

Message from the Editor

The decision to designate sustainable development as the focus area of this issue comes from the realization that the future of our planet and our very existence depends on the choices we, as a global community, make today. As the United Nations prepares to host the World Summit on Sustainable Development in Johannesburg, our goal at the *Journal* remains to bring to the forefront current topics in the area of diplomacy and international relations. We hope to further the discussion surrounding sustainable development through the scholarship that we offer you in this issue. Articles included in this issue address such topics as trade and the environment, United States energy policy and the United Nations Global Compact, among other topics.

There are many layers to this discussion; sustainable development is a concept that has been the subject of debate and concern to scholars and practitioners from diverse fields of study. Our authors discuss sustainable development at the state, national and international level. This multi-level discussion is necessary because progress in terms of sustainable development will only take place with responsible action at all three of these levels, and with cooperation and communication between these groups.

You, our readers, are the driving force behind the success of the *Journal*. We are a global community, and the discourse we generate makes us all better prepared to face the challenges of an interdependent world. We thank-you for your support. There are several other people to whom the *Journal* would like to express its sincere thanks. To the editorial staff who endured to make this issue possible, their commitment to creating and building a Journal founded on ideas propel us forward. We should also like to thank our advisors and the faculty and administration of the School of Diplomacy and International Relations for their steadfast guidance. Finally, to our authors, your work educates and equips us with the knowledge of the many issues facing our global community.

Securing the future of our planet is a very personal responsibility and one that we can no longer afford to take lightly.

M. Suying Hugh

Introduction

by Charles Goerens

Eradicating poverty worldwide with the Millennium Summit goal as a minimum, protecting the environment, expanding and enhancing education, regardless of sex, and the development of a health policy that encourages family planning and pursues the elimination of the three most contagious diseases, AIDS, tuberculosis, and paludism, are the major principles guiding the developed world's effort in promoting sustainable development.

The starting point for such change is to create a new value system, redirecting the choices that the world makes in production and consumption. In a May 29, 2002 editorial published by the Financial Times, UN Secretary-General Kofi Annan reprimanded the developed countries that met 10 years ago at the Earth Summit in Rio for not having lived up "to the promises they made either to protect the environment or to help the developing world."

In anticipation of the Johannesburg World Summit on Sustainable Development (WSSD) recent editorial analyses in the Herald Tribune indicated that official development assistance (ODA) in total financial flows to developing countries has seen a reduction in the last decade, while direct investment and commercial credit saw a marked increase, most often meant to support large-scale projects needed to create sustainable livelihoods. Foreign direct investment (FDI) worldwide in 2000 totaled \$1.1 billion; however, the developing-country share decreased from 35 percent in 1997 to 17 percent in 2000. This August, the WSSD needs to set clear targets and clear mechanisms for monitoring, enforcement and compliance, as well as for improved civil-society access to information and decision-making. With 70 percent of the poorest people in developing countries living in rural areas, directing financing at rural populations is a strategy that many of the major groups participating at the WSSD had identified and embraced at prior conferences. This means not only stopping the decline in ODA but doubling the present figure for ODA, which may sound ambitious, but would still fall short of the recognized goal of 0.7 percent of GNP to be provided by developed countries for development assistance.

Most recent UN conferences and international agreements, such as the Doha Development Agenda, the Monterrey Financing for Development Conference and the Food Summit, have reiterated the European Union's commitment to take action

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toward implementing a plan aimed at the many challenges in relation to the global dimensions of sustainable development. It was agreed that oriented action must be channeled toward poverty eradication, development of sustainable patterns of production and consumption, conservation and sustainable management of natural and environmental resources, strengthening the autonomous governance for sustainable development at all levels, in particular international environmental governance, and the creation of a Global Foundation whose mandate is to institute a long-term strategy directed towards the prevention of the three most contagious diseases in the underdeveloped countries. "Faced with what promises to be an epidemic without precedent in the history of mankind, we must counter with actions that have no precedent," said Bernard Kouchner, the former French Minister of Health.

Health issues are inextricably intertwined with all the concerns that will be addressed at the WSSD. Most of the 23 million sub-Saharan Africans who have tested positive for the AIDS virus do not have access to the drugs most effective in treating this disease due to the enforced cost-control and patent rules imposed by the WTO that allow pharmaceutical companies to monopolize drug pricing. The report of the UN Secretary-General on health and sustainable development in preparation for the WSSD asks for health issues to be incorporated into all sustainable development plans: "The goals of sustainable development cannot be achieved when there is a high prevalence of debilitating illnesses, and population health cannot be maintained without ecologically sustainable development." The first principle of Agenda 21 while making health a top priority also brought into play the wide range of issues encompassing this need, such as poverty eradication, hunger, food and water safety, environmental pollution, climate change, and armed conflicts.

The recent UN conference in Bali brought into focus the lack of agreement existing even within developed nations as how to concretely implement the development programs set forth at prior summits. While they all agree on the need to create coalitions between civil society and receptive states, rich countries, among them the United States, categorically refused to accept committing specific sums of money directed toward combating even basic needs, such as water and sanitation in poor countries. This reluctance stems from a fear that without any guarantees placed on the distribution of these funds, they will not reach the people most in needs of such relief. However, the Bali Summit succeeded in hammering out a 158-point agenda for the Johannesburg Summit on Sustainable Development agreed to by most of the delegates. The WSSD, whose focus will be more on poverty alleviation, could foreseeably generate one more success story of a global civil society similar to the Kyoto global warming treaty, the convention banning land mines, the International Criminal Court, and the Rio Summit on global warming. Valli Moosa, South Africa's environment minister was quoted as saying in the June 15, 2002 issue of *The Economist* that "the stage is being set for one of the most significant global gatherings of modern times."

Indeed, the world's hope for its future well-being lies heavily in the successful outcome of this summit.

The Role of Trade in a Sustainable World Economy

by Glenn Fieldman

INTRODUCTION

It is clear by now that the designers and promoters of “free trade” agreements such as NAFTA, the WTO and the proposed FTAA envision not only freer trade and investment, but a qualitatively different world. The vision embodied in these agreements and supported by their rules and powers is a truly global division of labor, in which nearly all resources are commodified, everyone is forced to specialize, and in which citizens of all countries shop in the global marketplace to satisfy most of their needs and wants. Advocates of this system claim that it will solve the festering problems of poverty in developing nations, and that it can also, albeit with some modifications, meet the criterion of “sustainability.” The purpose of this paper is to evaluate these claims, and by placing the criteria of sustainability and the alleviation of poverty first, to begin to answer the question just what role trade ought to play in a world that is both sustainable and far more equitable than it is at present.

The 1987 Bruntland Commission report placed “sustainability” firmly in the global lexicon. While the report said that a sustainable world was one that would allow citizens of the future to meet their own needs, it imposed few restraints on the present. Indeed, it advocated faster world growth, much of which would be realized through trade. Growth through trade was envisioned particularly as a mechanism to improve the lot of developing countries, which needed “freer market access” for their products and “significantly larger capital flows.”¹ The sustainability of that trade and growth, Bruntland claimed, could be achieved by respecting environmental constraints. At least the potential compatibility of free trade and sustainability were thus not questioned, but assumed. As regional and global free-trade agreements proliferated after Bruntland, their makers made the connection explicit. The judges in a 1998 WTO appellate panel, for example, declared that “sustainable development is one of the objectives of the WTO agreement.”²

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Environmentalists, of course, have actively challenged the trade regime that has evolved during the 1990s with the proliferation of regional and global trade agreements. They have advanced a number of proposals that are intended to “green” the trade regime, some of which will be examined in this paper. But as the demands of environmentalists for higher standards gain a hearing among mainstream free-traders, developing-country governments have claimed that enforceable standards will place their own developmental objectives in jeopardy. The North/South gap, which was verbally bridged with “sustainable development” language in the Bruntland report and again at Rio, has re-emerged. The pro-free-trade Economist magazine addressed (and capitalized on) the gap with its post-Seattle December 1999 cover, which featured a photograph of an impoverished South Asian child under the caption, “The Real Victims of Seattle.” The hostility of many Southern governments to the idea of international environmental standards is an amplified version of their disappointment with the outcomes of the trade regime in general; in their view, environmental and labor standards will simply delay further the benefits they hoped to realize from their participation in trade agreements in the first place.

These disputes have made trade negotiations increasingly problematic and unproductive, and raise the possibility that the conflict between Northern environmental advocates and Southerners concerned with development cannot be resolved within the present free-trade framework. They also suggest the need for a thorough review of the whole set of “goods” that will allegedly follow the realization of the free-trade vision.

THE NORTH-SOUTH DIVIDE

The attention and efforts of environmentalists have focused on the absence of environmental standards in trade and investment agreements. Echoing labor critics of free trade, many environmentalists argue that under current trade rules, trading countries engage in a “race to the bottom” on the basis of differing national environmental standards and regulatory contexts; corporations are given freedom by new trade/investment rules to locate production and resource-extraction activities in places where the overhead costs from environmental regulation will be lower. Such practices, environmentalists claim, bring down standards in the North as well, because the threat of corporate relocation discourages vigorous legislation and law enforcement in higher-standard countries. In addition, some trade agreements (notably NAFTA) contain provisions whereby national standards that are deemed trade-restrictive can be challenged in trade tribunals whose verdict is binding and to which environmental

advocates have no access. Thus environmentalists now seek the incorporation of environmental standards, safeguards and penalty provisions into the world's trading rules, or, alternatively, to force the internalization of environmental costs that are presently "external" to product prices.³ They also advocate opening the trade dispute resolution process to public scrutiny and establishing a mechanism to ensure that panelists are free from conflicts of interest.⁴ If the world trade regime continues to lack baseline environmental standards for production (not just products), measures to ensure the punishment of polluters and some written-in protection for existing and future Multilateral Environmental Agreements (MEAs), environmentalists fear the erosion of hard-fought environmental legislation. Greener producers will be competed out of markets, and WTO rulings like those in the tuna/dolphin case and the shrimp/turtle case will effectively undermine enforcement of environmental laws.⁵

For their part, representatives of developing countries have argued that the trade game is stacked against them in ways that have prevented them from realizing the benefits they believe can accrue from trade. They point out that while developing countries have liberalized their own trade, the developed countries, because of their superior economic and negotiating power, have been able to avoid full reciprocal liberalization, even under GATT/WTO rules. Developed countries, they argue, have stacked the trade deck with a variety of measures that continue to protect politically powerful producers in developed countries from developing-country competition. These measures include Voluntary Export Restraints (VERs), the Multi-Fibre Agreement (MFA), which protects developed-country textile producers from international competition for a time-limited period, and Super 301, which allows the U.S. Congress to use unilateral trade sanctions in certain instances.⁶ Developing countries also point out that agricultural subsidies, which violate the logic of free trade and trade agreements but are still used by First World producing countries, disadvantage this centrally important sector in both domestic and world markets.

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Recently, the agreed-upon phase out of the Multi-Fibre Agreement (MFA) and the U.S.' changed attitude toward agricultural subsidies have offered some hope to developing countries for increased access to northern markets hitherto closed to them.⁷ Thus, efforts to "green the GATT" appear to developing countries to represent yet another set of obstacles just as they anticipate their entry into massive developed-country markets. Despite the presence of subsistence farmers and fishers from developing countries at protests addressed to the Seattle WTO Ministerial and other such meetings, even some environmental NGOs in developing countries have resisted calls for upward harmonization of standards, at least within trade agreements

themselves. Martin Khor of the developing-country Third World Network argues that the inclusion of standards means that “[d]eveloping countries are likely to find themselves at a great disadvantage,” so “trade-related environmental measures should not be negotiated within the WTO. If they are negotiated at all, the venue should be within the United Nations...”⁸

The differing hopes of environmentalists and developing countries for the world trading system were in evidence at a high-level symposium held in March 1999 under WTO auspices. At the meeting, environmentalists argued for higher standards backed with trade sanctions, while developing country representatives expressed the belief that building environmental protection measures into the trade regime would destroy the main advantage (low-cost production) they bring to trade.⁹

These differences, however, should not obscure the important underlying assumption on which “green GATT” and developing country advocates agree: that an expanded world trade regime can be harnessed to serve the aspirations of both environmentalists and the populations of developing countries—that is, the set of assumptions embodied in the Bruntland Commission report. Following the recommendations of Bruntland, the most thoughtful schemes to “green the GATT” try to bridge the equity gap at the same time by including measures that are intended to help developing countries improve their production techniques to meet higher standards. Some of these consist of compensatory mechanisms such as releases from debt and/or funding for technology transfers,¹⁰ but some, notably those promoted by the development NGO Oxfam, advocate deeper reforms directed to commodity pricing and financial flows—in other words, a revival of some elements of the NIEO reforms first proposed in the 1970s.

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The fruition of such schemes might be a free-trading world similar to the European Union, in which the economy grows through liberalization of trade, while both environmental standards and living standards are harmonized upward through a strong set of rules on the one hand and various subsidization schemes on the other. Logically, some sort of global managerial authority to oversee enforcement and funding would also be required. Esty suggests a new Global Environmental Organization for this purpose, an entity which would be a complement to GATT/WTO.¹¹

But how realizable is this vision? Is it politically and organizationally feasible? Even more important, would it, if realized, be adequate to arrest the worst of the environmental destruction that now affects all critical earth systems—biological and physical? Equally important, would it enable the world’s poorest people and countries finally to share in the world’s expanding wealth?

Herman Daly is arguably the most prominent of what is presently a minority (indeed, some might call it 'heretical') tendency in the trade/environment/development debate. Echoing Keynes' expressed preference for "homespun goods," these critics claim that the world to which traders aspire—a fully global economy with a global division of labor—is inherently unsustainable, both socially and environmentally. While recognizing the necessity and inevitability of some international trade, they argue that trade should be a residual activity rather than the main organizing principle for global production. In short, they pose relocalization of economic activity as the alternative to globalization. The relocalization alternative will inform the review of the current trade regime presented here.

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GREEN FREE TRADE?

Harmonization of various national standards is inevitable in the global market sought by free traders. Trade and investment agreements have been targeted by environmentalists because in their present form they lead to downward harmonization as national environmental laws are in effect overturned by trade tribunals. But some environmentalists have argued that because of the power of trade agreements like the WTO to force harmonization, such agreements could be used as a vehicle to harmonize environmental standards upward.¹² Uniform standards are trade-compatible, and "[f]rom the perspective of transnational corporations, if environmental regulations must be endured, it is critical to the viability of global production and trade, that such standards are homogeneous from one jurisdiction to another."¹³

Upward harmonization could occur directly, via explicit recognition of existing international agreements (MEAs). Even advocates of a moderately environmentalist approach to trade argue that this should be done.¹⁴ Weinstein and Charnovits also claim that some of the very WTO rulings criticized by environmentalists (e.g., 'gasoline-Clean Air Act' and 'shrimp-turtle') indicate that the WTO is already "greening" because the rulings permitted import bans in cases where the imports would undermine national standards. In these cases, they say, the import restrictions were simply not administered properly. They conclude, then, that national laws restricting environmentally damaging imports are at least potentially safe from the WTO. This means that powerful markets like the U.S. could use their own domestic laws as an indirect way of forcing international standards upward.¹⁵

Others are much less optimistic about the WTO's potential to be a green instrument, arguing that the weight of the WTO agreement is on the side of the producers because "trade rules ignore the competitiveness effects of absent environmental regulation" and "governments are encouraged to compete for investment

by offering to become havens for polluters.”¹⁶ Even if Weinstein and Charnovits are right in their discernment of the green potential of WTO dispute panels, “environmentalists,” according to Shrybman, “now spend almost as much time defending existing laws, as they do fighting for new ones.”¹⁷ Proper administration of domestic laws involving import barriers is also extremely difficult, requiring time intervals to enable foreign producers to comply, as well as high costs. With respect to international environmental standards and the trade regime, in cases where international standards do exist, “other countries are free to invoke dispute resolution under WTO to challenge such environmental measures,”¹⁸ and “in most areas of environmental regulation, no international consensus or standard exists.”¹⁹

Forcing cost internalization is another “green free-trade” strategy based on the apparently simple idea that all costs, including environmental costs, should be represented in prices. Internalization would require a variety of strategies, which might include fees and taxes on, for instance, virgin raw materials, or effluents and legal liability for damages.²⁰ Subsidies, which are in direct contradiction to the internalization principle, would also have to be eliminated. Repetto argues that internalization would largely eliminate trade disputes as well as concerns over the environmental consequences of trade liberalization, and “[would] provide an additional economic benefit to developing countries. If the prices of their exports, especially to the northern hemisphere, included the cost of environmental compliance, then northern consumers would be paying a larger share of the environmental costs associated with their consumption patterns.”²¹

Forcing the internalization of costs through a green trade regime requires that the damage done be quantified—that is, assigned a price. For many environmental externalities, however, determining the price is a difficult exercise, so difficult that it may undermine the entire notion of a green global economy. The difficulty is further exacerbated by the fact that it is not only externalities from production that must be considered, but from trade itself.

Daly distinguishes between localized externalities (for which internalization may be an appropriate remedy) and pervasive externalities.²² He uses the emission of greenhouse gases as an example of a pervasive externality whose damaging effects, from the loss of flooded real estate to weather-related crop failures, are impossible to quantify. Trade generates several such pervasive externalities. One of them is increased greenhouse emissions from transport. Another, which despite its importance has received less attention in the context of discussions about trade, is the so-called “bioinvasion” problem—the introduction, deliberate or inadvertent, of new species into ecosystems where, in the absence of predators, they multiply uncontrollably with great destructive potential for the host ecosystem and human activities connected to it. Such invasions, marine and terrestrial, increase along with trade volumes and transport speeds. Higher speeds enable more non-native organisms to survive long journeys.²³ An estimated 3,000 species per day are now moving on what Bright calls the meta-currents of trade transport,²⁴ and that number is likely to grow alarmingly as trade in agricultural and forest products is liberalized. The results of bioinvasions

can be biologically and economically catastrophic, and, like the consequences of greenhouse emissions, they may be time-delayed. Thus preventive cost internalization, which is really the only meaningful kind in the context of potentially irreversible damage, is not feasible. Regulating to prevent bioinvasion would require a rigorous inspection of cargo, ships' ballast, and other invasion routes. Only one to two percent of loads entering the U.S. presently undergo such inspections.

Developing countries engaged in the world market will be obliged to continue their emphasis on commodity export, at least for the foreseeable future. For many of the poorest and least diversified countries, commodity trade is the only option.²⁵ As they increase commodity production, they will adopt policies that increase the commodification of land and facilitate the use of intensive harvesting, extractive and agricultural practices, as Mexico did in anticipation of the NAFTA agreement. An optimal green trade regime—that is, one which includes debt relief and perhaps even a negotiated commodity price agreement—might ease the pressure on developing countries to accelerate exports that has been so pervasive in recent years. But if we assume that most developing countries having comparative advantage in commodities will continue to export them in order to fund much of their consumption and development—a central assumption of global trade advocates—the damage such production causes will also continue, albeit at a somewhat slower pace. But mining, logging, plantation forestry, and forest clearing for agricultural production are devastating, especially to biodiversity in sensitive tropical regions. Commercially oriented fishing and aquaculture have wreaked havoc with marine ecosystems. Here, too, the problem of pervasive externalities seems inevitable. Karliner cites the “collateral damage” stemming from lumbering in Papua New Guinea, “...including changing the course of rivers, destroying community gardens, polluting traditional water supplies and ripping up coral reefs so that log ships...can pull into isolated areas.”²⁶

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A free-trade world, even a “green” one, would accelerate the commercial orientation of agriculture. While some of the environmental problems associated with agriculture, such as those stemming from excessive pesticide use, might be dealt with by internalization measures, trade-oriented agriculture is also extraordinarily costly to agricultural biodiversity—again, a pervasive externality. Here, the threat stems from the replacement of the biodiverse agricultural systems characteristic of subsistence or semi-subsistence agriculture with the monocultures characteristic of large-scale production for exchange. In his superb study of Mexican agriculture, Angus Wright contrasts traditional subsistence/local market agricultural systems with commercial export-oriented systems, documenting the genetic narrowing that has taken place with commercial orientation and its potential consequences for world agriculture.

The strategy of attempting to preserve strains of crops through gene and seed banks will ensure only “partial replacement” of the genetic diversity that co-evolved for thousands of years with traditional agriculture.²⁷

Thus while cost-internalization works in theory, and might be applied in cases where damage or the cost of preventing it could be easily quantified, many of the environmental problems associated with trade are unquantifiable and thus not amenable to this solution. If full internalization could be achieved, the trading system would be considerably greener, but also much smaller, because the volume of goods that could be traded profitably would diminish greatly under a full-internalization regime. Transnational corporations, even those which are environmentally conscious, are indisputably the most vigorous advocates of the present system because it facilitates access to markets and raw materials. Thus it is to be expected that they would resist attempts to apply the “polluter pays” principle rigorously even if it were applied evenly.

In addition to these problems, Ayres argues that because the global trading economy favors transnational producers who are able to afford ocean shipping, it has “reduced incentives to develop efficient methods of re-use, repair, renovation, manufacturing and recycling materials in a local region.”²⁸ He points out that German packaging wastes are sold as raw materials in many parts of the world, “undercutting local scavengers and reducing the incentives for German industry to develop uses for these materials, as was intended [by environmental legislation].”²⁹

Perhaps the most compelling reason for skepticism about how “green” a world trading regime might be is that developed countries, which have dedicated substantial resources to environmental assessment, measurement, monitoring, enforcement and remediation, have little to show for it even within their own boundaries. Their measurable achievements in improving air and water quality must be placed against the accelerated depletion of critical desert, forest and marine ecosystems, which indicates the limited efficacy of instruments so far invented to make growth “sustainable.” It is reasonable to conclude that replicating even part of the developed countries’ enforcement regime—monitoring adherence to baseline environmental standards, forcing producers to internalize costs—is bound to be more difficult in developing countries which lack budgets, equipment and personnel, and in which the corruption of poorly paid staff is a chronic problem.

ENFORCEMENT AND FUNDING MECHANISMS

Because the poverty of developing countries is an obstacle to their environmental progress, various funding schemes for them have become important elements of proposals to green the trading system. At the Rio Conference on Environment and Development in 1992, “debates over new and additional financial resources and about technology transfer were central to...the process.”³⁰ Following is a brief review of progress to date.

The developed countries have shown little willingness to address longstanding complaints of developing countries about the injustices of the international economic

system, which include rock-bottom commodity prices and massive debt-service obligations. Many environmentalists agree that debt relief is an important step that would enable poorer countries to slow the environmentally destructive breakneck exploitation of resources that is driven partly by loan service obligations, and that would, by diminishing financial pressures, enable them to upgrade productive facilities and law enforcement. But even as recent announcements of partial debt relief from the World Bank/IMF and the U.S. government were featured in the press, critics pointed out their inadequacy and the fact that IMF conditionalities attached to the plans, which require drastic cuts in government spending and therefore undercut government's role in environmental protection and law enforcement, remain in place. Ecuador, for example, which in late September 1999 announced that it was defaulting on so-called Brady Bonds, is not poor enough to qualify for the U.S. debt-relief program.³¹ Pakistan, with an external debt burden of 115 percent of gross domestic product, is similarly ineligible under this plan (although Pakistan has recently received some debt relief for reasons related to the September 11, 2001 attacks on the U.S.)³²

The picture is equally unpromising with respect to financial assistance from developed countries linked specifically to environmental improvements. The Montreal Protocol, which included measures to help developing countries honor it, is often cited as a potential model for an expanded assistance program. But as Karliner points out, "a large portion of [the Montreal Protocol] funds, which are earmarked for disseminating CFC substitutes to the Third World, wind up in the pockets of the very corporations that created the problem in the first place and that are now marketing hazardous HFC and HCFC alternatives."³³

The developed countries' political will to come up with the funding to improve environmental standards and enable developing countries to compete in a green trade regime is nowhere in evidence.

The Global Environmental Facility (GEF) established in 1990 to limit the negative impact of development projects³⁴ is totally inadequate to meet the environmental needs identified by the World Resources Institute: prevention of desertification and deforestation, population control, fresh water, biodiversity, ozone depletion and climate change.³⁵ Nor does it come close to the \$125 billion estimated at Rio to necessary for developing countries to meet the costs of Agenda 21.³⁶ The GEF cannot even begin to finance the upgrades of industrial and resource extraction technologies that might be required under a green trade regime.

The developed countries' political will to come up with the funding to improve environmental standards and enable developing countries to compete in a green trade regime is nowhere in evidence. Just how great the difficulties may be in meeting the bill for a more ambitious effort can be deduced from the hesitation of developed EU countries to admit less developed East European ones, which would lay claim to

substantial EU development funds. The enormously expensive reunification of Germany showed how expensive it can be to bring lagging economies up to First-World standards. In Europe, the development gaps between members and non-members are nowhere near as great as those that exist globally between developed and least-developed trading countries.

The organizational problems presented by a green and equitable trading system are equally daunting. Environmentalists and developing country representatives alike have wrestled with the organizational dilemma. The Committee on Trade and the Environment of the WTO is generally understood to be less than adequate to integrate environmental concerns into trade. Esty's proposed Global Environmental Organization (GEO) would "balance...the GATT's market access-oriented rules" and "make 'positive' determinations concerning environmental obligations," "reliev[ing] pressure on the GATT to be an environmental body."³⁷ Esty also argues that a GEO should fund programs in developing countries that address global environmental problems, at a level of \$15 to \$20 billion annually.

