concerns.

Analyzing Alternatives

With these ideas of what facilitates and what hinders progress in mind, I wish to return to the current international alternative approaches to sustainable development, presented in Chapter 2. In analyzing the potential of these alternatives, I will seek to understand the extent to which they represent a break from the obstacles faced in the past, and to which they capitalize on the lessons learned from the case studies.

The Millennium Project has the obvious advantage of support from the United Nations, and the distinction of being the only focused and active process currently underway. Additionally, because the task forces are made up of independent experts, not

government representatives, the work of the Millennium Project bypasses many of the political obstacles presented by differing interests among actors. However, the very fact that the task forces avoid the wrangling and negotiation usually associated with international initiatives means that these obstacles are likely to hinder the implementation phase.

The actual products of the Millennium Project, though more detailed and focused than most international declarations, are essentially a set of plans and commitments on paper that will lack the necessary drivers for implementation. Furthermore, the project explicitly divides the three components into very specific topical areas, without looking to common forces that perpetuate sustainable development issues. The task forces were directed to focus on their topics, allowing for integration at a later date.[268] However, unless integration is central from the start, the final objectives will remain divided. The detailed plans for implementation of the Millennium Development Goals, which are the objective of the Project, will not focus on increasing cooperation or creating incentives for individual actors to take sustainable development into their own hands. Instead, the final result will require top-down implementation of a sort that fails to foster the conditions for action at other levels.

The Type II Partnerships that were the implementation focus of the World Summit on Sustainable Development face a different set of issues than does the Millennium Project. In attempting to create cooperation among the sectors based on voluntary and specific sustainable development projects, the partnerships represent an effort toward greater integration of the actors. At the same time, the partnerships alienated certain portions of the NGO community as well as creating disagreement

[268] Sachs, Opening address to the Millennium Project Task Force on Disease.

between Northern and Southern actors. Many developing country representatives felt that the partnerships were being used as an excuse for industrialized nations to avoid making concrete commitments to sustainable development. I presented many of the general critiques on partnerships from the international community in Chapter 2. Specific to the lessons that I have drawn from the case studies and my overall analysis, I find that elements of the partnerships approach are sound, specifically the emphasis on increasing participation among actors, as well as catalyzing actual changes on the ground.

Type II Partnerships, however, fail to address any of the underlying causes of sustainable development issues, such as the exclusion of social and environmental costs from economic pricing, or the barriers presented by the self-interest that arises out of traditional notions of sovereignty. Though the partnerships may yield benefits on a case by case basis, they are unlikely to facilitate widespread changes, or to create conditions for sustainable development that reach beyond the very narrow proposed projects. Further practical complications include the general unwillingness of the private sector to engage, the lack of any monitoring provisions to ensure that the partnerships complete their initial objectives, and the lack of new funding to emerge from the efforts.

CONDITIONS FOR SUSTAINABLE DEVELOPMENT

The topic I have chosen to address does not lend itself to a set of clear and concise conclusions or policy recommendations. I began this work with an overview of the problems that fall under sustainable development. The spectrum of issues is too expansive and complex for a single approach to generate change on all or many of the problems. Instead, I look to a starting point, and a way of eroding the underlying issues

that perpetuate economic, social and environmental problems. Addressing the barriers to successful sustainable development can create conditions under which any given problem can be more easily addressed. As a forward looking approach, an effort to overcome obstacles must be somewhat top-down and transnational in nature.[269] However, to be truly sustainable, and to create the conditions for sustainable development at all levels, the initiative must also generate incentives for bottom up action.

Certain elements of the current economic and political systems, such as incomplete pricing and sovereign divisions among nations, lead to unsustainable choices.[270] To overcome the barriers that these issues present to sustainable development requires a fundamental change in thinking, and in the ways that the international community views long-term economic, social and environmental needs. Many speculate that only a catastrophe of some kind can catalyze the widespread changes in policy-making and cooperation that are needed for long-term sustainability.[271] I believe, however, that the beginnings of the needed changes can already be seen in international institutions that encourage a trade off between national sovereignty and cooperation.