Even this sum, which is far in excess of the current funding levels of the Global Environment Facility, falls far short of meeting developing countries' environmental needs. And it is highly unlikely that developing countries would muster great enthusiasm for a global environmental organization that concentrated on global needs while neglecting the panoply of critical environmental problems that are "only" local. Consequently, a regime that meets the Brundtland objectives must go further to "address the causes of the disease rather than its symptoms," as one Jordanian news editorial put it.³⁸ The development NGO Oxfam proposes, in addition to debt relief and funding from developed countries to help developing ones meet higher environmental standards, a set of reforms intended to address the profound disadvantages that developing countries face as trading nations, particularly low and/or unstable commodity prices. They propose bringing trade, environment and development together in a new International Trade Organization (ITO) which would merge GATT/WTO and UNCTAD, and would also have a mandate for international environmental protection.³⁹ This scheme would effectively bring trade, the environment and development together under the auspices of the United Nations. It has the merit of comprehensiveness, and is effectively a revival, with improvements, of the integrated regime originally proposed at Bretton Woods.

A "Super ITO" or its equivalent is the most logical alternative if the environment and development are to be addressed in a coordinated manner. Leaving aside the question of its political feasibility (it was the United States' objections that effectively torpedoed the original ITO), the very complexity of its tasks is likely to mitigate against the effectiveness of a "Super ITO" even if it could be established. As Richard Norgaard pointed out in a discussion of efforts to integrate multiple problem areas and agencies in a new (U.S.) Department of Energy following the 1970s energy crisis, "One agency would make sense except for the immense difficulties of coordinating everyone to a multitude of tasks."⁴⁰ He argues,

Most countries are already pretty well bogged down in an informational, bureaucratic and political quagmire keeping a visible hand on development to the modest extent they do....In my judgment, there is little potential for further refinement of modern social rationality to better respond to our environmental dilemma by increasing the responsibilities of bureaucracies or by redrawing their boundaries of responsibility and lines of coordination.⁴¹

By putting the caveats before the horse, so to speak, the author does not mean to suggest, as some realists do, that international institution-building is a hopeless enterprise. It is vitally necessary, even if the present trend toward global economic integration were to be arrested. However, it is difficult to envision one, or a set of, international institutions that could manage adequately the equity and environmental problems of a global economy in which trade volumes are expanding, new areas of production (e.g., services, government procurement and the like) are brought into the free-trade arena, and resource extraction penetrates the remotest corners of the earth. Like central planners in the former Soviet Union, such institutions would be overwhelmed by the magnitude of their tasks and defeated by increases in trade and growth. As Peter Newell suggests, the basic problem is not itself organizational but rather “the failure to integrate environmental objectives into other policy areas,”⁴² which requires rethinking development and trade strategies in environmental and equity terms, rather than merely overlaying them with another organizational mandate. Newell also points out that all existing global organizations with significant power are dominated by the developed countries. They are thus both undemocratic and inclined to avoid dealing with destructive Northern production and consumption habits.⁴³ Thus, the most productive roles for both global and national institutions may be to facilitate the reduction of trade volumes, address the coercive policies of the World Bank and the IMF, which force developing countries to trade as a condition for loans, and move, especially in the North, toward living within the environmental means of their geographic boundaries.

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TRADE AND DEVELOPING COUNTRIES

“Greening the GATT” thinkers assume that trade—even “greened” trade—can be made to work for developing countries, provided that the trade regime itself undergoes certain modifications, and that adequate financial concessions and compensatory financing are available. Leaving aside the uncertainties of financing, discussed above, the assumption here is that rectifying problems in the trade regime will enable developing countries to prosper as their agricultural and manufactured products gain access to developed country markets.

One of the central problems with this notion is that developed country markets

are near saturation already. Record U.S. trade deficits and the indebtedness of U.S. consumers in the world's most important market do not augur well for the future. According to the 1999 UNCTAD Trade and Development Report, "Many manufactures exported by developing countries are now beginning to behave more like primary commodities as a growing number of countries simultaneously attempt to raise their exports in the relatively stagnant and protected markets of industrial countries."⁴⁴ Dasgupta argues that even as developed country protection of agricultural products and textiles is lifted and developing countries rush to sell to these markets, "there is the possibility of a global glut in production" and falling prices.⁴⁵ Developing countries have oriented themselves to trade in the belief that higher national incomes will be a consequence of export performance; thus increased demand in developing countries waits on sales in developed ones. Inadequate first-world markets may well derail this whole chain of expectations.

Along with other critics, Dasgupta argues that multinational corporations' domination of international trade via advertising, preferential access to capital, superior technology and R&D ensure that "there can never be a level playing field in the competition between the resource-rich MNCs...and the local companies."⁴⁶ Thus the gains from trade will continue to flow to the corporations, not the developing countries. The full inclusion of services in the GATT/WTO ambit, along with protection for intellectual property rights (TRIPs) will only make the situation worse.⁴⁷

These problems suggest that developing countries are likely to continue to suffer chronic trade deficits even under a more even-handed trade regime, and will have to borrow to compensate, as Costa Rica has, despite exceptionally favorable access to U.S. markets.⁴⁸ It is hard to imagine the developed countries committing themselves to the continual recycling of funds, via debt relief, environmental funding and other types of aid that would be necessary. Foreign investment, the panacea of trade advocates, has so far amounted to little—about \$8 per capita in the 49 Least Developed Countries as of 2001.⁴⁹

Paul Ekins argues that the potential of developing country gains from trade has been distorted all along by the fact that

...in less-industrialized countries a large amount of subsistence production and consumption occurs. When subsistence production, which is not accounted for in economic accounts, is shifted to production for trade, which is included in these accounts, a false amount of gain is perceived.⁵⁰

This seldom-mentioned but very important fact is highly significant for a realistic assessment of developing countries' stake in joining a fully integrated world economy. It also highlights one of the most profound costs of trade orientation in developing countries, which is the displacement of enormous numbers of people who are then dependent on finding work in commodity production. In most cases, such people are the developing country poor for whom trade-related jobs are necessary. A sort of vicious circle emerges, in which commodity production for trade leads to displacement which in turn leads to the need for more trade and investment to generate employment.

An example is the displacement of nearly a million Mapuche from their ancestral lands in Chile, which are now being used for export-oriented timber plantations. The Chilean government announced an aid package amounting to a princely \$274 per person for education, infrastructure and technical assistance for remaining Mapuche farms.⁵¹ The clear assumption underlying the program is that the Mapuche will find places elsewhere in the economy, but Chile's current unemployment rate is around 10 percent,⁵² making their prospects poor.

While subsistence agriculturalists in developed countries also suffered this fate beginning with the English enclosure movement, the numbers that must be absorbed into a fully-commodified global economy in the near future are staggering. So is the extent of expansion in the economy that would be necessary to accommodate them. In 1998 the International Labor Organization estimated that globally, one billion people were unemployed or underemployed.⁵³ The millions of currently unemployed in developing countries, along with those who face the same situation as their lands and lives are commodified in the future, may be forgiven for finding platitudes about "job growth through trade" insulting.

Space does not permit the elaboration of a full alternative development plan for low-income countries. However, preserving and/or expanding the surviving locally oriented systems of production makes sense in terms of sustainability and human well-being. Cavanagh and George argue that raising rural incomes through land redistribution and land-tenure reform along with complementary credit and other measures would generate demand for locally produced craft and industrial products, helping to generate employment.⁵⁴ A variety of studies shows that small farms producing for subsistence and local markets are much more labor-intensive than large commercial ones. Such farms, which are agriculturally diverse and much less pesticide- and fertilizer-dependent than commercial farming⁵⁵ can also be more productive per land area unit than commercial ones if total food and fiber output are measured. As Wright points out, studies claiming to "compare" traditional multicrop with commercial monocrop agriculture have measured only the yield of the monoculture crop in both types of fields—an egregious error.⁵⁶

The disenfranchised and potentially disenfranchised of the global economy—small farmers without secure land tenure rights, pastoralists, and groups who derive a living from forests and other local commons—have not been inactive in their own behalf.

Rurally oriented development would reverse the conventional development path pursued in both export-oriented and import-substitution development strategies, which despite their other differences have alike followed the logic of commodification of land and labor, squeezing small farmers and expropriating forest and other commons. Reforms enabling rural people to support themselves would not eliminate international

trade, but, Cavanagh argues, they would diminish it substantially,⁵⁷ both by enabling the rural beneficiaries of reforms to meet many of their own needs independent of the world market, and by removing substantial tracts of land from commodity production. One consequence might be an increase in the prices of traded commodities, which would help to diminish their over-consumption in developed countries. Sachs et al put it thus: "...industrial countries do far more harm to the poor in the South by what they lay claim to for themselves than by withholding assistance."⁵⁸

The disenfranchised and potentially disenfranchised of the global economy—small farmers without secure land tenure rights, pastoralists, and groups who derive a living from forests and other local commons—have not been inactive in their own behalf. Governments, even those that are nominally democracies, are challenged from below by peoples whose self-preservation demands the preservation of their territories from commodification: peasants in Brazil and Mexico demanding and dying for land reforms, forest-dwellers in Cameroon, India and Amazonia, Native Americans in Canada. FitzSimmons et al. suggest that the precariousness of elite-dominated state structures in developing countries and the absence of a clear political and economic hegemony leave space in which the struggles of the disenfranchised can develop and "exert pressure upon the state if not bring [about] its paralysis, collapse, or overthrow."⁵⁹ Alliances of the disenfranchised with advocates outside their own states are also possible; the extractive reserves in Brazil were the product of such an international alliance between rubber-tappers and activists from other, primarily developed, countries.

CONCLUSION

"Colonialism and development," Larry Lohmann writes, have consisted of attempts to break down...wholes and use the fragments, deprived of their old roles, to build up new wholes of potentially global scope."⁶⁰ The global trade regime is the current, and perhaps the ultimate, embodiment of these long-term processes. But ecosystems and sustainable agricultural systems are not simply parts that can be incorporated into a new assembly. Gene banks, for example, are not adequate substitutes for living agroecosystems, nor can the global economy incorporate those who are made redundant by the disassembly of existing local economies.

The evidence presented here suggests that a fully integrated world economy cannot hope to be either sustainable or equitable, and that the Brundtland Report and the declarations from Rio superimposing these goals onto the existing design of the world economy were politically-driven attempts to square the circle. If the North stands by its claims to honor these objectives, it must instead face the necessity of, as Sachs puts it, "putting our own house in order"⁶¹ and accepting a less cornucopian but more realistic vision of life in the coming Age of Limits.

Notes

¹ W.M. Adams, *Green Development: Environment and Sustainability in the Third World* (New York: Routledge, 1990), pp. 59-60.

- ² Michael M. Weinstein and Steve Charnovits, "The Greening of the WTO," *Foreign Affairs* 80:6 (November/December 2001), p. 151.
- ³ On internalization, see Daniel C. Esty, *Greening the GATT: Trade, Environment and the Future* (Washington, D.C.: Institute for International Economics, 1994), pp. 176-178.
- ⁴ "Testimony of Lori Wallach Regarding U.S. Preparations for the World Trade Organization's 1999 Ministerial Meeting," (Public Citizen 1999), p. 7. At <http://www.citizen.org.pctrade/gattwto/Testimon.htm>.
- ⁵ *Ibid.*, p. 14.
- ⁶ Biplab Dasgupta, *Structural Adjustment, Global Trade and the New Political Economy of Development* (London: Zed Books, 1998), p. 151.
- ⁷ *Ibid.*, Ch. 4.
- ⁸ Martin Khor, "How the South is Getting a Raw Deal at the WTO," in *Views from the South: The Effects of Globalization and the WTO on Third World Countries* (San Francisco: International Forum on Globalization, no date), pp. 43-44.
- ⁹ "Report on the WTO's High-level Symposium on Trade and Environment" (International Institute for Sustainable Development, 1999). At <http://www.wto.org/wto/hims/sumh1env.htm>, accessed October 1999.
- ¹⁰ Daniel C. Esty, *Greening the GATT*, pp. 196-199.
- ¹¹ *Ibid.*, Ch. 4.
- ¹² Weinstein and Charnovits, "The Greening of the WTO," pp. 148-149.
- ¹³ Steven Shrybman, "The World Trade Organization: A Guide for Environmentalists" (Draft) (West Coast Environmental Law, 1999), Part II, p. 6. At <http://www.wcel.orgweel/pub/1999/12757.html>. Accessed December 2002.
- ¹⁴ Weinstein and Charnovits, p. 156.
- ¹⁵ *Ibid.*, pp. 151-152.
- ¹⁶ Shrybman, p. 5.
- ¹⁷ *Ibid.*, p. 6.
- ¹⁸ *Ibid.*
- ¹⁹ *Ibid.*
- ²⁰ See Robert Repetto, "Complementarities between Trade and Environment Policies" in Durwood Zaelke, Paul Orbuch and Robert F. Housman, eds., *Trade and the Environment: Law, Economics and Policy* (Washington, D.C.: Island Press, 1993), pp. 242-243, and Esty, *Greening the GATT*, pp. 66-67. Esty appreciates the difficulties of policymaking to force internalization.
- ²¹ Robert Repetto, "Complementarities..." in Zaelke et. al, eds., pp. 243-244.
- ²² Herman Daly and John B. Cobb, Jr., *For the Common Good: Redirecting the Economy Toward Community, the Environment and a Sustainable Future*, 2nd Revised Edition (Boston: Beacon Press 1989/1994), pp. 141-142.
- ²³ Chris Bright, *Life Out of Bounds: Bioinvasion in a Borderless World* (New York: Norton 1998), pp. 156, 166.
- ²⁴ *Ibid.* p. 156.
- ²⁵ See, for example, Belinda Coote with Caroline Lequesne, *The Trade Trap: Poverty and the Global Commodity Market*, 2nd revised edition, (Oxford: Oxfam, 1996), pp. 6-7.
- ²⁶ Joshua Karliner, *The Corporate Planet: Ecology and Politics in the Age of Globalization* (San Francisco: Sierra Club Books 1997), p. 128.
- ²⁷ Angus Wright, *The Death of Ramon Gonzalez: The Modern Agricultural Dilemma* (Austin: University of Texas Press 1990), Ch. 6.
- ²⁸ Robert U. Ayres, *Turning Point: The End of the Growth Paradigm* (New York: St. Martin's Press 1998), p. 147.
- ²⁹ *Ibid.* p. 146.
- ³⁰ Lorraine Elliott, *The Global Politics of the Environment* (Washington Square, NY: New York University Press 1998), p. 192.
- ³¹ Avi Kumin, "Debt Burdens Need Relief" (editorial), *San Francisco Chronicle*, October 6, 1999, p. A23.
- ³² Arkady Ostrovsky, "Pakistan wins official debt deal," *Financial Times*, December 14, 2001, p. 4.
- ³³ Karliner, *Corporate Planet*, p. 51.
- ³⁴ Elliott, *Global Politics...* p. 199.
- ³⁵ Gary Bryner, *From Promises to Performance: Achieving Global Environmental Goals* (New York: Norton 1997), p. 282.

- ³⁶ Elliott, p. 194.
- ³⁷ Esty, p. 80.
- ³⁸ "Look at Causes, Not Symptoms" (editorial), *Star* (Amman, Jordan) June 24, 1999. Excerpted in *World Press Review*, October 1999, p. 13.
- ³⁹ Coote and Lequesne, *The Trade Trap*, p. 190.
- ⁴⁰ Richard B. Norgaard, *Development Betrayed: The End of Progress and a Coevolutionary Revisioning of the Future* (New York: Routledge 1994), p. 21.
- ⁴¹ *Ibid.* pp. 21-22.
- ⁴² Peter Newell, "New Environmental Architectures and the Search for Effectiveness," *Global Environmental Politics* 1:1 (January/February 2001), p. 40.
- ⁴³ *Ibid.* pp. 44-45.
- ⁴⁴ "Overview of the UNCTAD Trade and Development Report 1999," UNCTAD, p. 7. At <http://www.unctad.org/en/pub/pubframe.htm>. Accessed September 1999.
- ⁴⁵ Dasgupta, *Structural Adjustment, Global Trade...* pp. 205-6.
- ⁴⁶ *Ibid.* p. 202.
- ⁴⁷ *Ibid.* pp. 166-174.
- ⁴⁸ Marc Edelman, *Peasants Against Globalization: Rural Social Movements in Costa Rica* (Stanford, CA: Stanford University Press 1999), pp. 89-90.
- ⁴⁹ Rubens Ricupero (UNCTAD Secretary General), Cham Prasidh and Maria Livanos Cattau, Letter to the Editor, *Financial Times*, May 9, 2001, p. 16.
- ⁵⁰ Paul Ekins, "Trading Off the Future: Making World Trade Environmentally Sustainable," (Summary) in *A Survey of Ecological Economics*, Rajaram Krishnan et. al, eds. (Washington, DC: Island Press 1993), p. 308.
- ⁵¹ Jimmy Langtman, "A Once and Future Home," in *The San Francisco Chronicle*, October 21, 1999, pp. A12, A15.
- ⁵² Mark Mulligan, "Chilean contenders brush up on their street creed," *Financial Times*, December 14, 2001, p. 3.
- ⁵³ Quoted in *The IFG Bulletin*, Vol.1, Issue 3, p. 7. (San Francisco: International Forum on Globalization 2001).
- ⁵⁴ See Rob Broad and John Cavanagh, "No More NICs," in *Creating a New World Economy: Forces of Change and Plans for Action*, Gerald Epstein et. al, eds. (Philadelphia: Temple University Press 1993), pp. 37-390, and Susan George, *A Fate Worse Than Debt: The World Financial Crisis and the Poor* (New York: Grove Weidenfeld 1988/1990), p. 245.
- ⁵⁵ Eric Eckholm, *The Dispossessed of the Earth: Land Reform and Sustainable Development* (Washington, D.C.: Worldwatch Institute 1979), pp. 25-26.
- ⁵⁶ Wright, *The Death of Ramon Gonzalez*, p. 156.
- ⁵⁷ Broad and Cavanagh in Epstein et al, eds., p. 388.
- ⁵⁸ Wolfgang Sachs, Reinhard Loske, Manfred Linz et al, *Greening the North: A Post-Industrial Blueprint for Ecology and Equity* (New York: Zed Books 1998), p. 158.
- ⁵⁹ Margaret FitzSimmons, Joseph Glaser, Roerto Monte Mor, Stephanie Pincetl, Sudhir Chella Rajan, "Environmentalism and the Liberal State," in *Is Capitalism Sustainable? Political Economy and the Politics of Ecology*, ed. Martin O'Connor (New York: The Guilford Press 1994), p. 213.
- ⁶⁰ Larry Lohman, "Resisting Green Globalism," in *Global Ecology: A New Arena of Political Conflict*, ed. Wolfgang Sachs (London: Zed Books 1993), p. 157.
- ⁶¹ Sachs, *Greening the North*, p. 158.

Globalization and Environmental Policy

By John Barkdull

Globalization has generated widespread opposition, in large part because of the environmental threats globalization both exacerbates and creates. Conservatives, liberals, socialists, labor unionists, greens, and many others share a distrust of the globalization process as it is understood and implemented today. These disparate, often contending, groups differ considerably as to why they oppose globalization, some emphasizing economic values, others cultural, yet others ecological. This conflict of opinion among globalization opponents obscures important common ground that could produce more effective political organizing for defense of environmental values. Identifying and describing their shared values and perspectives can contribute to coalition building across ideological and policy lines so that environmental sustainability is more likely to be achieved.

Globalization is a multifaceted phenomenon. The term, as a contested and important political sign, carries many meanings. Various authors have defined it as a qualitative change in the character of interdependence, the deepening of the world economy, the emergence of a single world polity, the rising significance of transsovereign problems, the end of the significance of territory and distance, a subjective apprehension that we are all part of one world, and more. Efforts to define it in terms of a single significant dimension are misguided. In general, these various meanings amount to the claim that along many dimensions—cultural, economic, political, environmental, psychological—the world has become a single whole rather than a collection of loosely related national states. Which aspect of globalization is important, how it has come about, what implications it holds for human affairs will vary from context to context. Nonetheless, like other contested political terms (democracy, freedom, justice, power and the like) globalization refers to a related set of concerns.

Similarly, the term “environment” has no simple meaning. Environment might refer to the natural world, that which is not a product of human imagination and labor. This might in turn mean that the environment refers only, or mainly, to wilderness areas of the world. By contrast, it could refer both to the natural and to the built environment, meaning then all that exists outside the human body and mind. In practice, the line between the built and the natural environment is quite blurry. Wilderness areas are such only because humans have socially constructed the notion of pristine wilderness. Setting aside lands to represent wild nature is itself a human intervention into the natural world. Moreover, no part of the world lacks the stamp

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of human activity, although discerning it might be difficult to the casual observer. As Steven Vogel notes, the focus of our concern is “the world that surrounds us, a world that is always already the product of our previous practices, and changes as those practices change.”¹

Globalization is a multifaceted phenomenon.

Nonetheless, humans did not build or create everything on which human life depends. The planet, along with its bioregions, climate, landscapes, oceans, living plants and animals, and the complex relationships that tie all such entities together were here before humans and will likely be here after humans are gone. Environment here refers to the totality of external physical conditions that affect the growth, health, and development of living beings. The human environment designates the external physical conditions, both built and “natural,” that are more or less directly implicated in human well-being, while environment more broadly refers to the external physical conditions that affect all life on the planet.

The environmental problem is characterized by those human activities that affect external physical conditions in ways detrimental to the growth, health, and development of living things. Human activities that have been the focus of the policy debate have been mostly economic, mostly related to industrialization and the associated shift from low-energy, agricultural production to manufacturing and transportation utilizing significant amounts of energy from coal, oil, natural gas, nuclear power, and hydroelectric sources. Industrialization and high energy use, it is said, threaten to disrupt the external physical conditions for life, but they are also said to offer the best hope for raising global living standards. Globalization promises more industrialization and more energy use, which in turn means wider and more intensive effects on the environment for living beings, perhaps to the point that ecological systems deteriorate so far that the continued growth, health, and development of living things becomes questionable. Hence, the policy debate centers on the question of whether the predominant trend in global economic arrangements can be sustained for the long term. If so, how; if not, then what alternatives do we have?

In assessing the relationship between globalization and the environment, this paper focuses on several policy responses to globalization. These can be understood as “policy projects” that incorporate a set of values, make assumptions about human motivations, explain how the world works, identify the limits of the possible, and draw conclusions as to the best policies to adopt in pursuit of certain ends. The task here is to draw out the aspects of these policy projects relevant to the environmental question, with the aim of showing that widely divergent responses to the challenges of globalization can nonetheless find areas of agreement on which to advance effective environmental policies that enjoy broad popular support.

THE CHALLENGE OF GLOBALIZATION

Globalization presents a number of challenges. Globalization, it is said, forces nations and subnational governments into a policy “race to the bottom.” As various authorities compete to attract and hold highly mobile corporate investment, they push wages down, discourage unionizing, offer corporate tax breaks and subsidies, and relax safety, labor, and environmental regulations. Globalization entails loss of sovereignty that threatens democratic governance as well as the social gains won through decades of hard political work. Furthermore, globalization is said to exacerbate income inequalities, especially in struggling nations in the developing world. Economic change brought about by globalization also creates social upheaval, threatens cultural identities and disrupts communities. All these and more can lead to high levels of political conflict and violence. Political conflict, in turn, creates massive refugee flows, destabilization, and powerful resentments against the nations pushing globalization forward, from which terrorist reprisals may ensue.

Globalization does have its ardent supporters. They counter with claims that the surest road to economic growth is opening and liberalizing the market. Economic growth raises the incomes of the poor. It also provides the means to pursue social goals, such as worker safety, education, income support, and environmental protection. Moreover, economic growth induces a demographic transition, slowing the birth rate and alleviating a major cause of environmental harm. Also, globalization, by turning countries toward the market, encourages political liberalization, opening space for environmental activism to operate. Cultural conflict declines, without necessarily erasing identities. International cooperation to solve common problems becomes normal, and countries learn to negotiate rather than fight. Global communications technologies enable the oppressed to be heard, injustices to be addressed, and environmental values to be presented to a global public.

Economic growth that is driven by the world market is heavily dependent on fossil fuels.

Despite such optimistic interpretations, it is difficult to overlook the environmental challenges globalization both creates and makes worse. Mainly human-induced, global climate change is bound to increase as globalization proceeds. Economic growth that is driven by the world market is heavily dependent on fossil fuels. Transporting goods to serve world markets requires energy mostly from oil and coal, and development around the world means increasing reliance on automobiles. Economic growth especially in the less developed countries also will generate more air, water, and soil pollution. The global demand for wood products is driving lumber operations into previously untouched areas, such as Siberia, as well as accelerating deforestation in the tropics. The result is lost biodiversity, estimated now at one thousand species per year extinct due to human activities.² Demand for food and urban space hurries the conversion of wild areas to agriculture and pavement.

In the face of these and many other environmental problems, the capacities for governance are limited. A relative handful of countries have strong laws, plus the willingness and ability to enforce those laws. International environmental treaties are numerous but, focusing for the most part on discrete environmental problems, they fail to address the bigger issues of the ecological effects of economic growth. Moreover, the ideology of economic growth predominates in policy making circles. National leaders and the guiding hands in the international financial institutions generally agree that the cure for social ills is growth—sustainable growth, they may claim, but growth before all else.