Changing Notions of Sovereignty

The multitude of issues that I have presented in the last three chapters occurs in the context of a rapidly evolving world. The phenomenon commonly referred to as globalization is characterized by rapid economic integration through liberalized trade and

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[269] Rosenau makes the distinction that transnational governance efforts tend to be forward looking, whereas subnational or bottom-up approaches tend to be responsive, provoked by frustration with the current system.
James Rasenau, "Governance in a Globalizing World," in Held and McGrew, eds. *The Global Transformations Reader*, pp. 187-188.
[270] Connelly and Smith, *Politics and the Environment*, p. 183.
[271] Chasek, interviewed by the author.
Anonymous, interviewed by the author.

investment, and increasingly powerful non-state actors and forces.[272] Globalization takes on different meanings and values for different people. A discussion of the many related theories and arguments is far beyond the scope of this work. The impacts of globalization may be either positive or negative depending on the forces that shape its trajectory. However, the fact remains that economic flows, technology, communications, media and environmental problems are becoming increasingly transnational in nature, bypassing national governments and political boundaries. If these dynamics can be harnessed and redirected in ways that encourage sustainability, transformations would occur at the international level, and to the extent that globalization affects everyone, would spillover to generate change at all levels.

Under current notions of sovereignty, states derive their legitimacy from providing security and well-being to their citizens. Inevitably, issues involving common resources, such as the atmosphere, and transboundary externalities, such as acid rain, present a challenge to national sovereignty. In such cases, to preserve legitimacy, countries may have to come together in cooperative initiatives that require some trade off between sovereignty and effectiveness.[273] The Montreal Protocol is a prime example of countries pooling their sovereignty in the face of a problem that could not be addressed by any one government. Though certain elements of the Protocol, such as trade sanctions and a majority voting mechanism for binding adjustments, required the sacrifice of some national autonomy, they also contributed substantially to the overall success of the initiative. An increasing number of issues require cooperation, not only among governments, but of the private sector and NGOs as well, as global forces create

[272] Kevin Gallagher, "Globalization and Sustainability: Overview Essay," in Harris, Wise, Gallagher and Goodwin, eds. *A Survey of Sustainable Development*, p. 223.
[273] Connelly and Smith, *Politics and the Environment*, p. 188.

loopholes that undermine the ability of regulators to implement laws and effectively control transboundary forces.[274]

Learning from the European Union

Europe has effectively institutionalized the level of cooperation needed to address transboundary issues through the creation of the European Union (EU). As a supranational organization, the EU places formal constraints on its member countries, which take precedence over national laws.[275] EU jurisdiction, however, is limited to issues that are better addressed at the regional than at the national level, preserving the autonomy of individual nations to govern on purely domestic issues.[276] Sustainability legislation has increasingly become a cornerstone of EU policy, placing the organization at the head of international environmental efforts, including the Kyoto Protocol. The EU did not initially emerge with the powers it currently holds over its fifteen member countries, but evolved over the course of several decades.

The European Union evolved out of the European Economic Community (EEC), a purely economic organization formed after World War II to help create conditions for economic growth in Europe.[277] Equality of competition within a European market required harmonization of standards to ensure that no member country was advantaged by local conditions. Leveling the playing field required legislation on labor and environmental standards, to prevent countries with more lax policies from attracting

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[274] Anne-Marie Slaughter, "The Real new World Order," *Foreign Affairs* 76 (September/October 1997), pp. 192-3.
[275] Connelly and Smith, *Politics and the Environment*, p. 218.
[276] John McCormick, "Environmental Policy and the European Union," in Robert Bartlett, Riya Kurian and Madhu Malik, eds. International Organizations and Environmental Policy (Westport, Conn.: Greenwood Press, 1995), p. 38.
[277] Connelly and Smith, *Politics and the Environment*, pp. 217-218.

unfair benefits.[278] Gradual accrual of power within the EEC eventually led to a legal basis for creating legislation, and the rise of regional regulations that replaced national controls.[279] International integration of one sector of states' economies leads to the integration of other sectors in a spillover process, the clearest example of which can be seen in the EU.[280] Current EU policy is based on the belief that environmental protection is a prerequisite for sustainable economic development, and sets minimum environmental standards for its member states.[281] The inclusion of principles such as the precautionary approach and integrated decision-making serve to further guide domestic policy.[282] Evidence suggests that the EU has brought changes in areas that would have been blocked by self-interest and lack of cooperation in the absence of regional cooperation. Three notable areas include the harmonization of environmental standards, the coordination of policy making processes, and improved relations among national governments, the EU and environmental groups.[283]

Though the EU has achieved substantial progress on cooperation and environmental protection within Europe, it generates criticism of a variety of issues. First, the lack of democracy and transparency within the EU is a common target for questioning the organization's legitimacy, and arguing that it should not be used as a model for more global processes.[284] Second, the EU is primarily an interstate organization, and does not resolve the demand for increased cooperation among