Opponents of globalization lack the unity to press an effective environmental agenda. Opponents have many divergent reasons for finding current globalization trends distressing. Some are most troubled by the threat to social democracy; they fear that globalization will render popular organizing irrelevant and result in the dismantling of hard-won social protections. Others deplore the loss of national identity and autonomy. They believe that the nation is something to be valued in its own right, not merely because a government can deliver the goods to individual consumers. Some are worried that Main Street, domestic-oriented businesses will succumb to global competition. Yet others find the loss of local traditions, direct democracy, and human-sized economic institutions distressing. To some in wealthy countries, globalization means lost income and benefits for workers, as the impoverished in developing nations take well-paid manufacturing jobs away. A few see globalization as just the latest chapter of capitalist development, meaning more exploitation, more violent repression of the opposition to profit-making corporate activities, more war, and all the rest that capitalism, they say, brings. Hence, globalization opponents might promote nationalism, direct democracy, unions, the welfare state, or revolutionary change as the appropriate response. Although all are opponents of the current brand of globalization, they differ widely on why. What common ground can these diverse and often contending foes of globalization find regarding environmental matters?

Opponents of globalization lack the unity to press an effective environmental agenda.

In part, the question of which way to address the environmental effects of globalization depends on some notion of how severe the environmental problem is. Positions on this issue vary widely. Enthusiasts for globalization would be most likely to say that no crisis exists. Resource scarcities and threats to human well-being arising from environmental pressures are best met by allowing the market and human ingenuity to devise new solutions. Probably the most widely held view, shared by many adaptationists, is that environmental problems are serious and require policy intervention; leaving things to the market is not sufficient. Nonetheless, existing institutions—the market, representative democracy, the system of sovereign states—are fundamentally sound and able to adapt to environmental challenges. Greens,

deep greens, leftists, and others tend to argue that environmental problems can only be met successfully with significant institutional transformation. The corporate-dominated market and the electoral system awash in corporate cash offer little hope of real change, but more democratic, egalitarian institutions might. Lastly, for pessimists, it is already too late for an effective response. Human population has already exceeded the earth's carrying capacity, and the kind of sweeping reform needed to reduce population and enact stringent environmental laws is remote; survivalist escape is the sensible option for the prescient individual. Although only experience can resolve this matter, the truth regarding human well-being probably lies somewhere between those who see the problem as manageable and those who advocate institutional reform to meet the problem. In other words, the environmental challenge is significant enough to require a high-level response, but the world is not about to end, nor even the human race.

Human population has already exceeded the earth's carrying capacity, and the kind of sweeping reform needed to reduce population and enact stringent environmental laws is remote.

Yet, if we broaden our view beyond the needs of human beings, the situation does appear considerably worse. Environmental philosophers remind us that our ethical obligations extend beyond ensuring the survival of the human species and guarding against health threats posed by environmental degradation. Other living creatures, they claim, have moral standing too. Hence, biodiversity loss presents a serious moral issue, and an adequate response to globalization must respect the rights of other living things to have a home on planet earth. If this is so, then that means we also have an obligation to refrain from disrupting the evolutionary processes on which biodiversity depends. Therefore, even if the most sanguine view of how pressing the environmental challenge is for human well-being is correct, an important duty to address these problems remains.

THE ENTHUSIAST POLICY PROJECT

As currently practiced, the globalization process reflects a human-oriented environmental philosophy and the belief that corporate-led economic growth is the best solution to environmental problems. Although the globalization enthusiasts in the World Bank, the International Monetary Fund, and most of the world's major financial and political capitals nod in the direction of "sustainable development," the overriding concern is to maintain the conditions for economic growth. The enthusiasts' view toward globalization more generally is that it is progressive and all but inevitable. Their main fear is that misguided governments facing domestic political resistance will halt progress toward further economic liberalization to serve immediate political needs. In short, as an International Monetary Fund article put it, "The forces of globalization must be embraced."³

Behind this attitude lies the belief that endless economic growth is both possible and desirable. Faced with claims that there are environmental limits to growth, globalization enthusiasts have adopted a particular formulation of the concept of sustainable development, or, in a widely known definition, development that meets the needs of the present without compromising the ability of future generations to meet their own needs.⁴ More simply, the World Bank calls for “development that lasts.”⁵ The emphasis remains on maintaining the conditions for strong economic growth. Unless environmental problems are addressed, the World Bank says, “resource depletion and population growth places the sustainability of development at risk in a large number of the poorest countries.”⁶ Likewise, the IMF worries that environmental degradation could “dampen a country’s economic growth.”⁷ Indeed, the IMF claims that the export-oriented growth policies of the East Asian nations resulted in reduced poverty and “progress on democracy and other fronts, such as labor standards and the environment.”⁸ The main worry expressed in such venues as the major international financial institutions and the World Trade Organization is that environmental concerns might serve as a pretext for limiting capital flows and for non-tariff barriers to trade.

Behind this attitude lies the belief that endless economic growth is both possible and desirable.

Critical observers have noted that sustainable development as interpreted by these enthusiasts for globalization places the emphasis more heavily on development than on sustainability.⁹ Development is understood as implementing a certain model of economic and social norms. Nations are considered “backward” or underdeveloped to the extent that they fail to emulate industrial democracies; the United States and Europe are the norm to which all ought to aspire. Sustainability became an issue only when resource scarcities and possible limits to growth began to appear. Yet, rather than seeing ecological limits as signs that the system might contain a self-destructive flaw, these barriers to unplanned, unrestrained industrialization were viewed as relatively minor management problems. Limited management would provide the framework for continued corporate-led economic expansion. Ultimately, the best managers came to be the corporations themselves. Efficiency was the solution to resource scarcities and environmental pressures, and who could better implement economic efficiency than corporations responding to the bottom line? Thus, the enthusiast take on sustainable development calls for more thoroughgoing adoption of global integrated markets, with associated values of consumerism and utility maximization. In short, business as usual, only more fully implemented. This, critics assert, is the thinking that has brought us to the current state of ecological decline. Yet, it is also the prevalent thinking shaping current policy, in both north and south. Unless resisted or changed, the policies that flow from the enthusiast policy project portend ecological disaster.

ADAPTATIONIST POLICY PROJECT

Where is the resistance to emerge? As noted, four distinct opposition views are identifiable in policy literature and among political activists. To begin, the adaptationist response (in three variations) is most congenial to the enthusiast view. The adaptationist policy project assumes that globalization is so far advanced that reversing the process would be unbearably costly. Moreover, properly managed by enlightened public authorities (not left to corporate managers) globalization has been and can continue to be beneficial. Adaptationists are primarily concerned to both reap the benefits of global liberalization of markets and to preserve and expand the gains of social democracy. Adaptationists accept that unregulated capitalism will, as its more radical critics claim, undercut the gains made regarding worker rights, wages, social protections, consumer safety, and environmental protection. Still, they say, we need not abandon the free market to preserve these gains. One policy options is “shared austerity,” collective belt-tightening by labor, capital and the public sector so the nation’s economy remains internationally competitive. Another, the global Keynesian response, would raise the level of management to match the scope of the market, meaning more reliance on multilateral organizations to regulate global capital, thus solving the problem of corporate mobility. A third response is for public policy to enhance those factors of production that are not highly mobile—a trained and dedicated workforce, an efficient public infrastructure, and a legal system that ensures the security of investment—so as to attract mobile capital with the promise of high profits and low-risk.¹⁰

Adaptationists accept that unregulated capitalism will, as its more radical critics claim, undercut the gains made regarding worker rights, wages, social protections, consumer safety, and environmental protection.

As noted, adaptationists generally see environmental regulations as part of the gains of social democracy, to be preserved against unchecked economic globalization. They do not reject the enthusiasts’ prescription (reliance on corporate social responsibility, technological progress, and market efficiency) but add to it. For example, the Progressive Policy Institute, associated with the “New Democrats” in the United States, posits the need for a “third way” between nationalist unilateralism and *laissez-faire*. The Progressive Policy Institute asserts (in agreement with enthusiasts) that free trade provides the national wealth, higher personal incomes, and changed values that underpin effective national environmental policies. Yet, they also note that “the market alone will not account for environmental costs, particularly degradation of the global commons, such as air and water, so a world of liberalized trade needs to also expand its system of environmental protection.”¹¹ They believe that an open world economy and environmental regulations aim at the same goal: a higher quality of life. The question is how to ensure a cleaner environment “as trade expands, as it inevitably will

do.”¹² They reject the notion that environmental conditions be written into trade agreements. Rather, economic institutions such as the World Trade Organization ought to work toward opening the world economy, while separate agreements should address the environmental challenges created by industrialization and economic growth.

Adaptationists who advocate attracting capital to the immobile factors of production note that the most highly valued workers are also the most mobile. “Symbolic analysts,”¹³ unlike production workers and direct service delivery workers, are barely tied to any particular locale. Their products—financial analysis, consulting work, advertising, brokering—are often produced and delivered via phones, fax, email, and the internet. Symbolic analysts are therefore free to choose where they live based on quality of life concerns, including environmental quality. Pollution, inadequate recreational opportunities, ugly surroundings, and the like will drive symbolic analysts to areas that offer a clean, diverse environment. With them go the investment capital, high-paying careers, demand for upscale entertainment and culture, and the tax base, as well as demand for many workers in the direct service sector. Recognizing this should induce policy makers to maintain environmental protections, rather than engage in the race to the bottom. Hence, this aspect of the adaptationist policy project would support policies aimed at sustainability, at least in certain areas.

Adaptationists are more likely than enthusiasts to acknowledge that a serious environmental problem exists.

Adaptationists are more likely than enthusiasts to acknowledge that a serious environmental problem exists. They understand why the public and environmentalists are wary of globalization. They call for a significant public policy role in meeting the challenge. Yet, they remain wedded to the priority of economic growth, and they tend toward a human-centered evaluation of environmental policy. Separating trade and investment policy from environmental policy seems to make protecting the environment an afterthought. Only after we have experienced market-led growth and observed the untoward consequences do negotiations begin to mitigate the problems. Those who advocate linking environmental issues with economic issues insist that both must be dealt with together, which third way adaptationists reject. Further, if environmental protection can be won for some areas by relying on symbolic analysts’ preferences, it remains that this is no guarantee against unsound environmental practices in other areas. Without some larger vision, the best that might be had is a kind of bioregional NIMBY approach that displaces environmental harms from symbolic analysts’ neighborhoods in northern California, the Pacific Northwest, the Alps, and other chic locales onto the neighborhoods of the poor and powerless.

Certainly, the adaptationist policy project represents an environmental gain over the enthusiast embrace of globalization. Adaptationists are more willing to use public policy to achieve socially desired ends. The political space this opens up could enable domestic interest groups and “global civil society”¹⁴ to win protections of some wilderness areas, convince governments to negotiate somewhat stronger environmental

treaties, and put pressure on regulatory agencies. Still, the adaptationist project rests on the claim that trade, environment, and the rights of labor are not in conflict, that a third way can be found that resolves apparent conflict in a wider harmony of interests. Sustainable economic growth is the common bond that brings this harmony of interests about and allows a degree of consensus on the proper role of public policy in balancing these concerns. If the proposition that endless economic growth is sustainable is wrong, which way will adaptationists go? Will they shed environmental commitments (especially obligations to protect the well-being and interests of non-human species) so that economic growth can continue for a while longer? Will they move toward calls for more fundamental institutional change that might meet the environmental challenge, but perhaps at the price of giving up market-led globalization? Although only experience can answer such questions, it is important to note that the adaptationist policy project does include explicit recognition of environmental values and some dissent from the current methods for implementing globalization.

CONSERVATIVE NATIONALIST POLICY PROJECT

Stronger opposition to globalization, although less obvious support for environmental values, emerges from the conservative nationalists. Conservative nationalists believe that a nation is a unique cultural and historical phenomenon, as such the proper object of human loyalty. They deplore globalization mainly because it undercuts the autonomy and distinctiveness of the nation, and it leads policy makers to adopt policies that are not in the national interest. The conservative nationalist position can tend toward xenophobia and even racism.¹⁵ More measured versions assert that one ought to value one's own nation, but that foreigners have the same right and duty. America for Americans, France for the French, and Argentina for the Argentines—no nation need be assumed to be superior or more worthy, but all are unique and valuable. To be sure, in practice, maintaining the line between seeing one's own nation as uniquely valuable and seeing it as also superior to others is difficult to maintain. Be that as it may, conservative nationalists have voiced as much opposition to such symbols of globalization as the North American Free Trade Agreement, the World Trade Organization, and the European Union as radical critics.

Patrick Buchanan's book *The Great Betrayal*¹⁶ offers one of the most focused statements of this view in the context of U.S. politics. Buchanan calls for returning trade policy to its historic protectionist stance, reversing the foolish liberalization begun during Woodrow Wilson's administration and stepped up dramatically after the Kennedy Round of the GATT negotiations. Buchanan condemns footloose corporations that have lost their ties to their countries of origin, and he favors policies that support Main Street businesses and industries. Main Street, he presumes, will maintain the post-war social contract with labor to maintain decent living standards in exchange for productivity and harmony. In Buchanan's view, falling real wages experienced by the American working and middle classes are the direct result of globalization, particularly free trade. Buchanan's view represents the perspective of

most conservative nationalists, but without the overt racism and anti-semitism found in some quarters. The focus is almost entirely on the cultural and economic effects of globalization. Conservative nationalists tend to be silent on environmental issues. Indeed, in most instances, conservative nationalists are found lining up with the globalizing advocates of laissez-faire in opposition to environmentalism. Moreover, they are especially worried about the loss of manufacturing jobs, jobs in the very industries that cause the most environmental concern.

Yet, Buchanan's conservative nationalism is not inimical to a new current in conservative circles, represented by the group Republicans for Environmental Protection. According to this view, conservatives ought to be environmentalists. Many of the values that motivate conservationists and even deep Greens are similar to values expressed in traditional conservative thought. Conservative nationalism champions respect for tradition, humility in the face of social complexity, attachment to place, and the importance of community over raw economic gain. Likewise, many environmentalists caution against human arrogance in the face of natural complexity, counsel respecting traditions (including those embodied in the myths and practices of indigenous peoples), and celebrate the value of place and community (albeit the biotic community rather than only the human).

John Bliese has argued convincingly that conservatives ought to be environmentalists, not unreflective allies of propertied interests. Drawing on traditional conservative thought, he asserts, "If we go back to the 'Founding Fathers' of American traditional conservatism, we will find a solid philosophical basis that would lead conservatives to be environmentalists."¹⁷ Although traditional conservative writers generally antedate the environmental crisis, Bliese shows that they never advocated profit maximization, did not identify with the business community, and disavowed materialism. Richard Weaver, Bliese notes, offered an extended conservative critique of consumer culture, contrasting its materialism to the pursuit of virtue and engagement of the spirit found in traditional conservatism. Weaver went so far as to pronounce man's unrelenting assault on nature to serve material interests a sin.¹⁸ The implication, concludes Bliese, is that "we are always to act as trustees, as faithful stewards of all we have inherited."¹⁹

Bliese's view is similar in some ways to J. Baird Callicott's elaboration of the land ethic.²⁰ The land ethic sees humans as part of a larger biotic community, and membership in a community entails obligations to maintaining that community. The land ethic's central moral precept is, that which enhances the stability, integrity, and beauty of the land (broadly understood) is good, and that which diminishes those values is wrong. Bliese and Callicott, no doubt, would have little to dispute on this. The remaining step is to link this view to the broader current of conservative nationalism, which would bring at least some conservative nationalists to support policies that enhance environmental integrity and sustainability. The step is a short one. If preserving the nation against the negative consequences of globalization is the conservative nationalist aim, then surely that must include preserving the nation's

natural heritage as well. Human communities are built on a certain kind of place. Their uniqueness is in part in how they have adapted to a given natural environment, whether mountain, desert, ocean, or plain. This natural heritage, without which the cultural heritage would be lost, should be as treasured as the historical legacy of a people, no more to be sacrificed to the “gods of the global economy” than any other part of the national heritage. Clear-cutting Oregon to provide Japan’s chopsticks and paper pulp is no less idolatrous, on this view, than flooding the U.S. market with foreign-made goods to serve distant corporate interests and a bankrupt economic ideology.

Contrary to the notion that conservative nationalists, like the global enthusiasts, are necessarily committed to the value of endless growth, Bliese cites traditionalist writer John Gray to say that growth “is the most vulgar ideal ever put before suffering mankind.” Bliese elaborates, calling the ideology of growth both unconservative and philosophically empty.²¹ Growth in itself does not buy happiness, improve well-being, serve other valued priorities, or even indicate a successful economic policy. No doubt, the world will run up against the limits to economic growth, but long before then, Bliese says, “we reach certain points beyond which ‘growth’ is simply not *desirable* by any conservative standards.”²²

To be sure, in practical politics, the deep-seated hostility of conservatives toward anything that smacks of environmentalism will be difficult to overcome. Yet, the emergence of the Republicans for Environmental Protection (REP), and the propagation of ideas such as Bliese’s, might herald just such change. Part of what REP wants is: “Protection for posterity of our national parks, forests, wildlife refuges, wild lands, and waters,” and “effective legal protection for threatened and endangered plants and animals in their native habitats.”²³ While not a call for radical institutional change, the REP position certainly moves toward recognition of the need for long-term sustainability. It implies in turn that this means policies that place environmental protection ahead of unbridled economic growth. In short, conservative nationalism resonates with the Burkean notion of an inter-generational compact, with attendant responsibilities to the future. Its rejection of materialism and emphasis on leading a virtuous life rather than scrambling for gratification provides intellectual resources for supporting environmentalist opposition to the unsustainable tendencies in the current globalization process.

LIBERAL NATIONALIST POLICY PROJECT

Liberal nationalism includes such groups as trade unions, consumer advocates, feminists, and environmentalists.²⁴ In the United States, Green Party candidate Ralph Nader represents this policy response to globalization. Regarding globalization broadly, their main concern has been defending labor standards and wages against competitive pressures of the world market, but maintaining national environmental standards against downward harmonization is also on their agenda.

Although they share many liberal values with adaptationists, they recommend foreign economic policies closer to the conservative nationalists. Their view is that the most congenial home for social democracy has been the nation-state. Unlike adaptationists, they are not ready to concede that the national government is relatively powerless against the forces of globalization, nor are they ready to agree that the outcomes of globalization will be beneficial for democracy, workers, the environment, or national prosperity.²⁵ Liberal nationalists oppose preemption of local regulations that intend to protect the environment, preserve jobs, and serve other socially valued ends. One prominent proposal asserts that it is time for a “new protectionism” that will “put governments at a local, national, and regional level back in control over their economies, and to relocalize and diversify them.”²⁶

The main tension within the liberal nationalist camp arises when environmental concerns appear to conflict with job security. Environmental protection can appear to put the needs of snail darters and spotted owls ahead of workers and their families. On the other side, liberal nationalist environmentalism tends to be associated with an older model of pollution abatement with primary attention to the urban environment and the workplace, rather than wilderness protection. These tensions can be exploited to divide environmental activists from their natural constituency in the working class, by picturing the environmental movement as elitist backpackers who care little for the working person.

Perhaps the more acute issue for liberal nationalists is that environmental problems fail to match up with national boundaries. While many problems are amenable to national policies, global challenges such as climate change and ozone depletion require multilateral responses. This means, in turn, engaging international politics, an arena lacking a government on which to focus political pressure. Recognizing this, some environmental advocates sympathetic to liberal nationalism have called for international treaties and more effective international organizations to cope with transnational environmental problems.²⁷ Unfortunately, such a strategy soon confronts global structures of power and wealth that do not respond much to these policy tools. The remedy for this is the relocalization of the economy, a general policy-led retreat from globalization that will dissolve the problems it creates. Otherwise, the answer is to bring about sweeping institutional change on a global level.

TRANSFORMATIONALIST POLICY PROJECT

Thus, liberal nationalism can easily shade into calls for fundamental institutional transformation. The transformationalists present such a policy project without reservation. Globalization in general, they say, is simply the broadening and deepening of the exploitive world system of capitalism. Global capitalism is unjust, exacerbates social problems, leads to wide gaps of income and wealth, violates human rights, oppresses women, sparks wars and rebellions, and heedlessly degrades the natural environment. Such a system cannot sustain itself, no matter how much effort its masters exert to keep it going. It is headed for an inevitable breakdown.²⁸

Some transformationalists are explicitly ecocentric. Their proposals for change arise directly from their belief that existing arrangements oppose important environmental values. Bioregionalists, defenders of traditional hunter-gatherer and peasant agriculture society, libertarian socialists, anarchists, ecofeminists, neo-Luddites, and others strive for a radically transformed society based on ecological values. Most accept at least some aspects of deep ecology.²⁹ They indict current practices for taking little heed of the right of other living things to a fair share of the planet, for leading to self-destructive outcomes as the ecology degrades under the pressure of the profit motive, and for privileging masculinist, individualist values. Reform of existing institutions, they argue, is too little, and far too late, to prevent global ecological disaster.

Yet, transformationalist responses to globalization need not express any great concern for the environment, although many do. Socialists still attached to the older doctrines of Marxism might well place rapid industrialization of poor countries ahead of environmental concern. Indeed, one third world critique of Western environmentalism asserts that the call for environmental protection is little more than old-fashioned imperialism in a new guise, aimed at hobbling poor nations' use of their natural resources to achieve higher standards of living. Ending exploitation, alleviating poverty, and redistributing wealth would take precedence over wilderness preservation, pollution abatement, and other environmental goals. More commonly, the environmental harms of capitalism are noted, but ecological concern is not the central issue. It is simply one among many social justice goals: "We will have to stress the contents of the new project [for social change] and use specific, activating concepts such as participatory democracy, human rights, environmentalism, pacifism as an ideal, feminism, economic democracy, sexual freedom, social justice, ethnic liberation, local power, workers' power, and so on."³⁰

To address global climate change will require replacing the global economy "by a localized economy with its vastly reduced energy and resource requirements."

The ecologically minded transformationalists propose fundamental institutional change. For instance, Arne Naess, deep ecology's most prominent exponent, writes, "Broad ecological sustainability may be compatible with a variety of social and political structures, provided they all point towards the Green pole." In practice, this will mean societies in which "there will be no political support of greed and unecological production."³¹ Corporate-led 'sustainable development' (the hope of the enthusiasts for globalization) celebrates greed and fosters unecological production and thus offers little hope.³² Those in the government and corporate offices have "rebuilt the world economy since 1945 along ecologically destructive lines." Thus we now need a "localistic ecological populism, as a transformative social project," one which will "rebuild this global corporate order along much different institutional lines: small-

scale, energy-sensible, locally managed, labor intensive, bioregionally structured communities of economic autonomy.”³³ To address global climate change will require replacing the global economy “by a localized economy with its vastly reduced energy and resource requirements.”³⁴ Alternatively, the worsening crisis of global capitalism might well call for global governance to bring about the transition to an ecological and socially equitable democratization.³⁵

These changes require transformation of our experience of the world: “Uprooted from our home in nature, uprooted from natural cycles, separated from other creatures, we feel lost and terrified... The first step is to break through our denial about this predicament. The second step is to feel, to come alive, to come out from under the deadening of the machines and the mechanistic worldview.”³⁶ The goal of the long-range deep ecology movement “has been to bring about a major paradigm shift—a shift in perception, values, and lifestyles—as a basis for redirecting the ecologically destructive path of modern industrial growth societies.”³⁷

Most transformationalists call for an infusion of democratic decision making, assuming that more democracy will counter the environmentally damaging militarism of the state, and the profit-seeking of the corporation. To be sure, some suspect that democracy subverts environmental values. These “ecoauthoritarians” and “ecoradicals” cannot trust democracy either to cope with the impending ecological crisis or to take society toward the green notion of the good life.³⁸ Yet, transformationalist greens also make powerful pleas for more democratic politics, arguing that an open democratic political process is far more likely than authoritarian structures to promote ecological values.³⁹

The most powerful resistance to globalization comes not from ecological concern but from ethnic and religious conflict.

The main challenge facing transformationalist ecology is feasibility. Whatever the precise institutional recommendations, one must question the prospects for bringing about sweeping and fundamental social and political change. The outlook for transforming global capitalism and the state system is not encouraging at present. The post-cold war period has seen most of the world’s governments adopt some form of the neoliberal development model. Variations on the model do exist, resistance to its most demanding requirements continues, and even the major international financial institutions have had to reign in somewhat as experience has shown the ill effects of shock therapy. Still, the main elements of the neoliberal (enthusiast) policy on globalization dominate. The ideology of growth and competitiveness, coupled with the mobility of capital, make the global market a global policy prison⁴⁰ with little immediate hope of escape. The most powerful resistance to globalization comes not from ecological concern but from ethnic and religious conflict.⁴¹ Virulent identity politics provides little hope for implementing environmental values.

CONCLUSION

We have reviewed five responses to globalization and briefly considered what each orientation says about the environment. The five policy projects tend to be concerned with the larger picture, not only with environmental problems. They offer broad, comprehensive approaches to dealing with the range of challenges globalization presents. Our question has been how much potential exists in these alternatives for implementing environmental values: diversity, human health and well-being, protection of other living things, and respect for the stability, integrity, and beauty of the ecosystem as a whole. It is unlikely that humans will achieve consensus on any one of these policy projects. Conservative nationalists are unlikely to become green socialists any time soon. Nonetheless, we can see that each approach contains some potential for implementing environmental values, which opens up the possibility of political coalitions across the ideological lines.

Although the enthusiast approach appears to offer little to ecological values, the potential that does exist ought not to be overlooked. After all, the enthusiastic embrace of globalization enjoys the support of powerful global actors. They are not likely to abandon this view, but they can be held to account for the environmental promises they have made. Sustainable development is a contestable term; it need not reduce to business as usual, pursuit of profit and corporate efficiency. Indeed, the struggle over the meaning of sustainable development is carried on daily in such arenas as the major international financial institutions, the United Nations, and national legislation. Non-governmental organization activity has led to international organization engagement with "civil society," including environmental activists. The activities of environmental groups to sway the globalization process toward some degree of environmental accountability can and should continue. Still, all this said, it remains that the enthusiast position is the target for reform and critique, if environmental values are to be given an important place in policy debates over globalization and sustainability.

Adaptationists, who also enjoy some access to policy making, can be allies in this effort of critique and urging reform. Adaptationists are more likely to acknowledge the need for authoritative intervention in markets than enthusiasts. They are also concerned to preserve the social gains made through decades of political struggle, including gains in environmental protection. At the same time, their commitment to an open global economy both gives them credibility in policy circles and creates doubts about their commitment to environmental values. They too should be held to account. Adaptation ought not to imply abandoning environmental values when the economic going gets rough, say during a global recession. Instead, adaptationists should be held to a high standard of what sustainable development means. Further, they need to be reminded that quality of life does not mean only bigger paychecks and more careers for symbolic analysts. Quality of life means a healthy, beautiful natural environment. Perhaps some adaptationists can even be led to see this as an intrinsic value rather than merely a means to attract mobile capital and cutting-edge consultants.

Liberal nationalists already emphasize the environmental dimension of resistance to unchecked globalization. Activists in this camp have fought for decades to develop national environmental regulatory frameworks. They are now concerned to preserve these gains against the downward harmonization of global trade and investment agreements. Their main task may well be to resolve the tension between labor and environment within their own ranks. Beyond that, environmental liberal nationalists should remain open to forging coalitions with the environmentally minded in other camps. In particular, liberal nationalists ought to encourage the greening of conservative nationalist thought. Without abandoning their commitments to other liberal and conservative values, nationalists should work together on matters of environmental protection. Both forms of nationalism enjoy the strategic advantage of working within the domestic national context. Despite globalizing tendencies, the state remains a significant arena for political struggle.

Whether the entire system must be (rather than should be) transformed remains an open question. Transformationalists advocate alternatives that most directly and thoroughly implement ecological values, but until overwhelming evidence shows that global capitalism is in fact doomed, it is unlikely that such transformation will occur. Thus, just as radicals have encouraged trade unions and social movements that are best called liberal reformist, ecological transformationalists will make the greatest impact by encouraging and supporting green social movements, interest groups, NGO activity and the like.

Environmentalists are found in every policy camp. They need not see each other as political enemies. Nor is it necessary to work out all their disagreements over philosophy, morality, and social causality. Focusing on values—clean air, clean water, wilderness—rather than justifications for those values offers some possibility for coalition building and avoiding divisiveness. This is not to underestimate the immense practical challenges for building such coalitions, but recognizing the potential for unity on environmental values is essential.

Notes

¹ Vogel, Steven, *Against Nature: The Concept of Nature in Critical Theory* (Albany: State University of New York Press, 1996) 168.

² Tuxill, John, *Losing Strands in the Web of Life: Vertebrate Declines and the Conservation of Biological Diversity*, Worldwatch Paper 141 (Washington, D.C.: Worldwatch Institute, 1998), 9.

³ "Forces of Globalization Must Be Embraced," *IMF Survey*, 26 May 1997, 1.

⁴ World Commission on Environment and Development, *Our Common Future* (Oxford: Oxford University Press, 1987), 43, quoted in John I. Clarke, "The Interrelationship of Population and Environment," in *Just Environments: Intergenerational, International, and Interspecies Issues*, edited by David E. Cooper and Joy A. Palmer (London: Routledge, 1995), 42.

⁵ World Development Report 1992 (New York: Oxford University Press, 1992), 34, quoted in Wolfgang Sachs, "Global Ecology and the 'Shadow of Development,'" in *Deep Ecology for the 21st Century*, edited by George Sessions (Boston and London: Shambhala Press, 1995), 434.

⁶ "Development at Risk from Environmental Degradation," The World Bank Group, Press Release No. 2002/112/S, Oct 25, 2001, available from <http://lnweb18.worldbank.org/news/pressrelease/nsf/>.

⁷ Ghandi, Ved P., *The IMF and the Environment*, in IMF Publications [database online] (Washington, D.C.: IMF Publication Services, 1998); available from <http://www.imf.org/external/pubs/ft/exrp/environ/index.htm>.

⁸ *IMF Survey* Supplement September 2000, 4.

⁹ Sachs 1995.

¹⁰ Albo, Gregory, "The World Economy, Market Imperatives, and Alternatives," *Monthly Review* 48, no. 7 (1996): 6-22.

¹¹ Bates, Jenny and Debra S. Knopman, "After Seattle," *The Environmental Forum*, January/February 2000, 30.

¹² *Ibid.*, 35.

¹³ Reich, Robert, *The Work of Nations: Preparing Ourselves for 21st-Century Capitalism* (New York: Alfred A. Knopf, 1995).

¹⁴ Wapner, Paul, *Environmental Activism and World Civic Politics* (New York: State University of New York, 1996).

¹⁵ Rupert, Mark, *Ideologies of Globalization: Contending Visions of a New World Order* (London: Routledge, 2000) 101-110.

¹⁶ Buchanan, Patrick J., *The Great Betrayal: How American Sovereignty and Social Justice Are Being Sacrificed to the Gods of the Global Economy* (Boston: Little, Brown and Company, 1998).

¹⁷ Bliese, John R. E., "Richard M. Weaver, Russell Kirk, and the Environment," *Modern Age*, Winter 1996, 148.

¹⁸ *Ibid.*, 150.

¹⁹ *Ibid.*, 151.

²⁰ Callicott, J. Baird., *Beyond the Land Ethic: More Essays in Environmental Philosophy* (Albany: SUNY Press, 1999). Callicott, J. Baird, *In Defense of the Land Ethic: Essays in Environmental Philosophy* (Albany: State University of New York Press, 1989).

²¹ Bliese, John R. E., "Conservatism and the Ideology of 'Growth,'" *Modern Age* Spring 1999, 118-119.

²² *Ibid.*, 121.

²³ "Philosophy," *REP America* (n.d.) [cited 5 May 2002]: available at <http://www.repamerica.org>.

²⁴ Rupert, 17.

²⁵ Barber, Benjamin, *Jihad vs. McWorld: How Globalism and Tribalism are Reshaping the World* (New York: Ballantine Books, 1996).

²⁶ Hines, Colin and Tim Lang, "The New Protectionism," in *Corporations Are Gonna Get Your Momma*, edited by Kevin Danaher (Monroe, Maine: Common Courage Press, 1996). Hines, Colin and Tim Lang, "In Favor of a New Protectionism," in *The Case Against the Global Economy*, edited by Jerry Mander and Edward Goldsmith (San Francisco: Sierra Club Books, 1996).

²⁷ Greider, William, *One World, Ready or Not: The Manic Logic of Global Capitalism* (London: Allen Lane, 1997). French, Hilary, F., *Partnership for the Planet: An Environmental Agenda for the United Nations* Worldwatch Paper 126 (Washington, D.C.: Worldwatch Institute, 1995).

²⁸ Goldsmith, Edward, "The Last Word: Family, Community, Democracy," in *The Case Against the Global Economy*, edited by Jerry Mander and Edward Goldsmith (San Francisco: Sierra Club Books, 1996).

²⁹ Sessions, George, "Preface," in *Deep Ecology for the 21st Century*, edited by George Sessions (Boston and London: Shambhala Publications, 1995).

³⁰ Burbach, Roger, Orlando Nunez, and Boris Kagarlitsky, *Globalization and Its Discontents* (London and Chicago: Pluto Press, 1997).

³¹ Naess, Arne, "Deep Ecology for the Twenty-Second Century," in *Deep Ecology for the 21st Century*, edited by George Sessions (Boston and London: Shambhala, 1995), 466.

³² Sachs 1995.

³³ Luke, Timothy W., *Ecocritique: Contesting the Politics of Nature, Economy, and Culture* (Minneapolis: University of Minnesota Press, 1997), 207-208.

³⁴ Goldsmith, 510.

³⁵ Altvater, Elmar, "Restructuring the Space of Democracy: The Effects of Capitalist Globalization on the Ecological Crisis and on the Form and Substance of Democracy," in *Global Ethics & Environment*, edited by Nicholas Low (London: Routledge, 1999) 304.

³⁶ Glendinning, Chellis, "Recovery from Western Civilization," in *Deep Ecology for the 21st Century*, edited by George Sessions (Boston and London: Shambhala, 1995) 39.

³⁷ Sessions, ix.

³⁸ Mills, Mike, "Green Democracy: The Search for an Ethical Solution" in *Democracy and Green Political*

Thought, edited by B. Doherty and M. de Geus (London: Routledge, 1996). Reprinted in *Environmental Ethics: Concepts, Policy, Theory*, edited by Joseph DesJardins (London and Toronto: Mayfield, 1999).

³⁹ Dryzek, John S., *The Politics of the Earth: Environmental Discourses* (Oxford and New York: Oxford University Press, 1997).

⁴⁰ Lindblom, Charles E., "The Market As Prison," *Journal of Politics* 44 (1982): 324-336.

⁴¹ Barber 1996.

Cooperation between United Nations and Private Sector Addressing Issues of Global Concern

by Josef Klee and Uda Klee

The United Nations is not only comprised of member states which, through formal legislative processes, determine the nature and scope of the work programs and activities carried out by the organization. Rather, in accordance with its Charter, the United Nations, “may make suitable arrangements for consultation with non-governmental organizations which are concerned with matters within its competence. Such arrangements may be made with international organizations and, where appropriate, with national organizations after consultation with the Member of the United Nations concerned.”¹

The United Nations, from the outset of its work in 1945, has benefited from the assistance of non-state actors from civil society and non-governmental organizations, (NGOs) in carrying out its programs and activities. Today, about 2100 non-governmental organizations have consultative status with the United Nations Economic and Social Council (ECOSOC). Traditionally, a great number of non-governmental organizations are registered and affiliated with the various specialized programmes and agencies of the United Nations’ System, such as the United Nations Children’s Fund (UNICEF), the World Food Programme (WFP), the United Nations Environment Programme (UNEP) and the World Health Organization (WHO). Increasingly, these non-governmental organizations have become esteemed partners of the respective United Nations bodies and are consulted on policy and program matters and seen as valuable links to civil society.

Moreover, many of these organizations have entered into concrete arrangements of cooperation with the United Nations to lend their expertise and technical assistance to many areas of United Nations’ endeavors and activities. Such cooperative initiatives exist primarily in the field of human rights and humanitarian assistance, social and economic development, poverty eradication and the protection of health and the environment.

Over the past decades, there has been a significant increase in the scale and impact of such cooperation and interaction. This increase in the interaction of the United Nations with non-state actors also reflects the emergence of new types of cooperation and partnerships, which include, multi-stakeholder initiatives such as the Global

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Environment Facility, the Global Alliance for Vaccines and Immunization, the Commission on Sustainable Development and the Information and Communication Technology Task Force.

This commitment to developing partnerships with civil society in general, and non-governmental organizations in particular, including the business community as part of the private sector, was renewed through the Millennium Declaration of the United Nations in the year 2000.²

In this context, the Millennium Declaration recognizes that the private sector...can act as an important supporting partner in pursuit of these United Nations goals and programs. Through trade and investment, the application of environmentally sound technologies, the conservation of water and energy resources, as well as philanthropic engagement, the private sector can play a crucial role in promoting socially and environmentally responsible development and poverty eradication.

In addition to reiterating the purpose of the United Nations to achieve peace and security worldwide, the Millennium Declaration also stresses the commitment of the United Nations to fulfill the pledge of its Charter to, “promote higher standards of living, full employment and conditions of economic and social progress and development”. The Millennium Declaration recognizes that despite advances on many fronts, gross disparities in wealth and well-being continue, and that reducing poverty and redressing inequalities worldwide remain fundamental goals of the United Nations.

In this context, the Millennium Declaration recognizes that the private sector, through the industrial and commercial activities of international corporations, can act as an important supporting partner in pursuit of these United Nations goals and programs. Through trade and investment, the application of environmentally sound technologies, the conservation of water and energy resources, as well as philanthropic engagement, the private sector can play a crucial role in promoting socially and environmentally responsible development and poverty eradication. In addition to generating employment and wealth, the private sector can make a valuable contribution to human resource development through activities in the workplace such as, training, education and health programs.

This above message was underscored by the United Nations’ Secretary-General’s statement that, “The United Nations once dealt only with governments. By now we know that peace and prosperity cannot be achieved without partnerships involving governments, international organizations, the business community and civil society. In today’s world, we depend on each other.”

In addition to the Millennium Declaration, the mandate of the Secretary-General to forge ahead with initiatives for collaboration and partnerships between the United Nations and the private sector was reaffirmed by the debate and the ensuing resolution of the United Nations General Assembly in November 2001. In conjunction with this debate, the United Nations Global Compact Office prepared a report exploring the range and implications of cooperation between the United Nations and non-governmental organizations, including the international business community.³

GUIDELINES FOR COOPERATION BETWEEN UNITED NATIONS AND PRIVATE SECTOR

Over the past 50 years, the United Nations System has developed guidelines, selection criteria and operational procedures for dealing with the private sector, primarily with respect to procurement contracts, accepting philanthropic donations, implementing volunteer arrangements and facilitating the participation of non-state actors, including the business community. Different United Nations entities have developed a variety of institutional structures and policy rules to handle their cooperation with the business sector, tailored to the specific nature and demands of their work programs.

In 1999, the United Nations Administrative Committee on Coordination explored suitable ways of interaction between the United Nations System and the private sector in the context of the challenges of globalization. It was agreed that cooperation with the private sector should focus on the dimension of economic and social development, and that other partners should also be actively engaged, including trade unions and other non-governmental organizations. Furthermore, it was agreed that new alliances and partnerships with key stakeholders, including the private sector, should be based on United Nations values and should ensure the preservation, independence and uniqueness of the United Nations System.

A special working group was charged with drafting appropriate guidelines which would strike the right balance between safeguarding the integrity and independence of the United Nations and, at the same time, preserving the necessary degree of flexibility to encourage successful and innovative approaches towards advancing United Nations goals.

In this context, it was also clarified under what circumstances the use of the name and the emblem of the United Nations by the private sector would be allowed. The use of the name and the emblem of the United Nations is strictly regulated. It involves important policy issues for the organization and requires written approval from the United Nations Legal Office. Permission for the use of a United Nations logo is granted only if the principal purpose of such use is to show support for the purposes, policies and activities of the United Nations, and to advance a specific United Nations' goal. It cannot be used to endorse companies, their products, services or reports on company performance.

Overall, it was emphasized that a basic value framework for choosing a particular partner from the private sector must be observed which would demonstrate that the United Nations is selective when engaging the business community. To this end, it was resolved that the following rules apply: (a) business partners should demonstrate responsible citizenship by supporting United Nations causes and core values as reflected in the Charter and other relevant conventions and treaties; (b) within their sphere of influence, private enterprises should have demonstrated a commitment to meeting or exceeding the principles of the Global Compact by translating them into corporate practice; and (c) business entities that are complicit in human rights abuses, tolerate forced or compulsory labor or the use of child labor, are involved in the sale or manufacture of anti-personnel mines or their components, or otherwise do not meet relevant obligations or responsibilities stipulated by the United Nations, are not eligible for partnership.

A basic value framework for choosing a particular partner from the private sector must be observed which would demonstrate that the United Nations is selective when engaging the business community.

In the year 2000, the final guidelines were accepted by the Secretary-General and distributed to all heads of United Nations offices, departments, funds, programs and specialized agencies. They are designed to provide guidance to United Nations staff without limiting the more specific approaches by agencies in accordance with their particular mandates and areas of competence.

As a result, the United Nations now has established guidelines for cooperation between the United Nations and the business community. These guidelines are intended to serve as a common framework for the entities of the United Nations Secretariat to devise, implement and evaluate cooperative arrangements with business. Other specialized agencies of the United Nations System are encouraged to establish more specific guidelines of cooperation in accordance with their particular mandates and missions.

Irrespective of the specific nature of a particular arrangement, such partnership with the private sector should be guided by the following general principles: (a) the cooperation must advance United Nations goals as set forth in the United Nations Charter; (b) the arrangement must be based on a clear delineation of roles, responsibilities and accountabilities; (c) the arrangement must maintain and should not diminish the United Nations integrity, independence and impartiality; (d) the cooperation should not imply endorsement or preference of a particular business entity or its products or services; and (e) cooperation with the business community sector must be transparent, and information of the nature and scope of cooperative arrangements should be available within the organization and to the public at large.

THE GLOBAL COMPACT AS PARTNERSHIP BETWEEN UNITED NATIONS AND PRIVATE SECTOR ADDRESSING IMPACT OF GLOBALIZATION

The United Nations Secretary-General, Kofi Annan, at the World Economic Forum in Davos in 1999, first appealed to the international business sector to participate in efforts which seek to reconcile the impact of globalization with the interests and concerns of a broad spectrum of stakeholders, including companies and investors, employees and workers, consumers, advocacy groups and communities.

This initiative of the Secretary-General resulted in his proposal for establishing a "Global Compact" among these stakeholders with the goal of seeking solutions to the inherent problems of globalization on a voluntary, cooperative and constructive basis. The proposal was welcomed and supported as an innovative and timely approach by a great number of the groups concerned, and prepared to work together within a common framework to build a more inclusive global market by promoting broadly shared values and practices that reflect global social needs. Such positive response subsequently led to the official launching of the Global Compact in the year 2000 at the United Nations in New York.

The appeal by the Secretary-General was generated by his concern that opposition to globalization in many parts of the world could potentially impede the effectiveness of free markets and international investments, and ultimately threaten social, economic and political stability worldwide. The objective of the Secretary-General's partnership initiative is to address the possible adverse effects from globalization and to focus on correcting such deficiencies through voluntary efforts and constructive cooperation. To this end, the Global Compact was created as an instrument to help non-state organizations to redefine their strategies and courses of action so that all people can share the benefits of globalization, leading to more inclusive and stable societies.

Moreover, the Global Compact is based on the conviction that weaving universal human values into the fabric of existing economic rules, global markets and corporate practices will help to advance broader societal goals and address some of the downsides of globalization while supporting open markets. To this end, the Global Compact seeks to provide a global framework to promote sustainable growth through enhancing good corporate citizenship and social responsibility.

Therefore, the creation of the Global Compact has to be seen from the perspective of the fact that globalization has become a driving and irreversible force for global economic and social development with the business sector as one of the key actors in the world economy. The premise of the Global Compact thus, is to view business as an agent of positive change and as part of the solution to eliminate, or, at least, to ameliorate detrimental effects from globalization.

Emphasizing the importance of making the Global Compact work, United Nations Secretary-General Kofi Annan, in his address to international business and political leaders attending the Global Economic Forum in New York in January 2002, reiterated: "The reality is that power and wealth in this world are very, very unequally shared, and that far too many people are condemned to lives of extreme poverty and

degradation. The perception, among many, is that this is the fault of globalization; and that globalization is driven by a global elite composed of – or at least represented by—the people who attend this gathering.”⁴

“I believe that perception is wrong and that globalization, so far from being the cause of poverty and other social ills, offers the best hope of overcoming them...Left alone in their poverty, those countries are all too likely to collapse or relapse into conflict and anarchy, a menace to their neighbors and potentially a threat to global security.”

At the same event, the Secretary-General appealed to the audience to be sensitive to the opposition their influence had engendered, saying that the opposition claims that “you are interested *only* in economics, or in profit, and that you do not care about the social effects of your economic activities. And that criticism resonates around the world.” He added, “I believe that perception is wrong and that globalization, so far from being the cause of poverty and other social ills, offers the best hope of overcoming them. But it is up to you to prove it wrong, with actions that translate into concrete results for the downtrodden, exploited and excluded.”

He urged the business leaders to improve their efforts on behalf of the least developed economies: “Left alone in their poverty, those countries are all too likely to collapse or relapse into conflict and anarchy, a menace to their neighbors and potentially—as the events of 11 September so brutally reminded us—a threat to global security. Yet taken together, their peoples represent a very large potential market—and many of their disadvantages could be offset if international business and donor governments adopted a common strategy aimed at making them more attractive to investment and ensuring that it reaches them.”

Expressing his opinion about the need for the private sector to become involved, the United Nations Secretary-General remarked: “Business cannot afford to be seen as the problem. It must, working with government and with all the other actors in society, be part of the solution.”

THE GLOBAL COMPACT IN ACTION

The overall objective of the Global Compact is to engage the private sector to work directly with the United Nations, and in partnership with international labor and other non-governmental organizations, to identify, disseminate and promote good corporate practices based on universal principles. In the words of the United Nations Secretary-General: “Let us choose to unite the power of markets with the authority of universal ideals. Let us choose to reconcile the creative forces of private entrepreneurship with the needs of the disadvantaged and the requirements of future generations.”

Based on this premise, the Global Compact was initiated as a call to business

leaders around the globe to promote and apply within their own spheres of influence, a set of nine universally agreed principles in the areas of human rights, labor standards and environmental protection. These principles were selected on the basis of, firstly, having been developed through international intergovernmental agreements and, secondly, having operational and strategic relevance to the private sector.

Regarding its operational structure, the Global Compact is designed as a multi-stakeholder learning, dialogue and action network, driven largely by the activities of its business and civil society participants under the guidance of a small Global Compact Office located within the United Nations Secretariat. The network is composed of United Nations entities; the private sector (both companies and business associations); trade unions; non-governmental organizations active in the areas of environment, labor, human rights and development; and academic institutions. The United Nations bodies involved in the core operational aspects of the initiative are the International Labour Organization (ILO), the United Nations Environment Programme (UNEP), the Office of the United Nations High Commissioner for Human Rights (OHCHR) and the United Nations Development Programme (UNDP). The Global Compact Office draws on the expertise of these specialized agencies in matters of substance concerning its own programming as well as the activities of the participating stakeholders.

The Global Compact is designed as a multi-stakeholder learning, dialogue and action network.

It must be stressed that the Global Compact is based on voluntary participation and does not constitute a regulatory instrument or a legally binding and enforceable code of conduct or a forum for policing corporate policies and practices. Monitoring and verification of corporate practices does not fall within the mandate or the institutional capability of the United Nations. Thus, the Global Compact is not intended as, and does not have the capacity to be, an instrument of authority to enforce compliance with corporate standards of conduct. Rather, it should be viewed as a values platform and a network for dialogue and information exchange that provides a global framework through which its participants are able to publicly support a specific set of universally agreed values and the work of the United Nations.

At the same time, this framework serves to enable participating companies to learn lessons from each other on implementing environmental, labour and human rights principles in their own business activities, hereby initiating practical action to address the challenges of globalization. This effort by participating companies should be valued as their contribution to safeguarding free and equitable global markets and promoting sustainable economic growth worldwide for the benefit of all mankind. As such, the Global Compact must be seen as a voluntary initiative that seeks to provide a global framework to create good corporate citizenship and promote sustainable growth through responsible and committed corporate leadership.⁵

NINE PRINCIPLES AS BASIS OF THE GLOBAL COMPACT

The Secretary-General has proposed that international companies, as participants in the Global Compact, adopt and apply a set of core values and principles for the practice of their global operations in the areas of human rights, labor standards and environmental concerns.

This effort by participating companies should be valued as their contribution to safeguarding free and equitable global markets and promoting sustainable economic growth worldwide for the benefit of all mankind.

Combined, these core values are comprised of nine principles drawn from the Universal Declaration of Human Rights, the Declaration on Fundamental Principles and Rights at Work established by the International Labour Organization (ILO), and the Rio Declaration on Environment and Development

These nine principles to be observed by the companies participating in the Global Compact, are:

- In the area of Human Rights -

1. Businesses should support and respect the protection of internationally proclaimed human rights; and
2. ensure that they are not complicit in human rights abuses.

- Regarding Labour Standards -

3. Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining; as well as
4. the elimination of all forms of forced and compulsory labor;
5. the effective abolition of child labor; and
6. eliminate discrimination in respect of employment and occupation.

- Concerning the Protection of the Environment -

7. Businesses should support a precautionary approach to environmental challenges;
8. undertake initiatives to promote greater environmental responsibility; and
9. encourage the development and diffusion of environmentally friendly technologies.