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[278] *Ibid*., pp. 225-226.
[279] McCormick, "Environmental Policy and the European Union," in Bartlett, Kurian and Malik, eds. *International Organizations and Environmental Policy*, p. 41.
[280] *Ibid*., p. 39.
[281] *Ibid*., p. 41.
[282] Connelly and Smith, *Politics and the Environment*, p. 229.
[283] McCormick, "Environmental Policy and the European Union," in Bartlett, Kurian and Malik, eds. *International Organizations and Environmental Policy*, p. 43.
[284] Daniel Bodansky, "The Legitimacy of International Goverance: A Coming Challenge for International Environmental Law?" *American Journal of International Law* 93 (July 1999), pp. 597-99.

governments, the private sector and NGOs for successful sustainable development. Third, the EU is not without implementation problems of its own, which emerge in the process of translating EU laws into domestic policy.[285] The first two concerns could be addressed by opening up the processes of EU policy-making to the public. Increasingly, NGOs are playing lobbying, consulting and monitroing roles within the decision-making process.[286] The recent Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters makes considerable progress toward legitimacy within the EU.[287] Democracy has historically formed the basis for legitimacy, but democracy becomes increasingly difficult in international fora, leading to alternatives such as transparency and mechanisms for public participation.[288] As far as implementation problems go, Spain is the worst enforcer of EU law, implementing 79 percent of directives.[289] Relative to international compliance with environmental treaties, 79 percent is an ambitious goal.

Scaling Up

The evolution of the EU from an organization for economic cooperation to a regional agent for environmental protection holds interesting prospects for the future shape of economic, social and environmental dynamics at the international level. Agreements and organizations such as the North American Free Trade Agreement

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[285] McCormick, "Environmental Policy and the European Union," in Bartlett, Kurian and Malik, eds. *International Organizations and Environmental Policy*, p. 43.
[286] *Ibid*., p. 46.
[287] United Nations Economic Commission for Europe, "Convention on Access to Information, Public Participation in Deceision-Making and Access to Justice in Environmental Matters," (Aarhus, Denmark, 25 June 1998). http://europa.eu.int/comm/environment/aarhus/. 26 March 2003.
[288] Bodansky, "The Legitimacy of International Goverance: A Coming Challenge for International Environmental Law?" pp. 599-604, 618.
[289] McCormick, "Environmental Policy and the European Union," in Bartlett, Kurian and Malik, eds. *International Organizations and Environmental Policy*, p. 43.

(NAFTA), the World Trade Organization (WTO) and the Organization for Economic Cooperation and Development (OECD) demonstrate the increasing need for international cooperation on economic issues. Countries have demonstrated their willingness to compromise sovereignty for economic issues that demand collective action. The trade distortions created by differing labor and environmental standards become apparent with growing dependence on international trade and foreign investment.[290] Just as the EU was forced to undergo an expansion process to address domestic sectors that interfered with economic harmonization, organizations that currently see their capacity as strictly economic are likely to face similar growing pains in the future.

Free trade, which has, to a large extent, characterized economic globalization, interferes with a country's ability to internalize social and environmental costs by rewarding the countries that are able to minimize production costs. As a result, unmoderated free trade provides incentives for behavior that compromises social and environmental quality in favor of economic gains. Only by agreeing upon common rules for economic internalization among trading nations, as done to some extent within the EU, can free trade be sustainable.[291] The WTO and other trade organizations have sought to harmonize social and environmental practices among their member countries by pushing for the lowest common denominator and striking down domestic environmental laws. To the extent that international economic organizations can pave the way toward greater cooperation and sustainability, they must evolve toward a model of sustainable economic growth that recognizes the long-term need for environmental protection and social equality.

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[290] *Ibid*., p. 37.
[291] Herman Daly, "From Adjustment to Sustainability Development: The Obstacle of Free Trade," in Harris, Wise, Gallagher and Goodwin, eds. *A Survey of Sustainable Development*, p. 233.

Economic globalization may create the conditions needed for increased international integration and cooperation through its demands for consistent and secure environmental and social rules.[292] Should existing economic institutions follow a path similar to that of the European Union's expansion into governance on other transboundary issues, the future implementation of international sustainable development commitments is promising. Realization of this potential would require substantial and widespread changes to the current economic system. Of course, such as shift calls for harmonization of domestic social and environmental legislation toward higher standards rather than a move toward the lowest common denominator. Such processes are likely to be encouraged from within economic institutions by increasing the time horizon on decision-making, and the ever widening impacts of global economic factors on social and environmental factors. On a scale larger than that of the European Union, an evolving economic institution would confront many complex issues, and to more effectively generate sustainable behavior on the ground, would have to go further than the EU in the process of integrating social and environmental costs into economic policies. Mechanisms of the sort used under the Montreal Protocol, including a multilateral fund for technology transfer, and graduated commitments for developing countries, would be necessary to gain the support of the South, and to prevent harmonization processes from furthering economic inequalities.