In this context, it is interesting to note that the Rio Declaration on Environment and Development, adopted by the United Nations Conference on Environment and Development in 1992, expresses the same objective as envisioned by the United Nations Secretary-General when he proposed the establishment of the Global Compact in 1999. The Rio Declaration on Environment and Development expressively seeks to

pursue “the goal of establishing a new and equitable global partnership through the creation of new levels of cooperation among states, key sectors of societies and people, working towards international agreements which respect the interests of all and protect the integrity of the global environmental and developmental system, recognizing the integral and interdependent nature of the earth, our home.” In its provisions, the Rio Declaration stipulates that, “Human beings are at the center of concerns for sustainable development” and that “In order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it.” Most importantly, however, the Global Compact draws on the same basic idea expressed in another provision of the Rio Declaration: “Environmental issues are best handled with participation of all concerned citizens, at the relevant level.”⁶

“Human beings are at the center of concerns for sustainable development.”

The Global Compact challenges companies to act on these nine principles throughout the activities in their own corporate domains; particularly to develop policies and business practices and to target initiatives consistent with these core principles.

Companies wishing to engage in the Global Compact, have to declare expressively in writing to the United Nations Secretary-General that they support the tenets of the Global Compact and that they are committed to take the following actions:

- (a) Issue a clear statement of support for the Global Compact and its nine principles, and to publicly advocate the Global Compact. This action may include:
 - Informing employees, shareholders, customers and suppliers.
 - Integrating the Global Compact and its nine principles into the corporate development and training program.
 - Incorporating the principles of the Global Compact in the company’s mission statement.
 - Including the Global Compact commitment in the company’s Annual Report and other public documents.
 - Issuing press-releases to make the commitment public.
- (b) Provide, once a year, a concrete example of progress made or lessons learned from implementing the principles within its corporate domain.

STRATEGY FOR IMPLEMENTATION OF GLOBAL COMPACT: LEARNING FORUM - POLICY DIALOGUE - INITIATIVES

The Global Compact is designed to provide a framework, a platform and a network for constructive interchange between all participating stakeholders for the purpose of

finding solutions to eliminate, or at least alleviate, the detrimental effects of globalization towards achieving fair and equitable social and economic development for the benefit of all the peoples worldwide. By way of an initial process of consultation with various partners, the Global Compact Office at the United Nations has developed a three-pronged implementation strategy to make the Global Compact work, namely through emphasis on learning, dialogue and action.

To this end, each year, participating companies are required to submit and share an example of a concrete business action undertaken to apply at least one of the nine principles of the Global Compact within its corporate domain. These examples pass through several rounds of analysis and questions by academics and experts participating in the Global Compact before being posted publicly on the Internet for more extensive public review and debate. Subsequently, these examples will form the basis of a learning bank, identifying and describing factors for success and causes for failure in implementing the principles of the Global Compact, and thereby disseminating lessons learned in the effort to translate general principles into concrete management practices.

This process endows the Global Compact with a learning forum and aspires to help companies learn directly from one another, and also from the commentary provided by labor groups, civil society organizations, as well as the participating academic and public policy communities. Leading academic institutions from both, industrialized nations and developing countries, are supporting the Global Compact Office in its effort to facilitate this learning forum. The Office plans to conduct comprehensive case studies with the assistance of these institutions, based on an expansion of the issues raised in selected examples submitted by the participating companies. In the future, the Global Compact Office might seek to work with the support of an academic infrastructure designed to be responsive to the regional differences of the operations of participating companies.

Another component of the format for the Global Compact consists of providing a platform for dialogue. Each year, the Global Compact Office organizes a series of multi-stakeholder policy dialogues to address the key challenges of globalization. Such a dialogue provides a platform for substantive exchange of views focusing on a specific issue. As a result, it encourages the formations of action networks between the participating groups in pursuit of innovative solutions to complex problems.

Through its web-site, the Global Compact Office is able to make information available on the internet on activities carried out by the participating companies related to their efforts to advance the implementation of the nine principles of the Global Compact. This information includes in particular corporate activities initiated and carried out to address the development needs of poorer countries, or partnership projects undertaken as outreach to their local communities or society in general. Many of these partnership projects are conducted in cooperation with other national or international organizations, including the United Nations, civil society associations or aid agencies. The objective of these activities is to harness the expertise and resources of the private sector to help achieve broadly accepted United Nations goals. Many companies participating in the Global Compact are already undertaking partnership

projects in diverse areas, for example: investment, micro-credit, labor-accords, the reduction of carbon dioxide emissions, HIV/AIDS, and programs to expand basic education in local communities, etc.

STATUS OF IMPLEMENTATION

The Global Compact evolved as a personal initiative of the United Nations Secretary-General and was launched under his auspices as an official United Nations program in the year 2000.

A small support structure has been established in the form of the Global Compact Office to sustain the initiative and to ensure quality control regarding its implementation. The staff of the Office reports directly to the United Nations Secretary-General.

The Global Compact evolved as a personal initiative of the United Nations Secretary-General and was launched under his auspices as an official United Nations program in the year 2000.

The Global Compact Office receives its financial resources from voluntary contributions by member states and civil society foundations. Since there is a particular need to safeguard the neutrality and integrity of the United Nations, the Global Compact Office cannot accept contributions from the private sector, in particular not from participating companies.

As a major step towards strengthening the legitimacy of the Global Compact and the work undertaken within its framework, in January 2002, the Secretary-General has installed an Advisory Council comprised of 17 eminent persons with diverse backgrounds of expertise, including senior business executives, international labor leaders, heads of civil society organizations and academic experts, as well as the permanent representatives of five United Nations member states. The establishment of the Advisory Council marked the creation of the first United Nations advisory body composed of both public and private sector leaders who together will assist the Secretary-General in his effort to promote cooperative solutions to the dilemmas and challenges of globalization.

The Advisory Council will put forward recommendations to the Secretary-General regarding the operations of the Global Compact Office and its work program. In particular, the Advisory Council is expected to suggest measures of policy and procedure which might enhance the quality of work and the standards of participation in the Global Compact. To this end, the Advisory Council has been designed as an interdisciplinary body encompassing a diverse range of professional sectors.

The members of the Advisory Council are appointed by the Secretary-General and act as experts in their individual, rather than institutional capacity, while its

members, representing the United Nations member states serve as observers. They serve in rotating terms of two and three years and will convene for formal meetings twice per year.

The Global Compact Office is currently engaged in a comprehensive outreach program to spread the word about the mission of the Global Compact and to extend the scope of its membership and activities worldwide. Currently, more than 400 companies from all regions of the world have joined the Global Compact which is evolving into the first global forum designed to cooperatively address critical issues emanating from globalization. The companies participating in the Global Compact represent diverse industry sectors and geographic regions, but are united in their resolve to join efforts to contain the detrimental effects of globalization, and aspire to manage global growth in a responsible manner.

The aims and the concept of the Global Compact have been widely accepted in industrialized nations as well as the developing world. It has been recognized that the Global Compact can serve as an ideal instrument and component in achieving overall social and political stability and thus create sound conditions for attracting more trade and investment, hereby ultimately generating more sustainable and equitable development and better living conditions for all people in the countries concerned.

International business organizations and trade associations have played an active role in promoting the Global Compact, including the International Chamber of Commerce (ICC) and the International Organization of Employers (IOE). These business associations have organized meetings and provided information on the Global Compact to its affiliated members.

Activities and events to promote the tenets of the Global Compact have been taken up in more than thirty countries; and the most intense participation can be observed in developing countries, most prominently in India and Brazil. This demonstrates that not only multinational corporations from the industrialized North but also corporate leaders from the South have realized the potential of the Global Compact to serve as an effective tool for their businesses to play an important role in shaping the economic and social development of their own countries.⁷

A great number of participating corporations, non-governmental organizations and United Nations member states in all geographical regions, have launched numerous initiatives such as conferences, seminars, joint projects etc. in support of the Global Compact. These events and activities are listed and described on the web-site of the United Nations Global Compact Office.⁸

There have been expressions of opposition to the establishment of the Global Compact as an initiative put forward by the United Nations. Some critics believe that the Global Compact, as it is currently being designed and implemented, carries the danger of weakening the integrity and the mission of the United Nations. These critics maintain that subscribing to the Global Compact allows the participating companies to embellish their reputation in the public through their association with the United Nations, without necessarily intending to commit themselves to truly follow the principles of corporate conduct embodied in the Compact. They accuse

the participating companies of using the Global Compact, with the United Nations seal of approval, for public relations purposes only to improve their public image without ever changing their objectionable corporate behavior.

In addition, these critics feel that the Global Compact is ineffectual and meaningless because it is voluntary and non-binding and, therefore, lacks monitoring and enforcement authority to control compliance by the participating companies.

Both of these objections, however, seem to be groundless and disingenuous. The same critics who raise them are, at the same time, diligently engaged as corporate watch groups closely monitoring the operations and the conduct of companies which have exposed themselves voluntarily to public scrutiny and criticism by joining the Global Compact. The critics are free to gather information and expose exploitative behavior by the companies and they have the opportunity, in constructive cooperation with the United Nations, to raise their voices towards bringing about a correction of such violations.

The process of implementing the Global Compact is continuously evolving and the Global Compact Office at the United Nations has taken a flexible and open-minded approach regarding the methods and procedures for executing its mission. The success of the Global Compact will ultimately be measured by how effectively it stimulates actions and brings about change. At the same time, the success of the Global Compact may signal that the United Nations has become a more salient player in forging new instruments through which to manage the consequences of globalization.

Notes

¹ Charter of the United Nations, June 1945

² The United Nations Millennium Declaration, September 2000

³ Report of the United Nations Secretary-General to the 56th United Nations General Assembly in the year 2001, concerning: "Cooperation between the United Nations and all Relevant Partners, in particular the Private Sector"

⁴ Address of United Nations Secretary-General, Kofi Annan, to the World Economic Forum in New York, January 2002

⁵ Former United Nations Assistant Secretary-General John Gerard Ruggie, Professor, Harvard University

⁶ Rio Declaration on Environment and Development, 1992

⁷ George Kell, Executive Head, United Nations Global Compact Office

⁸ United Nations Global Compact Web-site: www.unglobalcompact.org

The U.S. Response to the Kyoto Protocol – A Realistic Alternative?

By Lawrence Kogan

INTRODUCTION

On or about February 14, 2002, the Bush Administration unveiled its long awaited national energy and environmental climate change plan, intended to both ensure our country's national security by reducing our dependence on foreign source oil, and to encourage industry's voluntarily reduction of greenhouse gas ("GHG") emissions believed by many scientists to contribute to global warming and climate change.¹ The plan is intended as an alternative to the mandatory emissions reduction, reporting and compliance requirements imposed by the Kyoto Protocol, a unique multilateral environmental treaty which the United States signed on December 12, 1998, but never ratified.² The Bush Administration subsequently rejected the Kyoto Protocol in March 2001. The administration reasoned that the protocol failed to subject developing countries to any of the emissions reduction requirements imposed on industrialized nations and that its adoption by the United States would result in serious harm to the U.S. economy.³

The announcement of the Bush plan was preceded by efforts made by the U.S. Congress to address our country's national security, energy use and environmental needs. On August, 21, 2002, the House of Representatives passed H.R. 4 "Securing America's Future Energy ('SAFE') Act of 2001," which it then submitted to the U.S. Senate for consideration. During the fall of 2001, a parallel bill introduced within the Senate entitled, "The National Laboratories Partnership Improvement Act of 2001" (S.517), had begun to attract the Senate's attention.⁴ Within a day of the Bush plan's announcement, S.517 was modified by Senate Amendment No. 2917 entitled, "The Energy Policy Act of 2002", which includes within it the "Climate Change Strategy and Technology Innovation Act of 2002."⁵ At approximately the same time, a separate tax bill, S.1979 "The "Energy Tax Incentives Act of 2002", containing energy-related tax incentives, was introduced and reported to the Senate.⁶ These Senate bills and related subsequent amendments ultimately coalesced into a final version of S.517

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that was approved by the Senate on April 25, 2002, and incorporated into the House bill.⁷ Of all the legislation crafted by the U.S. Congress, only the “Climate Change Strategy and Technology Innovation Act of 2002” integrates U.S. energy policy with U.S. climate change policy.⁸

The Kyoto Protocol, as updated and clarified by the Bonn and Marrakech Agreements, reflects the global community’s joint response to accumulating scientific evidence that increasingly points toward a link between GHG emissions, global warming and climate change. The protocol seeks to implement, in a legally binding manner, previously agreed upon but unattained goals set forth pursuant to the United Nations Framework Convention on Climate Change (“UNFCCC”), adopted by 186 governments, including the United States, since May 1992.⁹ The stated objective of the UNFCCC is the “stabilization of atmospheric concentrations of GHGs at a level that would prevent dangerous anthropogenic interference with the climate system...within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a ‘sustainable manner.’”¹⁰ The Kyoto Protocol emphasizes the need to address global climate change as part of a broader international effort to improve both the environment and living conditions of all peoples consistent with the notion of ‘sustainable development’. “The aim is to tackle climate change as part of our wider commitment to ‘sustainable development.’ This includes two components. The first is to maintain global economic development. The second is to do so on an environmentally sustainable basis.”¹¹

The term ‘sustainable development’ was first popularized in 1987, by the publication of the Report of the World Commission on Environment and Development, entitled “Our Common Future”. This report, which later became known as the ‘Brundtland Report’, defined ‘sustainable development’ as development that is “consistent with future as well as present needs.” Its central themes criticized the then dominant paradigm for failure to reconcile these needs. The report claimed that the earth’s natural systems have limited capabilities to support human production and consumption and that existing economic policies, if continued, could result in irreversible damage to natural systems on which all life depends. The sustainable development paradigm emphasizes the need to redefine the term *development*.¹²

The United States is both the leading member of the global economic community and the single largest global emitter of GHGs. The United States therefore bears a special responsibility to act in a manner that not only reflects its unique status and capabilities, but also honors its agreement, as a UNFCCC signatory, to conscientiously address the problem of global climate change.¹³ Since the United States has chosen to respond to this environmental challenge outside of the preferred international regime (the Kyoto Protocol), its response must be carefully evaluated to see whether its objectives and the measures selected to achieve them are likely to preserve the global environment for current and future generations, consistent with the goal of sustainable development.

The aim of this paper is threefold: 1) To highlight the key requirements and mechanisms of the Kyoto Protocol, as clarified by the Bonn and Marrakech Agreements, especially its goal of promoting sustainable development; 2) To highlight the aggregate proposed U.S. response to the Kyoto Protocol's effort to address climate change, considering key proposals contained within the Bush plan and the House and Senate bills for achieving GHG emissions reductions and the creation of renewable clean energy sources; and 3) To analyze whether the aggregate proposed U.S. response promotes sustainable development within the context of climate change, and consequently, whether it serves as a realistic alternative to the Kyoto regime.

An analysis of the proposed U.S. response to the Kyoto Protocol reveals overall a genesis of a conscientious long-term plan that endeavors to achieve stabilization and ultimately reduction of GHG emissions in furtherance of the goal of sustainable development. It can fairly be said that certain aspects of the plan represent a "new beginning" concerning the U.S. attitude and behavior towards the long-term problem of global warming and climate change. Other aspects of the response, however, continue to focus on short-term domestic energy needs to the detriment of the global environment. Hopefully, the actions planned by the United States will constitute only the first of many steps needed to transform its fossil fuel- based energy infrastructure into one that favors energy derived from cleaner and more renewable sources. At least one study has concluded, that even if the U.S. remains outside the Kyoto regime U.S. companies may still be able to participate in emission reduction projects in developing countries and earn emission reduction credits for later use in a regional or national emissions trading system.

Notwithstanding its inherent flaws, the proposed U.S. response, arguably, sets forth goals that the United States believes it can realistically achieve. It is precisely this issue that other developed nations are now struggling to address as they each decide whether to ratify the Kyoto Protocol. Recent media reports have indicated, for example, that Canada will be unable to meet its Kyoto commitment to cut GHG emissions, and may join the United States and pull out of the Kyoto Protocol. In addition, on June 5, 2002, Australia announced that it would not ratify the Kyoto Protocol, following many months of internal debate and indecision. Furthermore, despite Japan's ratification of the Kyoto Protocol, on June 4, 2002, the Japanese legislature continues to find itself at the center of a 'domestic global warming debate', as it studies how to effectively revise the nation's global warming prevention law in order to meet its commitments under the protocol.

That Canada, Australia and Japan are experiencing these internal debates about climate change is significant. They, along with the United States, previously comprised the membership of an Umbrella Group of countries that collectively fought for concessions during the negotiations preceding the adoption of the Kyoto Protocol.¹⁴ Since the protocol will enter into force only after fifty-five states ratify or accede to it, provided those states account for at least 55 percent of the total 1990 carbon dioxide

emissions of developed states, the actions taken by these countries individually will likely determine whether the Kyoto Protocol will ever become binding international law.¹⁵

I. HIGHLIGHTS OF THE KYOTO PROTOCOL AS CLARIFIED BY THE BONN AND MARRAKECH AGREEMENTS

A. *The Kyoto Mechanisms*

The Kyoto Protocol, agreed to in December 1997, sets forth legally binding GHG emission targets for each of the industrialized nations listed. The Kyoto Protocol is the first step toward meeting the mandate of the UNFCCC.¹⁶ Overall, the developed countries are supposed to achieve at least a 5 percent reduction in GHG emissions from 1990 levels over the period spanning from 2008 through 2012.¹⁷ The United States, for example, must reduce its GHG emissions to 7 percent below its 1990 'baseline' level by the end of that period.¹⁸ The protocol covers six GHGs: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride.¹⁹

The Kyoto Protocol, agreed to in December 1997, sets forth legally binding GHG emission targets for each of the industrialized nations listed.

The overriding goal of the Kyoto Protocol is to promote 'sustainable development'. "Each [industrialized (Annex I)] party, in achieving its quantified emissions limitation and reduction commitments, *in order to promote sustainable development*, (emphasis added) shall: a) implement and/or further elaborate policies and measures in accordance with its national circumstances; and b) cooperate with other Parties to enhance the individual and combined effectiveness of their policies and measures adopted under this Article...To this end, the Parties shall take steps to share their experience and exchange information on such policies and measures."²⁰ The Kyoto Protocol does not specify the policies and measures individual countries should implement to achieve their emissions limitations. Rather, the Kyoto Protocol provides Parties (primarily, industrialized nations and nations in the process of economic transition) with several ways to address climate change issues in fulfillment of this objective. First and foremost, they can promote GHG emission reductions domestically by taking pre-emptive state level actions. Such measures would include promoting sustainable forest management practices (including afforestation and reforestation), enhancing energy efficiency within relevant sectors of the economy, and promoting research, development and increased use of new and renewable forms of energy, carbon dioxide sequestration technologies and advanced 'break-through' technologies. Alternatively, they can mitigate climate change impacts after they have occurred.²¹

Apart from and as a supplement to domestic action,²² firms within industrialized

nations can engage in GHG reduction activities with other countries pursuant to any of three possible collaborative instruments. One way they can reduce GHGs abroad and earn emissions reduction credits, is by trading GHG emission permits (emissions trading) with firms of other developed countries with a binding emissions target (“Annex B countries”).²³ Tradable permits are seen as a more flexible means of achieving emissions targets, since they will likely allow firms or nations to keep down the costs of reducing GHGs. Cost reductions can be achieved when a firm or nation that finds it comparatively easy to reduce GHGs can sell emissions permits to a firm or nation which finds it more expensive to reduce GHGs. Emissions trading can potentially result in more GHGs being reduced at the same overall economic cost, without affecting the level of environmental protection (or social cost). Whether emissions trading will be successful will depend on how the rules of such a system are defined. At the present time, since emission trading has not been conducted on an international scale, many uncertainties and potential difficulties remain.²⁴

Alternatively, firms within industrialized nations can reduce GHG emissions abroad and earn emissions reduction credits by collaborating with other developed nations on specific emissions reduction projects pursuant to the ‘joint implementation’ (“JI”) mechanism.²⁵ The JI instrument can help industrialized countries to reduce their net cost of building clean power plants or promoting energy efficiency systems. In fact, a number of successful forest conservation and tree-planting efforts have been initiated pursuant to the JI mechanism. The emissions reductions that can be achieved through enhancement of GHG absorption by biological or physical ‘sinks’, for example, can be significant. And the JI instrument can be utilized effectively to finance joint carbon sequestration projects once development needs, such as reforestation and rural development have been satisfied.²⁶ JI projects are likely to be undertaken by countries that do not participate in international emissions trading programs.²⁷

Lastly, firms within developed countries can obtain emissions reduction credits (ERCs) by engaging in project activities in a developing country, through the clean development mechanism (“CDM”).²⁸ The choice and type of CDM projects, to be effective, must be voluntarily agreed to and determined by the development needs of the developing country partner. Possible collaborative projects include the construction of high-tech, environmentally sound power plants, or more adaptive projects such as sea wall construction the goal of which is to protect a developing country from the impacts of climate change. The CDM is intended to serve as a funding vehicle to assist developing countries towards sustainable development.²⁹

B. The Bonn and Marrakech Agreements

On November 9, 2001, the Seventh Session of the Conference of the Parties (COP-7) agreed in Marrakech, Morocco upon additional rules for implementing the Kyoto Protocol. These rules also clarify an earlier agreement of the Parties known as the “Bonn Agreement” (COP-5), reached in July 2001. A brief summary of some of the significant updates to the Kyoto Protocol follows.

The Bonn Agreement previously required industrialized countries to satisfy four

eligibility requirements in order to participate in any one of the Kyoto mechanisms. For example, each developed country must establish at the national level an emissions monitoring system, a registry to track trades and an inventory of both its 'base year' and current year GHG emissions. Also each developed nation must expressly accept the Kyoto compliance regime.³⁰ The Marrakech Agreement established a fifth requirement for eligibility, namely, that an industrial country must also report on its 'sinks activities'.³¹ In addition, the Marrakech Agreement created an exception to the eligibility rules. It now permits a developed nation that otherwise would be ineligible to participate in the Kyoto mechanisms because it failed the inventory requirement, to *host* JI projects through a project design and approval process similar to the CDM.³²

The Marrakech Agreement, furthermore permits 'unilateral CDM', pursuant to which a developing country may undertake a CDM project *without* an industrialized country partner and later market the resulting emissions credits. This may be critical for smaller developing countries less likely to draw major developed nation investments. It can also be important for businesses hoping to market clean technologies in developing countries. Unilateral CDM would also enable a developing country to partner with a country that is not a Party to the Kyoto Protocol, such as the United States.³³

The Marrakech Agreement, moreover, treats emissions units from one Kyoto mechanism (e.g., emissions trading) as equally 'fungible' with emissions units from all other Kyoto mechanisms (JI, CDM). Such treatment would allow for a more liquid market in emissions units, since emission units from all such mechanisms can be transferred several times as equal units. It would also make the mechanisms more viable, thereby enhancing opportunities for cost-effectiveness. Also, the Marrakech Agreement maintains the Bonn Agreement's requirement, that each industrialized country must hold back from the (trading) market, either 90 percent of its allowable emissions or five times its most recently reviewed emissions inventory, whichever is lower.³⁴ This provision addresses the risk of overselling emission credits that a Party might later need to meet its own target.

Lastly, the Marrakech Agreement has deferred a decision until the next meeting of the Parties concerning whether the proposed penalty for failure to achieve specified GHG reductions, as set forth in the Bonn Agreement, will be legally binding. Pursuant to the proposed compliance regime, a country failing to meet its Kyoto emissions target in the current target period, for example, would be required to make up its shortfall, plus 30 percent, in the next target period.³⁵

II. THE U.S. RESPONSE TO THE KYOTO PROTOCOL

The preservation of a strong U.S. economy and a secure U.S. energy infrastructure is of vital concern to the current Administration and to the U.S. Congress. A strong and secure U.S. economy that promotes peace and prosperity abroad is also in the interest of the global economy at large. Notwithstanding these interests, however, the United States cannot focus solely upon its national economic and energy needs to the

exclusion of their environmental impact upon the global atmosphere. This would, arguably, be tantamount to ignoring our global responsibilities to other nations.³⁶ In addition, environmental issues pertaining to the upper atmosphere and climate change, despite the scientific uncertainties that surround them, are of a global rather than a sovereign magnitude. For this reason, they must be addressed and acted upon jointly by all nations of the world.

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The preamble to the UNFCCC acknowledges that a change in the Earth's climate and its adverse effects are a 'common concern of humankind'. That recognition has given rise to a growing consensus that the planet is ecologically interdependent, and that humanity may have a collective interest based on environmental concerns in certain activities that take place within sovereign state boundaries:

*"Once an environmental concern has been designated as a 'common concern of humanity' (CCH), it is no longer viewed as the province solely of individual states. Growing concern that the emission of fossil fuels threatens the Earth's climate system led to the execution of the UNFCCC, and the designation of climate change as common concern of humanity. The CCH designation by itself, however, implies NO (emphasis added) specific legal obligation owed by one state to any other state beyond that of 'cooperation'. Rather, it requires "world-wide cooperation to take concerted action to avoid environmental disaster."*³⁷

A. Highlights of the Bush Energy / Climate Change Plan

1. Domestic Initiatives

The plan announced by President Bush this past February is based on the notion that the continued, unimpaired economic growth of the United States is essential to finance the types and magnitude of energy-related and technological infrastructure changes needed to stabilize and ultimately reduce the amount of U.S. GHG emissions that are absorbed into the atmosphere.³⁸ The plan recognizes that although climate change is a complex, long-term challenge that will require a sustained effort over many generations, neither the limits of our current knowledge nor the presence of scientific uncertainty should prevent the United States from beginning now to address the factors that contribute to climate change.^{39*}

The cornerstone of the Bush plan is to reduce the "GHG intensity" of the U.S. economy by 18 percent over the next ten years. GHG intensity measures the ratio of GHG emissions to economic output.⁴⁰ The Bush plan claims that the use of a GHG intensity target is intended to separate the goal of reducing emissions from the potential economic harm associated with a rigid emission cap. It is believed that if GHG

emissions are measured relative to economic activity, it will be possible to gauge progress as emissions reduction programs are being implemented.⁴¹ It is also asserted that this goal is comparable to the average progress that nations participating in the Kyoto Protocol are required to achieve.⁴²

The President's plan recognizes that the goal of reducing GHG intensity overall requires an assurance that individual players are endeavoring to reduce the rate of their GHG emissions. In order to facilitate public confidence that such practices are indeed taking place, but without penalizing emitting parties from disclosing accurate information about their mitigation efforts, the Bush plan focuses upon improving the current voluntary GHG Reduction and Sequestration Registry. That registry recognizes GHG reductions by non-governmental entities, businesses, farmers and the federal, state and local governments.⁴³ The primary aim is to promote the identification and expansion of innovative and effective ways to reduce GHGs.⁴⁴ In addition, the plan intends to protect businesses and individuals that register reductions from future environmental policy change requirements by providing persons that can show real emissions reductions with transferable credits which may be used in a future emissions trading market.⁴⁵

The cornerstone of the Bush plan is to reduce the “GHG intensity” of the U.S. economy by 18 percent over the next ten years.

The Bush plan, furthermore, seeks to build on existing voluntary GHG emissions reduction agreements entered into with the semi-conductor and aluminum industries and with industries that emit methane.⁴⁶ It calls upon the EPA to launch a new “Climate Leaders Program” with a group of major companies that have voluntarily agreed to test new GHG reporting guidelines as the basis for agreeing to emissions targets in the future. The program is intended to provide a significant opportunity to achieve the targeted GHG intensity reductions through a voluntary approach.⁴⁷

Noting that GHG emissions have risen with economic growth during past decades due to plentiful and inexpensive fossil fuels, the Bush plan seeks to break the emission–economy link by investing in new research and development, and by deploying advanced technologies to mitigate emissions.⁴⁸ Specifically, the plan calls for clean energy tax incentives to be offered over the next five years, to spur investments in renewable energy (solar, wind and biomass), hybrid and fuel cell vehicles, cogeneration, landfill gas (methane) conversion and ethanol.⁴⁹ Furthermore, the Bush plan calls for the creation of the Climate Change Research Initiative (CCRI), through which monies will be funneled for basic research on climate change. The CCRI will focus on studying areas of scientific uncertainty and on identifying priority areas where investments can make a difference.⁵⁰ Moreover, the Bush plan provides for the creation of the National Climate Change Technology Initiative (NCCTI) pursuant to which funds will be committed to funding research on “breakthrough” climate change technologies.⁵¹

2. *Global Initiatives*

In addition, the President's plan seeks to promote new and expanded international policies designed to compliment U.S. domestic programs. One such policy would call for the expansion of joint research agreements with Italy, Japan and Central America. Pursuant to these agreements, the parties will engage in joint climate change science and technology research activities, including advanced climate modeling, aimed at understanding, monitoring and predicting climatic variations and their impacts.⁵² In particular, the U.S.-Japan partnership, which has since been finalized, will also investigate how market incentives may be used to affect global climate change.⁵³ Since the announcement of the Bush plan, the United States has entered into a new partnership agreement on climate change with Australia, which, among other issues, will focus on researching emissions measurements and accounting, land management and developing country collaborations.⁵⁴

Another international policy would involve 'debt-for-nature' forest conservation programs. In a debt-for-nature 'swap', the U.S. government and a U.S. based nongovernmental organization(s) ("NGO") will typically assume a portion of a developing country's debt owed to the U.S., and accept payments back from the debtor country of a portion of the remaining balance owed in the form of national currency. The United States and the U.S. based NGO will then donate the monies back to the debtor government pursuant to a commitment (e.g., local currency obligations) to utilize these funds for tropical forest conservation activities through local NGOs. "This would allow a developing country to pay off the loan by exporting the service of protecting its environment (forests) to the rest of the world, rather than by exporting the natural resources (the trees)."⁵⁵

Another international policy would involve 'debt-for-nature' forest conservation programs.

In addition, other international policies are geared toward fulfilling commitments owed generally by developed nations to developing countries pursuant to the UNFCCC.⁵⁶ These commitments focus mainly on providing the financial and technological resources needed by developing nations to implement measures that will deal with the environmental effects of climate change. For example, the Bush plan calls for the allocation of \$25 million to climate observation systems in developing countries. It also proposes a \$77 million increase in the funding of the Global Environmental Facility ("GEF"). The GEF plays a critical role in improving the environment globally, particularly in financing developing countries' ability to address environmental issues relating to climate change, biodiversity conservation and land degradation. The GEF, operating as the UNFCCC's primary "financial mechanism", funds the extra costs over normal development costs ('incremental' costs) of reducing GHG emissions in energy and other projects. And, the Bush plan also calls for

budgeting \$155 million to fund climate change programs established by the United States Agency for International Development ('USAID') to facilitate bilateral technology transfers and capacity building in developing countries.⁵⁷

B. Highlights of the House Bill (H.R. 4)

The House bill is essentially an omnibus energy bill that emphasizes domestic energy production, energy research and development, and tax incentives geared toward conservation and production. It expresses the sense of the Congress that the United States should take all actions necessary in the areas of conservation, efficiency, alternative source, technology development and domestic production, to reduce the United States' dependence on foreign energy sources.⁵⁸ The omnibus House bill does not directly address environmental issues, which are instead treated as mere ancillary benefits derived from achieving optimal energy efficiencies.

The House bill is essentially an omnibus energy bill that emphasizes domestic energy production, energy research and development, and tax incentives geared toward conservation and production.

Among its many provisions, the omnibus House bill includes the following energy conservation proposals: 1) An extension of specified Federal energy conservation programs;⁵⁹ 2) An expansion of the National Energy Conservation Policy Act to include the Federal Government's promotion, production, supply, and marketing of energy efficient products and services, and unconventional and renewable energy resources;⁶⁰ and 3) The expansion of the Energy Star program at the Department of Energy and the Environmental Protection Agency to identify and promote energy-efficient consumer products and buildings in order to reduce energy consumption, improve energy security, and reduce pollution through labeling of products and buildings that meet the highest energy efficiency standards.⁶¹

Several portions of the House bill enumerate goals and earmark appropriations for continued and expanded energy research, development, demonstration and commercial application programs that increase energy efficiency and conservation and minimize adverse environmental impacts. These provisions, for example, emphasize energy conservation and efficiency with respect to building technology, state and community sectors, industry, power technologies and transportation. In addition, they allocate resources to learn more about renewable energy sources, such as hydrogen, bio-energy, geothermal technology, hydropower, solar power, photovoltaic energy systems, solar building technology, wind energy systems and electric energy systems and storage. Furthermore, the House provisions focus on developing nuclear energy and cleaner fossil energy.⁶²

Consistent with the energy provisions mentioned above, the House bill contains various tax incentives (mostly credits) that fall into one of three broad categories. Certain incentives are geared toward promoting conservation, including development

of renewable energy sources.⁶³ Other incentives are intended to encourage reliability.⁶⁴ And still others focus on increasing energy production from conventional fossil fuel sources.⁶⁵

*C. Highlights of the Senate Bill*⁶⁶

*1. Energy Provisions*⁶⁷

The energy goals articulated within the Senate bill are similar to those mentioned within the House bill. Their emphasis essentially is to provide for the energy security of the nation. The Senate bill, unlike the House bill, however, does not seek to promote increased energy production from conventional fossil fuel sources. Rather, with the environment in mind, it is largely focused on ‘decarbonizing’ the economy by reducing the amount of carbon produced for a given amount of energy.⁶⁸

The Senate bill seeks to accomplish this by promoting the development of energy supplies from a greater diversity of sources (‘fuel-switching’). It endeavors, among other things, to: 1) create a renewable portfolio standard and to provide incentives to triple the amount of U.S. electricity produced from renewable energy sources, including solar, wind, geothermal and biomass; 2) expand the amount of renewable fuels, such as ethanol and biodiesel used in motor vehicles; 3) lower barriers for installation of cogeneration power facilities and power facilities that generate electricity from fuel cells; 4) increase funds to speed the permitting of new domestic oil and gas production technologies; and 5) to invest in research and development to ensure a full range of fuels and technologies are available for the future, from clean emission-free coal technologies, hydropower and nuclear energy, to fuel cell and renewable technologies.⁶⁹

The Senate bill, like the Bush plan, moreover, aims to decarbonize the economy by reducing its overall ‘energy intensity’.

The Senate bill, furthermore, endeavors to “decarbonize” the economy by exploiting new technological efficiencies to improve all areas of energy use. It attempts to accomplish this in several ways. For example, it recognizes that a reduction in the amount of gasoline and petroleum consumption can be obtained by increasing corporate fuel economy (CAFÉ) standards for cars, SUVs and light trucks.⁷⁰ Also, significant energy savings (gasoline, electricity, etc.) can result by requiring greater efficiencies in fuel and energy use from the Federal government and its employees. And, additional energy savings can be secured by establishing new efficiency standards for commercial and consumer products.⁷¹

The Senate bill, like the Bush plan, moreover, aims to decarbonize the economy by reducing its overall ‘energy intensity’. Energy intensity is defined as the amount of energy required per unit of economic output (e.g., gross domestic product), and is cited by experts as an important element of decarbonization.⁷² The Senate bill adopts this view and establishes a framework for a comprehensive energy research, development

and deployment program, the objectives of which are to: 1) reduce 'energy intensity' 1.9 percent each year through 2020; 2) reduce total energy consumption by 8 quadrillion Btu by 2020 from otherwise expected levels; and 3) reduce carbon dioxide emissions from expected levels 166 million metric tons by 2020.^{73 74}

2. *Tax Incentive Provisions*⁷⁵

The tax incentive provisions contained within the Senate energy bill appear somewhat more environmentally friendly (and less oil friendly) than those contained within the House bill. The three key elements of these provisions are: 1) new production; 2) new technology and 3) conservation.

The production incentives are intended to encourage new energy development, because through 2020, U.S. energy consumption is projected to increase more rapidly than domestic production, thereby increasing United States dependence on foreign oil. Some of these provisions extend the availability of the tax credit for producing electricity from either wind energy or biomass, and qualify many more sources as renewable fuel sources, including geothermal, solar and plant life.⁷⁶ Other provisions create incentives for clean coal. Taxpayers that retrofit facilities to use currently available clean coal technology are eligible for a production tax credit. Taxpayer facilities that use advanced technology are eligible for both an investment credit and a production credit.⁷⁷ Additional incentives create a new credit for oil and gas production from marginal wells, and a limited tax break for geological and geophysical expenditures.⁷⁸ Each of these tax incentives is intended to encourage more energy production from a variety of renewable and traditional sources, while promoting a cleaner environment.

The new technology incentives focus on the transportation sector of the economy and impose very stringent emissions standards in order to ensure a cleaner environment.

The new technology incentives focus on the transportation sector of the economy and impose very stringent emissions standards in order to ensure a cleaner environment. Tax credits are available to purchasers of new technology vehicles powered by alternative fuels, fuel cells, or by electricity. A credit is also provided for the purchase of hybrid vehicles that run partly on electricity and partly on gasoline.⁷⁹ Each of these vehicles offer significant advantages compared to traditional fuel vehicles. The short-term goal is to promote the use of hybrid and alternative fuel vehicles. The long-term goal is to promote the use of zero-emission fuel cell and electric vehicles. In addition, incentives are provided to develop a new infrastructure to deliver the new fuels called for by such vehicles. In particular, credits are provided for the installation of new refueling station technology and for the purchase of alternative fuels.⁸⁰ All tolled, the new technology incentives are intended to transform automotive transportation in the United States so that it is cleaner, more fuel efficient and less reliant on imported oil.

The conservation incentives are intended to promote energy conservation, in order to ensure a cleaner environment and lessen reliance on foreign energy sources. Increased

conservation is deemed to have the same effect as reduced consumption. A tax credit is provided to individuals who use energy consumption information devices (smart meters) to track energy use in their homes.⁸¹ In addition, credits are available to individuals who purchase energy efficient refrigerators, air conditioners and other appliances.⁸² Furthermore, credits are provided to encourage energy efficient construction, to make homes and commercial buildings more energy efficient.⁸³ A credit is also provided to purchasers of combined heat and power system property.⁸⁴

3. *Climate Change Provisions*

The interrelationship between energy use and the environment was intently focused upon during the debates and colloquies preceding the passage of the Senate energy bill. Senator Robert Byrd (D. WV), for one, well articulated the need for the Senate bill to address both of these issues at the same time. “Climate change and energy policy are two sides of the same coin. Because the vast majority of manmade greenhouse gas emissions are associated with energy use, it is here, in an energy bill, that we need to deal with the long-term challenges associated with global climate change.”⁸⁵

a. *The Current Condition of the Environment and the U.S. ‘Call to Arms’*

The portion of the Senate energy bill that addresses global climate change is contained within the provisions of the “Climate Change Strategy and Technology Innovation Act of 2002” (the “Climate Change Act”). The Climate Change Act reflects the concern of the Senate that “over the past decade, energy research and development budgets in the public and private sectors have declined precipitously and have not been focused on the climate change response challenge, and that the investments that have been made to date have not been guided by a comprehensive strategy”.⁸⁶ As a result, the current ability of the United States to respond adequately to climate change issues has been impaired. The Senate, therefore, deems it imperative for the United States to facilitate a veritable technological revolution in the global energy system and other emitting sectors and to develop a well designed climate change response strategy that features meaningful emissions reduction mechanisms.⁸⁷

The Climate Change Act instructs the United States to remain cognizant of its shared responsibility, as a “developed country Party” to the UNFCCC, and to take the lead in combating climate change and related adverse effects,⁸⁸ notwithstanding the concerns previously expressed within Senate Resolution 98.⁸⁹ This non-binding resolution called for the Clinton Administration not to ratify the Kyoto Protocol because it failed to subject developing countries to any of the emissions reduction requirements imposed on industrialized nations and because its adoption by the United States would likely result in serious harm to the U.S. economy.⁹⁰ Furthermore, the Climate Change Act calls upon the United States to demonstrate ‘international leadership and responsibility’ in mitigating health, environmental and economic threats posed by global warming. It also admonishes the Bush Administration against inaction, in light of mounting scientific evidence of increased GHG atmospheric concentrations, and notwithstanding the scientific uncertainties that remain, including science’s inability to determine precisely what atmospheric concentrations are dangerous.⁹¹

The kind of leadership envisioned necessitates: 1) taking responsible actions to ensure meaningful reductions in GHG emissions; 2) creating flexible international and domestic market mechanisms, including joint implementation, technology deployment emissions trading and carbon sequestration projects that will reduce, avoid and sequester GHG emissions; and 3) participating in international climate change negotiations.⁹² In effect, the Climate Change Act expresses the Senate's belief that, only by pursuing this magnitude of reform can the United States aspire to eventually participate in a revised Kyoto Protocol or other future binding climate change agreement that both protects its economic interests and recognizes the shared international environmental responsibility for addressing climate change, including developing country participation.⁹³

b. Domestic Measures To Be Taken:

The Climate Change Act articulates two primary objectives: a) stabilization of GHG atmospheric concentrations at a level that would prevent dangerous anthropogenic (human) interference with the climate system; and b) implementation of an internationally-minded strategy that: i) defines mitigation levels and utilizes mitigation approaches that would result in stabilization of GHG atmospheric concentrations; ii) reflects a commitment to energy research and development that emphasizes breakthrough technologies; iii) focuses on climate adaptation research; and iv) focuses on resolving remaining scientific, technical and economic uncertainties about climate science research.⁹⁴ To achieve these goals, the Senate requires that any U.S. response take into account the international nature of the challenge. In particular, a credible response must establish joint climate strategies and joint research programs with other developed nations. In addition, it must provide assistance to developing countries and countries in transition for building technical and institutional capacities, along with incentives for addressing the challenge. And, a reasonable response must promote public awareness of the issue.⁹⁵

The Climate Change Act calls for the establishment of the following new offices to implement its proposed climate strategy. They include: 1) a National Office of Climate Change Response, within the Executive Office of the President;⁹⁶ 2) an Interagency Task Force chaired by the Director of the White House Office;⁹⁷ 3) an Office of Climate Change Technology within the Department of Energy;⁹⁸ and 4) an Independent Review Board.⁹⁹

The Climate Change Act, furthermore, would establish a comprehensive National GHG Database system to collect, verify and analyze information on GHG emissions generated by entities (including, presumably, all affiliates and related parties within an 'entity-wide' organizational structure, as later defined by regulations to be promulgated under New Section 1104) located in the United States, and GHG emission reductions carried out by entities based in the U.S.¹⁰⁰ The purpose of such a database system would be to create complete, transparent, reliable and accurate data that can be used by public and private entities to design efficient and effective GHG emission reduction strategies.¹⁰¹ Information compiled from such a database would

also serve as a national GHG inventory for purposes of compliance with the United Nations Framework Convention on Climate Change (UNFCCC).¹⁰²

In contrast to the President's plan, the Climate Change Act would impose detailed and rigorous mandatory reporting requirements that each entity must follow, unless exempted. First, an entity must establish its own *and* an 'entity-wide' historic emissions 'baseline'. This baseline shall consist of the gross amount of all entity and entity-wide GHG emission levels, less actual GHG reductions allocable to the entity and the entity-wide organizational structure.¹⁰³ Once a historic baseline has been established, for each successive calendar year thereafter, an entity must report annually all GHG emissions it has generated and that have been generated collectively within its 'entity-wide' organizational structure during that year. The annual reporting requirement applies if the total GHG emissions of at least one of the entity's facilities, or the total GHGs produced, distributed and/or imported by the entity exceeds a minimum threshold of 10,000 metric tons of carbon dioxide equivalent per year.¹⁰⁴ The GHG emissions must be reported facility-by-facility, and must be expressed in terms of mass AND in terms of carbon dioxide equivalent. They must also include an estimate of the GHG emissions from fossil fuel combusted by products manufactured and sold by the entity, over the average lifetime of those products.¹⁰⁵ All information reported annually and to establish a historic baseline must be capable of being verified by the appropriately charged administrative agency.¹⁰⁶ An entity shall be exempted from the baseline and annual reporting requirements, if it can demonstrate that all of its entity and entity-wide GHG emissions activities are covered by an agreement entered into with a GHG registry participant, for the purpose of a carbon sequestration project.¹⁰⁷ Otherwise, an entity shall be exempted from the Climate Change Act's mandatory reporting requirements if it is already required to report carbon dioxide emissions data to a Federal agency on the date the Act is enacted.¹⁰⁸

The Climate Change Act, furthermore, solicits the involvement of the public in formulating the criteria the government will utilize in evaluating GHG emissions and reduction activities.

In addition to manual reports, the Climate Change Act also provides for voluntary submissions to the GHG registry. An entity may choose to report, with respect to its preceding calendar year's GHG emissions (as reported above), all emissions project reductions, transfers of emissions project reductions and product use phase emissions.¹⁰⁹ Also, an entity may report all indirect GHG emissions not otherwise required to be reported.¹¹⁰ An entity, furthermore, may voluntarily report all GHG emissions reduction activities that it previously carried out during any year beginning in 1990, and that have been verified and previously disclosed pursuant to a current voluntary GHG emissions reduction program.¹¹¹ Lastly, an entity may voluntarily report information about any other GHG emissions reduction or sequestration projects or

activities in which it has engaged and not yet reported about, and which is not otherwise reportable within the mandatory registry.¹¹² It is highly recommended that prior to submitting data to the voluntary registry, an entity should first have it verified by qualified independent third parties.¹¹³

The Climate Change Act, furthermore, solicits the involvement of the public in formulating the criteria the government will utilize in evaluating GHG emissions and reduction activities. In particular, it instructs the federal agencies responsible for managing and implementing the national database system to jointly develop comprehensive measurement and verification methods and standards to ensure a consistent and technically accurate record of GHG emissions, emission reductions, sequestration and atmospheric concentrations for use in the registry, within one year of the bill's enactment.¹¹⁴ In furtherance of this endeavor, the agencies are advised to obtain the assistance of experts and consultants in the private and nonprofit sectors (e.g., NGOs), in the areas of GHG measurement, certification and emission trading.¹¹⁵ To secure the services of these persons, the agencies are instructed to use *any* available grant, contract, cooperative agreement or other arrangement authorized by law.¹¹⁶ The Act also provides that all methods and standards so developed should be made available to the public for comment, prior to being finalized for enactment into law.¹¹⁷

To ensure compliance with the registry provisions, the Climate Change Act (unlike the President's incentive approach) would impose two types of penalties, one monetary, another not. If an entity that participates or has participated in the voluntary registry fails to submit a report capable of being verified, or fails to submit an annual report at all, it will be prohibited prospectively from including GHG emissions reductions to the registry in the calculation of its own (and possibly entity-wide) baseline in future years.¹¹⁸ Furthermore, an entity otherwise subject to the mandatory reporting requirements that fails either to establish a historic baseline or to submit an annual report (including, presumably, a report that is not verifiable), may be subject to civil monetary penalties of up to \$25,000 per day.¹¹⁹

“The United States should market our clean energy technologies, especially clean coal technologies, to developing nations...”

c. Measures to Assist the Developing World:

Consistent with the need to assist developing nations address the problems of global climate change, the Climate Change Act establishes an interagency working group to coordinate and promote U.S. government efforts to open overseas energy markets for U.S. ‘clean energy technology’ exports. Clean energy technology is defined, as an energy supply or end-use technology that over its lifecycle and compared to a similar technology already in commercial use in developing countries, countries in transition, and other partner countries: 1) emits substantially lower levels of pollutants or GHGs; AND 2) may generate substantially smaller or less toxic volumes of solid or

liquid waste.¹²⁰ Entitled, the ‘Clean Energy Exports Program’, this initiative is also intended to facilitate the transfer of U.S. clean energy technology to developing countries and countries in transition, that are expected to experience, over the next 20 years, the most significant growth in energy production and associated GHG emissions.¹²¹ As noted by Senator Robert Byrd (D. WV), the author of this program, the Clean Energy Exports Program would cover, among other endeavors, technology transfer programs pursued under the UNFCCC:

“The United States should market our clean energy technologies, especially clean coal technologies, to developing nations, like China, India, South Africa, and Mexico, to help them meet their economic and energy needs... Furthermore, such technologies can enable these countries to build their economies in more environmentally friendly ways, thus helping the global effort to address climate change.”¹²²

The Climate Change Act also establishes a pilot program to provide financial assistance to U.S. firms that undertake “qualifying international energy deployment projects” in any developed country or a country in transition (listed in Annex I of the UNFCCC), or within any developing country.¹²³ The pilot program would permit an eligible firm to construct an energy production facility outside the United States, provided: 1) the output from such project will be consumed outside the U.S.; and 2) the deployment of such project would result in a GHG reduction per unit of energy produced that is at least 10 percent greater than that achievable using the technology otherwise available.¹²⁴

Proposals submitted for projects in developing countries may include a research component intended to build technological capacity within the host country, provided the research is related to the technologies being deployed, and it involves a host country institution and an industry, university or national laboratory participant from the United States. In addition, the host country institution must contribute at least 50 percent of the funds required for such research.¹²⁵ An eligible U.S. firm will be entitled to receive a loan or loan guarantee bearing an interest rate equal to comparable Treasury obligations, in an amount up to 50 percent of the total cost of the qualified international energy deployment project.¹²⁶ In order for an otherwise eligible U.S. firm to access funds from such a loan or loan guarantee, however, it would first need to secure a financial contribution from the host country equal to at least 50 percent of the total cost of such loan or loan guarantee.¹²⁷

III. EVALUATING WHETHER THE PROPOSED U.S. RESPONSE TO THE KYOTO PROTOCOL PROMOTES SUSTAINABLE DEVELOPMENT:

The question of whether the proposed U.S. response is a realistic alternative to the Kyoto Protocol must be evaluated in light of the principles articulated by the new environmental, social and economic paradigm of sustainable development. This paradigm emphasizes the need of all societies to redefine the term ‘development’ in recognition of the inherent limitations of the earth’s natural systems to support human

production and consumption, and the genuine threat of irreversible damage posed by current economic policies upon the global environment.