In the processes of recognizing the limitations of state sovereignty, it is important that other actors are brought into consideration. International law is increasingly seen to

[292] Robert Paehlke, "Environment, Equity and Globalization: Beyond Resistance," *Global Environmental Politics* 1 (February 2001), p. 2.

affect all actors, not just national governments.[293] At the same time, states are withdrawing from functions that were long considered public services. The privatization of services such as water supply and crime prevention, and the increasingly regulatory role of NGOs demonstrate the growing importance of non-state actors in public policy.[294] Just as the EU must integrate public participation and transparency into its decision-making processes, other international organizations must development mechanisms for broad participation as they grow and expand their powers. Currently, debate surrounds the WTO on the question of whether the private sector should be held accountable under WTO rules.[295] As the powers of multinational corporations grow, and as the private sector becomes increasingly autonomous from state regulation, international institutions must evolve to confront these changes. For international mechanisms and cooperation to be truly sustainable, they must be open to all actors involved with and affected by globalization.

Applying the Model: Deforestation

To more fully explore my proposal that economic globalization can, if correctly channeled, pave the way for greater international cooperation, I now apply it to a specific problem of sustainable development. If, as I have suggested, current economic institutions follow the path taken by the European Union, and evolve to a point where they integrate social and environmental costs and considerations into economic decision-

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[293] Bodansky, "The Legitimacy of International Goverance: A Coming Challenge for International Environmental Law?" p. 609.
[294] Jost Delbruck, "Prospects for a 'World (Internal) Law?': Legal Developments in a Changing International System," Indiana Journal of Global Legal Studies 9 (Spring 2002), p. 409.
[295] Claude Barfield, *Free Trade, Sovereignty, Democracy: The Future of the World Trade Organization* (Washington, D.C.: The American Enterprise Institute Press, 2001), p. 56.

making, conditions for sustainable development would be substantially improved. The greater cooperation and decreasing self-interest that such a program would foster might not directly rectify any of specific problems of the sort that I lay out in Chapter 1, but it would erode some of the barriers to successful sustainable development. Applying this model to the problem of deforestation demonstrates that while problems would not be single-handedly resolved by the changes I propose, they would be dealt with more easily than under the current circumstances.

I have chosen to explore the case of deforestation, because of its immense complexity and its ramifications at the global scale, through climate change and species extinction, and at the local level, through erosion and loss of livelihoods.[296] The decentralized nature of the problem makes it very difficult to tackle on an international scale, and economic forces such as market demand for tropical hardwoods in Northern countries, and the need for fuelwood in rural developing areas, perpetuate the problem on the local scale. Under the future scenario that I have proposed, international cooperation would evolve to the point where deforestation could effectively be approached from several angles, including halting trade in illegally harvested timber, imposing taxes or fees on the various stages of processing forest products, and funding technology transfer to developing countries to provide timber substitutes for rural energy supply.

The first angle, addressing trade in illegally harvested timber, could be best addressed through the enforcement mechanisms of a cooperative international organization. Currently, endangered or threatened tree species are illegally harvested and

[296] My treatment of this case study is rudimentary. The problems of deforestation and the steps required to comprehensively address these problems are far beyond the scope of this work. I do not intend for my exploration of international possibilities to address deforestation to be prescriptive or to address the many difficulties inherent in implementing the approaches I propose. Instead, I hope to use this case to illustrate the potential created by increasingly cooperative international institutions.

exported in violation of the Convention on International Trade in Endangered Species (CITES). The prospects for halting illegal logging are currently hampered by demand in industrialized countries that creates incentives for corruption in developing countries, many of which rely heavily upon timber exports.[297] For example, a cooperative institution could create legislation that limits trade in threatened forest species by authorizing a single certification body, and allowing only trade in certified woods. Non-threatened forest products could have a less rigorous certification processes, but by imposing trade caps on both exporting and importing countries, prices could be driven up and demand decreased. Under the current system, a cooperative solution of this type would not evolve, because of the losses for any single country or group of countries that limited timber trade before the others.