The most important indication of a worldwide paradigm shift with respect to the environment was the United Nations Conference on Environment and Development (“UNCED”) held in Rio de Janeiro in June 1992 (the “Earth Summit”). The Earth Summit, among other things, produced the Rio Declaration on Environment and Development (hereinafter referred to as “the Rio Declaration”), a non-binding set of broad principles set forth in the form of declarations, that helped to create international environmental norms and expectations. It also produced a non-binding agreement called ‘Agenda 21’, which is a global plan of action for more sustainable societies that embraces economic growth, social development and environmental protection.¹²⁸ The UNFCCC, as well, was opened for signature at the Earth Summit, although it was negotiated independently of the UNCED during the same period of time.¹²⁹

A. Sustainable (Economic) Development Defined Generally:

The principle of sustainable development requires that all states and people shall cooperate in good faith and in the spirit of (global) partnership, to conserve, protect and restore the health and integrity of the Earth’s ecosystem, in accordance with our ‘common but differentiated’ responsibilities. Although we may each place different pressures upon the global environment and may possess different capabilities, we must nevertheless recognize our ultimate and joint responsibility to address environmental problems based on international consensus.¹³⁰

Implicit within this notion is the conclusion that the earth’s natural ecosystem is capable, with proper stewardship, of regeneration, and that it has the capacity to assimilate in response to physical and human phenomena.¹³¹ This means that we need not abandon economic growth in order to achieve sustainability. Rather, we are free to satisfy our economic needs, provided we do not impoverish our successors.¹³² The concept of sustainability obliges us to conduct ourselves so that we leave to the future the option or the capacity to be as well off as we are.¹³³ Our right to development, in other words, is conditioned upon the fulfillment of our obligation to equitably meet the developmental AND environmental needs of present and future generations.¹³⁴

Dr. Robert Solow, a renowned environmental economist and Nobel Laureate, has aptly summarized how this concept can be pragmatically applied to accommodate economic development:

“The concept of sustainable development does not necessarily require us to “preserve the stock levels we have inherited from the past... There is no specific object or any particular natural resource that the goal [obligation] of sustainability, requires us to leave untouched... [Instead], we can take advantage of the principle of substitutability, [which posits]... that different amenities... and production inputs... really are, to some extent, substitutable for one another... [However,] in doing so, we must [conscientiously] take into account the resources we have used up, [as well as], the resources that we leave behind... [Likewise,] we must consider the environment we leave behind, including the built environment, productive capacity [plant and equipment] and technical knowledge. We may pursue economic

growth and the use of technology in ways that affect our environment, as long as we do not fail to leave behind...for future people...a generalized capacity to create well-being...Our decision [as a society] not to please ourselves at the expense of future well-being, is analogous to our choosing to save and invest our resources for the future...In each case, we have chosen not to spend and consume our resources [capital] currently. Our commitment to environmental protection, [for example,] can be viewed as an investment, that contributes to sustainability, [provided] it comes at the expense of current consumption, and not at the expense of investment in future additions to future capacity...[This implies that] when [in the course of our economic activities] we use up a [non-renewable] resource, including minerals and energy-yielding fossil fuels, such as coal, oil and natural gas..., we are obliged to replace it with some substitute of equal long-term capital value, such as scientific knowledge, technology, research and development, plant and equipment or some environmental investment.”³⁵

While states have the sovereign right to exploit their natural resources pursuant to their own environmental and developmental policies, they are, however, required to ensure that activities within their jurisdiction or control do not cause damage to the environment of other states or of the ‘global commons’. Protection of the environment in pursuit of sustainable development is best achieved by *preventing* environmental harm in the first place, rather than by attempting to remedy or compensate for such harm after it has occurred.¹³⁶

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In the event we are faced with the threat of environmental harm, the principle of sustainable development compels us to act immediately to safeguard the environment, to the full extent of our capabilities. Although we may lack scientific certainty about the magnitude or nature of the threat, we must err on the side of caution.¹³⁷ A *precautionary* approach is called for even if there is no guarantee that adoption of a given measure would prevent serious environmental harm.¹³⁸ It is generally recognized, “that scientific certainty often comes too late to design effective legal and policy responses for preventing potential environmental threats. Most environmental issues involve complex analyses of scientific, technical, and economic factors. We rarely have anything approximating perfect knowledge when law-makers are asked to make decisions whether to respond to a specific threat.”¹³⁹

B. Sustainable (Economic) Development, Energy Use and Global Climate Change

Principle 4 of the Rio Declaration provides that, “In order to achieve sustainable

development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it". In other words, sustainable development must simultaneously serve economic, social and environmental objectives."¹⁴⁰

That this principle has been incorporated within the provisions of both the UNFCCC and the Kyoto Protocol is significant, because it reflects the inextricable link between development, energy use and climate change.¹⁴¹ The introductory statement made at the beginning of the Third Conference of the Parties (COP-3) to the UNFCCC, at which the Kyoto Protocol was later signed, makes reference to the critical role that energy use will assume in responding to the global issue of climate change. "While energy is essential to economic development, it is also, by far, the largest source of man-made carbon dioxide emissions. For this reason, energy will play a critical part in the solution to climate change... This does not, however, require that national economic and energy needs must be sacrificed in favor of global environmental considerations."¹⁴²

Consequently, if the U.S. response to the Kyoto Protocol is to promote sustainable development, it must reflect, overall, a long-term serious attempt to begin transforming the currently entrenched U.S. fossil fuel-reliant energy infrastructure into a new more flexible, technologically advanced and GHG emission-friendly energy infrastructure.¹⁴³ And, like the Kyoto Protocol, its current prescriptions must represent only the first in a series of steps that the United States is willing to take toward addressing the problems of climate change, especially considering that concrete results (e.g., stabilization of 1990 GHG emissions) will neither be achievable nor measurable for some time.

The Bush Administration's use of a GHG intensity measurement seems to be based on a similarly broad indicator used to measure energy efficiency per unit of GDP.

In the view of some experts, "The economic logic of the Kyoto Protocol is that without such an agreement, countries will not have the proper incentives to address the threats from global climate change and therefore develop sustainably."¹⁴⁴ If this is true, the broad aim and purpose of any climate change initiative proposed by the United States in response to the Kyoto Protocol should be to provide the proper incentives to develop sustainably. An analysis of the U.S. response to the Kyoto Protocol, therefore, should not focus exclusively on the level of GHG emissions reductions to be achieved through implementation of such a climate change plan, unless this measure, alone, will determine the state of development or well-being of society. Rather, according to these same experts, "it is the quality of energy services provided and how they are used to improve people's lives that is the essential measure of well-being."¹⁴⁵ Likewise, an examination of the projected costs surrounding either the Kyoto Protocol or the U.S. response to the Kyoto Protocol should not focus exclusively on implementation costs. Instead, implementation costs should be considered along with the social, political, economic and other ancillary benefits of avoiding the harmful

effects of climate change and developing sustainability, of which there are many.¹⁴⁶ “Just as climate policies can yield ancillary benefits that improve well-being, non-climate policies may produce climate benefits.”¹⁴⁷

C. Whether the U.S. Response to the Kyoto Protocol Promotes Sustainable Development

1. Flirting With Sustainable Development

The most controversial aspect of the U.S. response to the Kyoto Protocol is its lack of a defined, mandatory national GHG emissions reduction target. While the House and Senate bills are silent with respect to this issue, the Bush plan sets forth a broad emissions reduction objective based on voluntary compliance and a projected ten year measurement of declining GHG intensity. The Bush plan imposes neither an actual fixed rate reduction of absolute GHG emissions, nor an annual GHG intensity reduction target. GHG intensity measures the ratio of GHGs to economic output expressed in terms of gross domestic product (e.g., per \$1 million of GDP).¹⁴⁸ The Bush Administration’s use of a GHG intensity measurement seems to be based on a similarly broad indicator used to measure energy efficiency per unit of GDP. However, it appears that such indicator fails to adequately consider the environmental impacts from continued economic growth.¹⁴⁹ It has been suggested that:

“The central question in the analysis of energy efficiency may really be ‘efficient with respect to what?’ Measurement of energy efficiency always relates to the specific policy objectives at stake. The appropriate indicator is dependent on the policy objective. For example, if the policy objective concerned the environment, then the intensity indicator would involve carbon [and/or carbon equivalent] emissions. From the global warming perspective, the absolute carbon emissions are obviously most important, and energy intensity is NOT relevant. On the other hand, if economic productivity is the policy objective, then energy expenditures per dollar of GDP might be a more suitable indicator.”¹⁵⁰

This analysis suggests that if the Bush Administration’s true goal is to address the environmental problem of climate change and to encourage a reduction in U.S. GHG emissions, its measurement of GHG intensity would be based upon the more appropriate ratio of GHG emissions to energy output, rather than upon the ratio of GHG emissions to economic output (GDP). Instead, the Bush plan seems to have combined these two separate ratios into one (GHG emissions relative to GDP). As a result, the goal of promoting cleaner and more efficient energy use appears secondary to the primary goal of promoting more economic production at the least energy and environmental protection cost, especially in the short term. And, so it would seem, under the Bush and House plans (in contrast to the Senate bill), that advanced technologies, especially in the near term, would be used more to develop efficient uses of conventional energy sources than to develop cleaner, more renewable and environmentally-friendly sources of energy.¹⁵¹

With environmental protection being measured relative to GDP, especially absent a sizeable and rigid GHG intensity reduction target, there is no assurance that a given

level of environmental protection (a decrease in absolute levels of GHG emissions) would be achieved.¹⁵² For example, although GHG intensity decreased over the last two decades, studies have shown that total emissions continued to rise.¹⁵³ And, at least one study has concluded that a falling GHG intensity is normal, since GDP typically rises faster than GHG emissions.¹⁵⁴ If this is true, the Bush plan's projected 18 percent GHG intensity decline for 2012, assuming a GDP growth rate consistent with the past, would appear to continue, or at the very most, slightly improve upon, the same trend of GHG intensity reductions experienced in the past, with a comparable *increase* in absolute levels of GHG emissions of approximately 12-14 percent.¹⁵⁵ Consequently, it is likely that such a target would not result in the timely development and deployment of technologies that, over time (10, 20, 30, or perhaps even 50 years) would substantially reduce the "carbon intensity" of the environment and contribute to the well-being of future generations.¹⁵⁶ Therefore, the Bush plan's voluntary GHG intensity target, barring consideration of any other aspects of the proposed U.S. response, arguably would not constitute a successful climate change strategy that is likely to promote sustainable development.

2. Invoking the Precautionary Principle, the Prevention Principle, the Principle to Enact Effective Domestic Environmental Legislation, the Principle of Sustainable Development and the Principle of Public Participation

A national 'call to arms' is clearly expressed within the many provisions of the Bush plan and the Senate Climate Change Act that address the complex issues surrounding global climate change. The significance of this expression lies in the integration of environmental protection with development, especially considering our lack of scientific certainty concerning the precise causes and magnitude of global climate change and the precise impact that GHG emissions will have upon the global environment. This renewed focus reflects that the United States has begun to satisfy the obligations imposed pursuant to the "Precautionary Principle" and the "Prevention Principle," as articulated within the Rio Declaration on Environment and Development.¹⁵⁷ The fact that many of the proposed goals and the measures selected to implement them will not have a measurable impact upon the global environment until well into the future should not detract from their importance.

The Bush plan and Senate bill (EPA 2002 and Climate Change Act) contain a plethora of programs, tax incentives and funds earmarked for scientific and applications-oriented research and development and for the expansion of voluntary public-private collaborations. These proposals are intended to promote and accelerate the development and use of breakthrough technologies that ultimately will stabilize and then reduce U.S. GHG emissions and global GHG concentrations. To achieve this end, they emphasize making conventional technologies more energy efficient and climate-friendly in the short term, and establishing a new infrastructure for renewable and clean technologies through intense research and investment, over the long-term. In effect, they demonstrate a serious attempt by the United States to encourage a paradigm shift in public behavior away from consumption toward more climate-

friendly energy use.¹⁵⁸ This approach is likely in the future to yield ancillary benefits, such as cleaner air, better health, and the creation of new paradigms, new industries, new products and new sources of employment.¹⁵⁹

In addition, the Climate Change Act and the Bush plan openly seek the creativity and expertise of the private and nonprofit sectors to assist the United States in fulfilling its global responsibility to promote GHG emission reductions.¹⁶⁰ This approach assumes, consistent with Rio Declaration, Principle 10, that “Environmental issues are best handled with the participation of all concerned citizens at the relevant level”.¹⁶¹ The Climate Change Act, for example, expresses the need to solicit private and nonprofit sector consultants, including NGOs, to assist in the development of GHG measurement and verification standards. Also, the Bush plan seeks the involvement of NGOs in debt-for-nature swaps, and endeavors to build upon existing ‘voluntary’ GHG emissions reduction agreements (legally enforceable contracts) entered into with individual companies within specific energy emitting industry sectors, pursuant to its new Climate Leaders Program.¹⁶² Apparently, experts believe that the private and nonprofit sectors will be better able to anticipate and react to future government initiatives if they are more knowledgeable about the issues surrounding global climate change. Such knowledge may even encourage them to move forward with substantial capital investments that will eventually secure significant emissions reductions.

Unlike the Kyoto Protocol, the U.S. response does not currently include a detailed proposal for emissions trading, even though economists generally agree that the ability of a tradable permit program to make pollution an ‘internal’ cost of business is actually very effective.

The combination of a mandatory and voluntary emissions reporting system subject overall to independent third party verification, in addition to the creation of a new national greenhouse database, as proposed by the Climate Change Act, recognizes that, while voluntary programs like those called for by the Bush plan can provide valuable experience for designing future efforts, a mandatory program calling for accountability is necessary to achieve the level of emission reductions that will ultimately be required. It may also serve as an eventual bridge back to the international Kyoto regime, which requires Parties to establish a national emissions monitoring system and a registry to track trades, in order to utilize the free market emissions reduction mechanisms. The higher level of scrutiny and specificity imposed upon large GHG emitters and the creation of a more rigorous voluntary reporting program that can track and verify current, as well as, previous emissions and emissions reduction data, are likely to contribute toward a long-term sustainable development goal of inventorying U.S. GHG emissions for the purpose of targeting them for reduction. Although the Climate Change Act and Bush plan take different approaches to assure compliance with these reporting requirements (the Senate plan would impose up to a \$25,000

civil penalty for each day of noncompliance and prohibit inclusion of emissions reductions credits to determine future entity baselines, while the Bush plan would focus on emissions trading credit incentives), a combined 'carrot and stick' approach, if adopted, would likely encourage the beginning of behavioral change within U.S. society that is necessary to stabilize and then reduce GHG emissions.¹⁶³

Unlike the Kyoto Protocol, the U.S. response does not currently include a detailed proposal for emissions trading, even though economists generally agree that the ability of a tradable permit program to make pollution an 'internal' cost of business is actually very effective.¹⁶⁴ The Bush plan, however, does allude to the creation of 'transferable credits' that will be given to companies that can show 'real emissions reductions' (as yet undefined), for possible use within a future market-based trading system.¹⁶⁵ And, the Climate Change Act calls for the creation of 'flexible domestic and international mechanisms', including joint implementation, emissions trading and carbon sequestration projects that will reduce, avoid and sequester GHG emissions.¹⁶⁶

Perhaps the lack of a detailed emissions trading plan within these proposals may have more to do with the fact that existing domestic emissions trading programs to date have not been designed to address an environmental challenge as scientifically, economically, and politically complex as global climate change.¹⁶⁷ Or perhaps, experts may realize that, despite its inherent flexibility, a domestic emissions trading system cannot lower the cost of securing emissions reductions significantly below the level that can be achieved in a regulatory command and control environment, unless it has been well designed.¹⁶⁸ Whatever the reason, history has shown that, in the absence of a pre-existing regulatory framework, a GHG emissions trading program within the United States will likely proceed in a gradual manner, as policy development and trading proceed concurrently rather than sequentially with each influencing the other.¹⁶⁹ That the Bush plan refers to and the Climate Change Act calls for a future domestic GHG emissions (credits) trading system, however, signifies the potential for a very different outcome, one in which the United States, consistent with the Kyoto Protocol, has officially begun to consider how to properly design such a program. This, in turn, will further the U.S. long-term goal of promoting market efficiencies that ultimately will lead to absolute GHG emission reductions.¹⁷⁰

In contrast, the House energy bill's emphasis on exploiting 'known technological options' and on production and production-related tax incentives, is intended to retard the change of our country's current energy infrastructure, which is comprised of two major energy systems that have very little overlap.¹⁷¹ It is also intended to minimize the significant short-term economic and social costs, including the industry sector dislocation and unemployment that the U.S. economy is likely to suffer during the transition from one energy mix to another.¹⁷² Because the House energy bill focuses on creating domestic future well-being at the short term expense of the global atmosphere, given that many of the House bill's production incentives will likely encourage resource intensive production patterns that will, in the short term, increase U.S. GHG emissions, the House energy bill would appear to ignore and violate all of

the abovementioned principles, and therefore fail to promote sustainable development. At the very least, it would contravene both the spirit and letter of Article 2 of the Kyoto Protocol, which defines the promotion of fiscal and tax incentives and subsidies in all GHG emitting sectors as running counter to the concept of sustainable development.¹⁷³ The important question, however, is whether the overall long-term strategic U.S. vision of which the House bill is a part, would lead to future intergenerational and intra-generational well-being.

3. Invoking the Principle of Common But Differentiated Responsibilities, the Principle of Intergenerational and Intra-generational Equity, the Principle of Exchanging Scientific and Technological Know-how and the Principle of Global Cooperation

It would appear, that the programs designed to foster international cooperation and a greater understanding of issues relating to global climate change established and/or expanded by the Bush plan and Senate Climate Change Act, can help to improve the economic and environmental well-being of persons living within both the developed and developing worlds, taking into account the needs and capabilities of each of the parties.¹⁷⁴ These initiatives include the joint international climate action and scientific partnerships with Central America, Italy, Japan, and Australia (and soon, possibly Canada), and the Tropical Forest Conservation Act partnerships with Bangladesh, Belize, El Salvador, Thailand (and now Peru). They also include the Climate Change Act's proposed pilot program to provide financial assistance to U.S. firms that undertake "qualifying international energy deployment projects" in developing countries and countries in transition, as well as, the Clean Energy Exports Program, which is intended to facilitate the transfer of U.S. clean energy technology to developing countries and countries in transition that are expected to experience significant GHG emissions growth within the next 20 years. Consistent with the mandate of the Kyoto Protocol and the Marrakech Agreement, these technology transfer initiatives, made possible by the abundant resources of the United States, over time, can potentially help to promote endogenous capacity-building.¹⁷⁵ In addition, these policies can possibly help to provide the necessary financial and technological incentives for the developing world to begin altering its current GHG emitting behavior, and thereby contribute to the stabilization, and later, the reduction of global GHG emissions.¹⁷⁶ This type of cooperative approach could eventually encourage specific developed and developing countries to assume their 'common yet differentiated responsibilities' and to join the United States in beginning to fulfill their shared responsibility to protect the global atmosphere.

V. CONCLUSION –THE U.S. RESPONSE TO THE KYOTO PROTOCOL, WHILE FLAWED, IS A GOOD BEGINNING

While certain aspects of the proposed U.S. response to the Kyoto Protocol can fairly be said to represent a "new beginning" concerning the U.S. attitude and behavior towards the long-term problem of global warming and climate change, other aspects

of the response continue to focus on short-term energy needs to the detriment of the global environment. It is therefore uncertain whether the U.S. proposal, in its totality, will ultimately promote sustainable development in the context of global climate change within the foreseeable future. Much will depend, instead, on whether these proposals, like the provisions of the Kyoto Protocol, represent only the first of many steps directed at stabilizing global GHG emissions. At present, the U.S. proposal is as impalpable as the Kyoto Protocol, since in neither case has anything of substance materialized – few, if any, truly revolutionary technologies have been developed and transferred, and few, if any, significant GHG emissions reductions have been registered and inventoried. What appears most certain is that each climate change regime probably best reflects the needs and special circumstances of its participants. If sustainable development is as much an aspiration as it is an objective, there is, no reason why these two regimes cannot operate, at least in the near future, in both a concurrent and interactive manner.

At present, the U.S. proposal is as impalpable as the Kyoto Protocol, since in neither case has anything of substance materialized.

VI. LOOKING TOWARD THE FUTURE

However flawed the proposed U.S. response to the Kyoto Protocol may be, it does, at least, set forth goals that the United States believes it can realistically achieve. And it is precisely this issue that other developed nations are now debating as they decide whether to ratify the protocol.

For example, Canadian news media recently reported that Canada might join the United States and pull out of the Kyoto Protocol, despite the government's recent disclosure of a four-part action plan to meet its Kyoto obligations.¹⁷⁷ It was noted, that even if Canada chose to ratify, it "has little chance of fulfilling its Kyoto commitment to cut emissions of the greenhouse gases blamed for global warming by 6 percent from 1990 levels by 2010. Recent estimates show the country's emissions actually grew by 20 percent from 1990 to 2000."¹⁷⁸

Furthermore, notwithstanding Japan's ratification of the Kyoto Protocol, on June 4, 2002, recent media reports indicate that the Japanese legislature continues to wrestle with the details of a domestic bill to revise the nation's global warming prevention law.¹⁷⁹ The press has criticized the centerpiece of the bill, entitled the 'Kyoto Objective Achievement Plan', as lacking 'bite' as well as public support:

"While long on ideas, it is short on incentives and implementation details – both essential for reducing emissions...Actual domestic cuts total 4.4 percent of the 6 percent required, with the bulk of cuts – nearly 90 percent – to be amassed by using controversial 'sinks' or the carbon-absorbing properties of forests. The remaining

1.6 percent is ostensibly to come from "Kyoto Mechanisms"...A glaring omission in the plan is the role of economic instruments. Industry opposition and inter-ministry differences of opinion effectively have kept any carbon tax or emissions trading initiative from making it into the scheme...What is clear is that government figures are premised on boosting nuclear power by 30 percent over current levels as well as having up to 13 new nuclear power plants on line by 2012. Given current public sentiment, this seems improbable...No mechanism exists to guarantee cuts of any kind, nor even to require that companies keep tabs on emissions, let alone report or make them public".¹⁸⁰

In addition, on June 5, 2002, Prime Minister John Howard informed the Australian Parliament that Australia, the world's largest exporter of coal, would not ratify the Kyoto Protocol. He asserted that, "It is not in Australia's interests to ratify. For us to ratify the protocol would cost us jobs and damage our industry. That is why the Australian government will continue to oppose ratification".¹⁸¹ The Australian government had been undecided about whether it would join the list of countries that previously ratified the Kyoto Protocol, since its February 28, 2002 signing of a bilateral agreement with the U.S. on climate change.¹⁸²

That Canada, Australia and Japan are now experiencing these domestic climate change debates is highly significant. Without the United States and Australia, virtually every other industrial country must ratify the Kyoto Protocol in order for it to become binding international law.¹⁸³

Assuming that most of the features contained within the proposed U.S. response to the Kyoto Protocol survive the upcoming Congressional Conference Committee debates, and are then signed into law by the President, the development of a parallel U.S. domestic GHG system, which includes emissions trading, would most likely follow. At least one study has concluded, that even if the United States remains outside the Kyoto regime, U.S. companies may still be able to gain access to emissions reductions generated within a developing country Kyoto party for purposes of compliance with a U.S. domestic emissions limit. Emissions reduction credits can be obtained in one of two ways using the unilateral CDM mechanism allowed by the Marrakech Agreement. U.S. buyers, for example, can purchase marketed emissions reduction credits from willing developing country sellers. Since developing countries do not have national emissions reduction obligations, such sales would not directly affect the integrity of the Kyoto Protocol's 'Annex B' emission caps.¹⁸⁴ Alternatively, U.S. companies may simply engage in clean development projects directly with a willing developing country Kyoto party in order to secure its share of certified emission reductions. Whether such a parallel U.S domestic GHG system will succeed on its own, be integrated into the Kyoto regime, or perhaps, even evolve into a separate 'JUSCANZ' GHG system, will depend on the actions taken today and in the foreseeable future.

Notes

¹ Global Climate Change Policy Handbook, Executive Summary p.1 at www.whitehouse.gov/news/releases/2002/02/climatechange.html; "Building Institutions for a Better Environment", Economic Report of the

President – 2002, Chapter 6, p.2.

² David Hunter, et. al., “U.S. Rejection of Kyoto Protocol Process”, *International Environmental Law*, p. 647. Article 25 of the Kyoto Protocol to the United Nations Framework Convention on Climate Change (“The Kyoto Protocol”) provides that the protocol will enter into force only after fifty-five states ratify or adhere to it, on the condition that those states account for at least 55 percent of the total 1990 carbon dioxide emissions of developed states.

³ The Administration’s reasoning apparently was based on the text of S. Res. 98 (the “Byrd-Hagel Resolution”), introduced by Senators Byrd and Hagel, along with 64 co-sponsors, and passed by the Senate pursuant to a vote of 95-0, on July 25, 1997. The non-binding but influential resolution was, in large part, responsible for the Kyoto Protocol not being submitted by former President Clinton to the Senate for ratification. The resolution appeared within S.1132, which was later adopted by the House in H.R. 4761.

⁴ S.517, the National Laboratories Partnership Improvement Act of 2001, among other things, authorized funding the Department of Energy to enhance its mission areas through technology transfer and partnerships for fiscal years 2002 through 2006.

⁵ SA No. 2917 to S. 517 was originally sponsored by Senator Tom Daschle (D.SD) and was submitted and proposed on February 15, 2002, the day following the announcement of the President’s plan. Since then, multiple amendments have been made to SA No. 2917. The climate change provisions contained within SA No. 2917, in particular, have since been amended by SA No.3231 and S.A. No. 3239. SA No. 3231 was proposed by Senator Jeff Bingaman (D.NY) on April 22, 2002, and was approved, as modified, on April 23, 2002. (Congressional Record, CR S3047-3054, and CR S3145-3147. See, also: Bingaman Modified Amendment No. 3231 (to Amendment No. 2917), to clarify the structure for, and improve the focus of, global climate change science research. (Congressional Record, April 23, 2002), at www.legislative.noaa.gov/climatechangeamendmenttoenergybill042302.html. SA No. 3239 significantly altered the climate change provisions within S.A. 2917. SA No. 3239, as modified, was approved on April 25, 2002. (Congressional Record, CR S3394-3395 and CR S3354-3357). The ultimate form that the Senate’s U.S. Climate Change plan will assume remains uncertain, considering that it must still survive future House-Senate Conference Committee hearings where it will be reconciled with other competing House bill provisions.