The second approach under this cooperative scenario builds on the first by targeting the production processes tied to deforestation, and internalizing some of the social and environmental costs at this stage.[298] Again, such an approach would only be feasible with substantial cooperation and the ability of a powerful international organization to evolve alongside the international harmonization of domestic policies. Targeting the processing stage would also affect demand for timber products by imposing a cost on production calculated to internalize some of the social and environmental externalities caused by forest loss. Domestic governments would impose taxes or fees on pulp and lumber mills, furniture plants and other processing facilities to drive up costs, making their products more expensive, and thus lowering demand. To mitigate the harms

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[297] World Resources Institute, *World Resources 2000-2001: The Fraying Web of Life*, p. 88.
[298] Actual calculation of the cost of social and environmental externalities is highly complex. A rough estimate could serve the desired purpose. Significant additional analysis is needed to explore the full ramifications of such a tax.

from this policy, developing country facilities could be grandfathered in after a sufficient lag time.[299]

The first two cooperative approaches to combating deforestation would impose the greatest economic burdens on developing countries. The third approach would seek to compensate for some of those burdens while reducing developing country drivers of forest loss. I would advocate that a multilateral fund for technology transfer should be part of the institutional mechanisms of a cooperative international organization, independent of a process for combating deforestation. Such a fund could be used in the case of deforestation for a variety of purposes, including alternatives for rural household fuelwood use, improved agricultural techniques that reduce the need for additional cleared land, and funding for countering erosion and soil degradation in areas that have already been cleared. Additionally, recycling technology and production techniques for timber alternatives might lessen deforestation pressures originating in developing countries.

Governments should not be the only actors involved in these sorts of initiatives. Both the private sector and NGOs could play a significant role in combating deforestation through cooperative international measures. The private sector would inevitably be involved through trade restrictions and taxation schemes. Additionally, the private sector could commit toward improving the market for timber alternatives through research and development in new technologies. Private sector involvement is pivotal to the success of the technology transfer component of cooperative initiatives for deforestation. Through direct investment, transfer of production techniques and provision of technology, the

[299] "Grandfathering" is a regulatory term that refers to exemption of entities already involved in an activity from new regulations.

private sector could help establish alternatives for rural energy supply, efficient waste disposal and agricultural innovations. NGOs have already demonstrated their capacity for certification processes, with the increasing influence of the Forest Stewardship Council's criteria for certification.[300] Other types of monitoring could also be carried out by NGOs, which could help keep domestic governments and the private sector accountable to the rules of the supranational organization. The actual implementation processes for technology transfer, particularly in rural areas, should involve both domestic and international NGOs. By involving the three main sectors in the implementation of these sorts of actions, would require that they all have some standing within the overarching organization to facilitate adequate cooperation.

A SUSTAINABLE FUTURE

The first chapter in this work began with a presentation of many of the problems that sustainable development endeavors to address. Undoubtedly, recommendations of greater international cooperation and harmonization of economic policies remain a great distance from addressing the billions of people living under $2 a day, or the overfishing that threatens 75 percent of all fish stocks. Redirecting the forces of globalization toward more sustainable practices would not automatically solve the world's problems, but it would create a forum through which cooperation could lead to the conditions for sustainable development. This change would best emerge from inside current organizations, as in the case of the EU. Applying this scenario to the problem of deforestation demonstrated that an EU-style international organization would have the means to overcome many current obstacles to sustainability. Furthermore, global

[300] For more information on the FSC: http://www.fscoax.org.

dynamics have begun to increasingly challenge traditional notions of sovereignty in ways that require cooperative response. Harnessing the emerging cooperation within existing transnational economic institutions, and instilling in it a sustainable foundation that incorporates principles of sustainable development and integration of social and environmental components, could lead to a foundation for sustainable development at all levels.

The past several decades have seen the emergence of an environmental agenda that has evolved to incorporate economic and social concerns, leading to the broad notion of sustainable development. The tide must turn at this point, and the evolution must occur in the integration of the economic realm. The short-term conflicts generated by the current economic system, and the externalities produced by incomplete pricing, lead to unsustainable choices and obstacles to cooperative sustainable development. Furthermore, traditional notions of sovereignty lead governments to act in their national self interest, to the detriment of general and long-term well being. Case studies of the two most successful international initiatives to fall under the umbrella of sustainable development demonstrate the importance of cooperation and common objectives. Though the case studies were successful in accomplishing their goals, many other international efforts have been undermined by obstacles that include divisions among issues and actors. Currently, the magnitude and interconnections of the problems of sustainable development are such that individual initiatives will provide insufficient remedy, even under the most fortunate circumstances. Only through fundamental transformations within the international system can the conditions and incentives for widespread sustainable development emerge.

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