⁶ S.1979 was originally proposed by Senator Max Baucus (R. MT). An explanation of its provisions can be found within Senate Finance Committee Report 107-140. S. 1979 was reported to the Senate on February 13, 2002, and was subsequently placed on the Senate Legislative Calendar for debate on March 1, 2002. It appears that S. 1979 morphed into SA No. 3231 (See: CR S3083 – CR S3105) on April 22, 2002, and later into SA No. 3286 on April 23, 2002. See, also: Senate Colloquy for “Amendment No. 3286 To Amendment No. 2917 to S.517, “Purpose: To Provide Energy Tax Incentives”, p. CR S3117 (April 23, 2002). The energy tax incentives were recently proposed and approved as Amendment No. 3286 to SA No. 2917, on April 23, 2002, and are now contained within the final Senate bill. A more detailed summary of the legislative proposals submitted by members of the 107th Congress (2000-2002) regarding global climate change, can be found on the website of the Pew Center of Global Climate Change, at www.pewclimate.org/policyguide/cong_chart_update.cfm.

⁷ The final Senate bill was approved by an overwhelming margin of 88-11. The language of S.517 was subsequently incorporated into H.R. 4 as an amendment. It is now referred to as, amended H.R. 4. See: “S.517, Bill Summary & Status for the 17th Congress”, at www.senate.gov; Shailagh Murray, “Energy Bill Moves Ahead in Senate – Use of Renewable Sources To Rise but Measure Has Few Domestic Oil Incentives”, *Wall Street Journal*, p. A4 (4/26/02); Helen Dewar, “Senate Approves Energy Measure – Scaled-Back Bill Pushes Conservation”, *Washington Post*, p. A1 (4/26/02), at www.washingtonpost.com; David E. Rosenbaum, “Senate Passes an Energy Bill Called Flawed by Both Sides”, *New York Times* (4/26/02), at www.nytimes.com.

⁸ Division D – Integration of Energy Policy and Climate Change Policy, Title X – Climate Change Policy, Title XI – National Greenhouse Gas Database, and Title XIII – Climate Change-Related Research and Development, of SA No. 2917 to S.517, as adopted by H.R. 4 .

⁹ “Guide to the Climate Change Negotiation Process”, p.1, at <http://unfccc.int>.

¹⁰ The United Nations Framework Convention on Climate Change, Art.2.

¹¹ Statement by Robert Priddle, Executive Director Int’l Energy Agency, Paris, to the Third Session of the Conference of the Parties to the U.N. Framework Convention on Climate Change (COP-3).

¹² Gareth Porter, Janet Welsh Brown and Pamela S. Chasek, *Global Environmental Politics*, Third Edition, pp.23-25, (Westview Press 2000).

¹³ The United States is the world’s largest emitter of GHGs, accounting for roughly 25 percent of global emissions. “The U.S. Domestic Response to Climate Change: Key Elements of a Prospective Program”, Pew Center on Global Climate Change (August 2001). The United States is a major source of anthropogenic (man-

made) GHG emissions primarily because our economy is the largest in the world. The U.S. produces this magnitude of emissions, with less than 5 percent of the world's population, but about a quarter of world gross domestic product (GDP). "Greenhouse Gases, Global Climate Change, and Energy", p.2, (Energy Information Administration, U.S. Department of Energy) at www.eia.doe.gov.

¹⁴ This group, which also included New Zealand, was referred to as the 'JUSCANZ' countries. During the negotiations, the United States was concerned that the Europeans had an unfair economic advantage in complying with any emissions standards. As a negotiating tactic, it indicated that it was considering the creation of a separate GHG trading regime that included these countries. As of June 4, 2002, New Zealand remains undecided about whether to ratify the Kyoto Protocol. It seems likely, however, that Australia's rejection of the protocol will have an influence upon New Zealand's decision.

¹⁵ As of June 4, 2002, following the ratification of the protocol by the European Union and all fifteen of its member states, seventy-four (74) of the eighty-four (84) countries that signed the Kyoto Protocol have ratified or acceded to it. However, these countries together account for only 35.8% of the total 1990 carbon dioxide emissions of developed states. See: "The Convention and the Kyoto Protocol, List of Signatories & Ratification to the Kyoto Protocol", at <http://unfccc.int/resource/convkp.html>. The fifteen European Union members formally ratified the Kyoto Protocol at the United Nations on June 1, 2002. U.N. Secretary General Kofi Annan applauded the action as "good news for the entire world". "Kyoto Pact Ratified by EU, Japan; U.S. Still Intransigent", Reuters, Business World Internet Edition (June 6, 2002) at <http://bworld.net/current/TheEnvironment/envistory2.html>; "U.S. Attached as EU Ratifies Kyoto", CNN.com., (June 1, 2002) at <http://europe.cnn.com/2002/WORLD/europe/0601/kyoto.eu/index.html>.

¹⁶ William Moomaw, Kilparti Ramakrishna, Kevin Gallagher and Tobin Freid, The Kyoto Protocol: A Blueprint for Sustainable Development, 4 *Journal of Environment and Development* 82, at p.89 (March 1999).

¹⁷ Kyoto Protocol, Art. 3(1). This projection assumes that the Parties are able to meet the protocol's standards, which some commentators believe is highly doubtful considering current consumption patterns. In any event, this 5% projected reduction in GHG emissions is only a small down payment on the reductions that will ultimately be required. The Second Assessment Report of the IPCC calculates that reductions of 70% to 90% of 1990 global carbon dioxide emissions will ultimately be required IF we wish to *stabilize* atmospheric concentrations at levels that will induce less severe changes in the climate system in the future. Moomaw, Ramakrishna, Gallagher and Freid., at p.89. Scientists nevertheless remain uncertain about the precise carbon dioxide concentration level at which severe climate changes will begin to stabilize.

¹⁸ Kyoto Protocol, Annex B. Based on projections of the growth of emissions using current technologies and processes, the reduction in GHGs required of the U.S. would likely be between 20% and 30% below where it would be otherwise by the 2008-2012 budget period. It is thus questionable whether the 7% emission reduction target level could ever be achieved even if sinks are counted and one or more of the Kyoto mechanisms are utilized. Susan R. Fletcher, "CRS Report for Congress 98-2: Global Climate Change Treaty: The Kyoto Protocol" (March 6, 2000).

¹⁹ Kyoto Protocol, Annex A.

²⁰ Kyoto Protocol, Art. 2(1)(a) and 2(1)(b). 'Annex I countries' as defined by the UNFCCC, are the industrialized countries, including the countries in transition to a market economy, namely the nations of Eastern Europe and the former Soviet Republic. 'Annex II countries' as defined by the UNFCCC, are the industrialized countries exclusively. 'Annex B countries' as defined by the Kyoto Protocol, are those countries subject to a binding greenhouse gas emissions limitation pursuant to the protocol. They are the same nations listed in Annex I of the UNFCCC, except for Belarus and Turkey.

²¹ Kyoto Protocol, Art. 2(1)(a)(i),(ii) and (iv); .Moomaw, Ramakrishna, Gallagher and Freid at p.84.

²² Kyoto Protocol, Art. 6(1)(d), Art.12 , Art.17.

²³ Kyoto Protocol, Art. 16.

²⁴ Moomaw, Ramakrishna, Gallagher and Freid at pp.85-86.

²⁵ Kyoto Protocol, Art. 6.

²⁶ Moomaw, Ramakrishna, Gallagher and Freid at pp.86-87.

²⁷ *Ibid*, p.86.

²⁸ Kyoto Protocol, Art.12.

²⁹ Kyoto Protocol, Art. 12(6); Moomaw, Ramakrishna, Gallagher and Freid at p.85.

³⁰ "Climate Talks in Marrakech – COP7: News and Information", pp.2-3, Pew Center on Global Climate Change (October 2001); "Climate Talks in Marrakech – COP7: Update, November 9, 2001 – Final Analysis", p.3, Pew Center on Global Climate Change (November 2001).

³¹ The Bonn Agreement defined the kinds of sink activities that are eligible for emissions credits and for forest management, and set country-specific caps for each Annex I country. They include: forest management, cropland management and re-vegetation. There is no overall cap on sink credits. For forest management, however, countries are assigned specific upper limits on the amounts that can be credited against their emissions targets. Sink projects also will be allowed under the CDM, but will be limited to 'afforestation and reforestation projects', and will be capped at 1% of a country's base year emissions. "Climate Talks in Marrakech – COP7: News and Information", p.2, Pew Center on Global Climate Change (October 2001).

³² "Climate Talks in Marrakech – COP7: News and Information", pp.2-3, Pew Center on Global Climate Change (October 2001); "Climate Talks in Marrakech – COP7: Update, November 9, 2001 – Final Analysis", p.3, Pew Center on Global Climate Change (November 2001).

³³ "Climate Talks in Marrakech – COP7: Update, November 9, 2001 – Final Analysis", p.2, Pew Center on Global Climate Change (November 2001).

³⁴ *Ibid.*, p.3.

³⁵ "Climate Talks in Marrakech – COP7: News and Information", p.2, Pew Center on Global Climate Change (October 2001).

³⁶ Arguably, certain norms of international law are so important that a state owes a duty to obey those norms to the international community as a whole, rather than to individual states, including obligations 'erga omnes' (of all to all), pursuant to which all states, even those not injured in the traditional sense, may bring a complaint based on a violation of a global obligation. Barcelona Traction, Light and Power Co., Ltd. (New Application 1962). The International Law Commission has endorsed the idea that obligations *erga omnes* include obligations "of essential importance for the safeguarding and preservation of the human environment." U.N.GAOR, 31st Session.

³⁷ IUCN Draft Covenant on Environment and Development, Art. 3 (1995); David Hunter, et al., *International Environmental Law*, p. 345.

³⁸ "Prosperity...allows us to commit ever-increasing resources to environmental protection and to the development of science and technology that will lead to both future growth and a better environment...Empirical evidence suggests that growth eventually goes hand in hand with environmental improvements". "Building Institutions for a Better Environment", *Economic Report of the President – 2002*, Chapter 6, p.2.

³⁹ *Global Climate Change Policy Handbook*, Executive Summary p.1. "We are uncertain about the effect of natural fluctuations on global warming. We do not know how much the climate could or will change in the future. We do not know how fast climate change will occur, or even how some of our actions could affect it. Finally it is difficult to say with any certainty what constitutes a dangerous level of warming that must be avoided". "Building Institutions for a Better Environment", *Economic Report of the President – 2002*, Chapter 6, p.17, at <http://w3.access.gpo.gov/eop/index.html>.

* Recently, the Bush Administration, pursuant to its obligations under the UNFCCC, submitted its third climate action report, "U.S. Climate Action Report 2002", to the United Nations. The 269 page report provides an update on key activities conducted by the U.S. since the submission of its second report in 1997, an inventory of U.S. GHG emissions and sinks, an estimate of the effects of mitigation measures and policies on future emissions levels and a description of U.S. involvement in international programs. It also discusses U.S. national circumstances that affect U.S. vulnerability and responses to climate change, as well as information on U.S. climate research, observation and adaptation programs. See: *Federal Register Notice*, Vol. 66, No. 221, pp. 57456-57 (Nov. 14, 2001) [FR Doc. 01-28736]. With respect to the latter subject matter, the report: 1) identifies human activity in the U.S. as the cause of much of the increase in greenhouse gas concentrations in the U.S.; 2) confirms that increased GHG concentrations are indeed causing 'real' global warming and climate change in the U.S.; and 3) details how global warming will impact the U.S. population (health) and the U.S. environment. The report, which was authored by the Environmental Protection Agency and posted on the agency website on June 1, 2002, concludes that, of the GHGs that are directly influenced by human activity, the most important are carbon dioxide (the primary source of which is fossil fuel burning), methane, nitrous oxide, ozone and chlorofluorocarbons (CFCs). The report indicates that, "as a result of human activities, surface air temperatures and sub-ocean temperatures in the U.S. will continue to rise through the 21st century, with resulting increases in rainfall rates and increased susceptibility of semi-arid regions to drought." While the precise impacts of global warming will vary (and may include some short-term benefits), it is certain that: 1) many natural ecosystems, such as coral reefs, alpine meadows and southeastern forests will be endangered; 2) infrastructure damage is likely to result from permafrost melting in Alaska and from sea level rise and storm surges in low-lying coastal areas; and 3) the effects of air and water pollution on the environment and human health are likely to be magnified. The report concludes that adaptation is likely to help protect much of the U.S. population. "Maintenance of our nation's public health and community infrastructure, from water treatment

systems to emergency shelters, will be important for minimizing the impacts of water-borne diseases, heat stress, air pollution, extreme weather events, and diseases transmitted by insects, ticks, and rodents.” See: “Third National Communication of the United States of America under the United Nations Framework Convention on Climate Change, Chapter 6: Impacts and Adaptation; Appendix D, Climate Change Science: An Analysis of Some Key Questions”, at www.epa.gov/globalwarming/publications/car/. Several recent news articles and editorials have focused on this portion of the report. See: John Heilprin, “White House Warns on Climate Change”, AP, [washingtonpost.com](http://www.washingtonpost.com), (June 4, 2002) at <http://www.washingtonpost.com>; Andrew C. Revkin, “Climate Changing, U.S. Says in Report”, The New York Times on the Web (June 3, 2002) at <http://www.nytimes.com/2002/06/03/science>; “Bush Dismisses EPA Report on Climate Change”, AP, CNN.com (June 4, 2002) at <http://www.cnn.com/2002/ALLPOLITICS/06/04/bush.climate.change.ap/index.html>; Bob Herbert, “Ignoring a Growing Peril”, The New York Times on the Web (June 6, 2002) at <http://www.nytimes.com/2002/06/06/opinion>; Editorial, “Crossroads on Global Warming”, The New York Times on the Web (June 3, 2002) at <http://www.nytimes.com/2002/06/03/opinion>; Eileen Claussen, “The Global Warming Dropout”, The New York Times on the Web (June 7, 2002) at <http://www.nytimes.com/2002/06/07/opinion>.

⁴⁰ In terms of emissions, the goal is to reduce the estimated 183 metric tons of emissions per million dollars of GDP emitted today, to 151 metric tons per million dollars of GDP in 2012, through current and new methods. Cumulatively over the ten-year period, more than 500 million metric tons of GHGs will be prevented from entering the atmosphere. Global Climate Change Policy Handbook, Executive Summary, p. 2.

⁴¹ Global Climate Change Policy Handbook, pp. 6-7. It is arguable that the notion of “GHG intensity”, as articulated by the Bush plan, runs counter to the concept of sustainable development which, by definition, seeks to prevent the decoupling of the economy from the environment. According to environmental economists, the failure to include within the price of goods and services the associated social and environmental costs incurred to produce such goods and services, is a classic ‘externality’ that results in pricing distortion and the continued exploitation of the environment.

⁴² Ibid. According to the Bush plan, “forecasts of the average reductions required by nations implementing the Kyoto Protocol range from zero to 7 percent...Our goal translates into a 4.5 percent reduction beyond forecasts of the progress that America is expected to make based on existing programs and private activity”. Ibid.

⁴³ Although businesses can already register emission reductions under Section 1605(b) of the 1995 Energy Policy Act, participation has been limited. Proposed improvements to this program include enhancement of measurement accuracy, reliability and verifiability. It should recognize reductions achieved through capture and sequestration projects, mitigation projects that increase energy efficiency and/or switch fuels, and process changes to reduce emission of potent GHGs, such as methane. Global Climate Change Policy Handbook, pp. 7-8.

⁴⁴ Ibid.

⁴⁵ Ibid. Such a market does not yet exist, though several studies suggest how such a market can successfully be established.

⁴⁶ Existing specific industry sector challenges include: 1) The New PFC Reduction Climate Partnership Agreement, between the EPA and the Semiconductor Industry Association; 2) The Voluntary Aluminum Industrial Partnership entered into by twelve of the thirteen U.S. primary aluminum producers; 3) EPA’s Natural Gas STAR Program, participated in by companies engaged in U.S. natural gas production, transmission pipelines, distribution service connections, and processing; 4) EPA’s Coalbed Methane Outreach Program; 5) Ag-STAR Program and the Ruminant Livestock Efficiency Program (a partnership between the USDA and EPA); and 6) The Combined Heat and Power Partnership, between the EPA and 17 Fortune 500 companies, city and state governments and nonprofits, committed to reducing carbon dioxide. Global Climate Change Policy Handbook, pp. 13-14.

⁴⁷ Global Climate Change Policy Handbook, p.13. The following companies have voluntarily agreed to participate in this program: Florida Power and Light, GM, Lockheed Martin, Miller Brewing Co., Bethlehem Steel, Interface Inc., SC Johnson and Holcim Inc.

⁴⁸ Global Climate Change Policy Handbook, p.9.

⁴⁹ The \$4.6 billion of proposed tax incentives are described in more detail within pages 10-12 of the Global Climate Change Policy Handbook.

⁵⁰ Proposed funding of \$1.7 billion will permit the CCRI to improve the integration of scientific knowledge, including measures of uncertainty, into effective decision support systems, and will adopt performance metrics and deliverable products useful to policymakers in a short (2-5 year) timeframe. Ibid. pp.24-25.

⁵¹ Approximately, \$1.3 billion will be committed to this endeavor. Among its objectives, are: a) the evaluation of the state of U.S. climate technology; b) the development of advance mitigation technologies that offer the

greatest promise for low cost reductions of GHG emissions; and c) the development of opportunities to enhance private-public partnerships in applied research and development to expedite innovative and cost-effective approaches to reducing GHG emissions. *Ibid.*, pp. 25-26.

⁵² The U.S. and Italy identified more than 20 joint climate change research activities for immediate implementation during a January 2002 meeting in Rome. *Ibid.*, p.5 and p.18. On June 7, 2001, the U.S. and the Central American Heads of Government expanded and renewed the Central American-United States of America Joint Accord (CONCAUSA).

⁵³ See: "U.S., Japan Agree on Possible Joint Climate Change Project" (770), Statement of the Science and Technology Working Group of the U.S.-Japan High Level Consultations on Climate Change, U.S. State Department Washington File, International Information Programs (March 1, 2002) at <http://usinfo.state.gov>; "U.S., Japan Consult on Climate Change Cooperation" (880), Second Meeting of the U.S.-Japan High-Level Consultations on Climate Change, U.S. Department Washington File, International Information Programs (April 6, 2002) at <http://usinfo.state.gov>.

⁵⁴ On February 28, 2002, the Bush Administration executed a partnership agreement on climate change with Australia. "U.S., Australia to Set Up Climate Action Partnership" (410), U.S. Department of State, International Information Programs (February 27, 2002) at <http://usinfo.state.gov>.

⁵⁵ Approximately \$40 million will be budgeted for such programs; David Malin Roodman, "Ending the Debt Crisis", *State of the World, 2001* (Lester Brown et al., eds. 2001), p.160; The Tropical Forest Conservation Act ("TFCA") program offers eligible countries the opportunity to reduce their debt to the United States while preserving their tropical forests. Grants from the local fund can be used to support a wide range of activities, such as: 1) training persons and organizations involved in forest conservation; 2) restoration of forested areas; and 3) protection of parks and other protected areas. TFCA agreements have already been negotiated by the Bush Administration with Bangladesh, Belize, El Salvador and Thailand. *Global Climate Change Policy Handbook*, at pp.18-19. Recently, the U.S. entered into a debt-for-nature agreement with Peru. "U.S.-Peru Debt Agreement to Protect Biodiversity, Tropical Forests", (410) Washington File, (March 24, 2002) at www.usinfo.state.gov.

⁵⁶ Article 3 of the UNFCCC requires developed country Parties to provide new and additional financial resources to meet the agreed full costs incurred by developing country Parties in fulfilling their responsibilities under the convention. In addition, they shall also provide such financial resources, including for the transfer of technology, needed by the developing country Parties to meet the agreed full 'incremental costs' of implementing such measures.

⁵⁷ The goal of such activities is to encourage the accelerated adoption of energy efficiency and renewable energy technologies and practices. *Global Climate Change Policy Book* at p. 22.

⁵⁸ The aim of the bill is to reduce the U.S. dependence on foreign energy sources from 56 percent to 45 percent by January 1, 2012, and to reduce U.S. dependence on Iraqi energy sources from 700,000 barrels per day to 250,000 barrels per day by January 1, 2012. Summary of H.R. 4, as of 8/10/01.

⁵⁹ Division A, Title I, Subtitle A. Such programs include, among others: 1) promotion of export of energy efficient products; 2) energy conservation standards for new buildings; 3) the Federal Energy Management Program; 4) energy efficient lighting and building centers; 5) energy efficiency labeling for windows and window systems; and 6) energy efficiency for commercial office equipment.

⁶⁰ Division A, Title I, Subtitle B, Sec. 121-126. "The Energy Advancement and Conservation Act of 2001". The Act essentially prescribes implementation guidelines for: 1) Federal agency acquisition of only Energy Star products; and 2) metering and sub-metering of all energy-using Federal buildings.

⁶¹ Division A, Title I, Subtitle D, Sec. 141A-143. The program, among other things, directs each agency to promote Energy Star compliant technologies as the preferred technologies for achieving energy efficiency and pollution reduction.

⁶² Summary, Division B, "The Comprehensive Energy Research and Technology Act of 2001". Title I, "Energy Conservation and Energy Efficiency"; Title I, Energy Conservation and Energy Efficiency, Subtitles F and G; Title II, Renewable Energy, Subtitles B and D; Title III, Nuclear Energy, Subtitles A-C; Title IV, Fossil Energy, Subtitles A-D; Title V, Science, Subtitle A, Fusion Energy Sciences, Subtitles B and D.

⁶³ Title I. The many provisions relating to energy conservation focus on promoting renewable energy sources. They include: 1) an extended period during which credits may be obtained for investments made in "wind facilities" and "closed-loop biomass facilities" (*Ibid.*, Title I, Sec. 3102); 2) a 10% credit of up to \$1,000 for each kilowatt of capacity, for the purchase of "qualified stationary fuel cell power plants" (*Ibid.*, Sec. 3103); 3) a \$4,000 to \$40,000 credit for purchasers of "qualified fuel cell motor vehicles" (*Ibid.*, Sec. 3104(a)); 4) a \$250 to \$10,000 credit for purchasers of "qualified hybrid motor vehicles" (*Ibid.*, Sec. 3104(b)); 5) a credit equal to 50% of the excess cost of purchasing a "qualified alternative fuel motor vehicle" (*Ibid.*, Sec. 3104(c)); 6) a

\$1,000 to \$3,500 credit for purchasers of “advanced lean burn technology motor vehicles” (Ibid., Sec. 3104(d)); 7) up to a \$2,000 credit for purchasers of “qualified energy efficiency home improvements, including photovoltaic property expenditures and qualified solar water heating property expenditures” (Ibid., Sec. 3108, 3109); and 8) a 10% credit for purchasers of combined heat and power property (Ibid., Sec. 3113).

⁶⁴ Division C, “The Energy Tax Policy Act of 2001”, Title II. Other tax incentives encourage reliability, such as the current deduction by small business refiners of up to 75 percent of the costs paid or incurred for the purpose of complying with the EPA highway Diesel Fuel Sulfur Control Requirements. (Ibid., Sec. 3204).

⁶⁵ Division C, “The Energy Tax Policy Act of 2001”, Title III. Some tax provisions encourage energy production, such as the current deduction of “delay rental payments” incurred in connection with the development of oil or gas within the U.S., and of geological and geophysical costs incurred in connection with oil and gas exploration in the U.S. (Ibid., Sec. 3303). Furthermore, while encouraging increased energy production, some tax incentives reward the use of “environmentally clean” technologies, such as the 10% investment tax credit for qualified investments in clean coal technology, and the production credit for producing electricity from a qualified advanced clean coal technology electricity generation unit. (Division C, “The Energy Tax Policy Act of 2001”, Title I, Sec. 3117 and 3118). The emphasis placed on ‘clean coal technology’ by the House bill, must be viewed in light of the existing national energy infrastructure and the ready availability of inexpensive coal as an energy resource. The “Clean Coal Power Initiative Act of 2001”, for example, calls for research on and development, demonstration, and commercial application of clean coal technologies, and other specified coal and related technologies. Ibid.

⁶⁶ The final Senate bill (Amendment No. 2917, as amended, to S.517) was approved by an overwhelming margin of 88-11. The language of S.517 was subsequently incorporated into H.R. 4 as an amendment. It is now referred to as amended H.R. 4.

⁶⁷ The energy provisions of the Senate bill are contained within the “Energy Policy Act of 2002” (‘EPA 2002’).

⁶⁸ See: Seth Dunn, “Decarbonizing the Energy Economy”, State of the World 2001, pp.83-102, (Lester Brown, et al., eds. 2001).

⁶⁹ EPA 2002 – Highlights Division E, Enhancing Research, Development and Training, Title XII-Energy Research and Development Programs, Subtitle A-Energy Efficiency, Sec. 1211-1214; Subtitle B-Renewable Energy, Sec. 1221-1223; Subtitle C-Fossil Energy, Sec. 1231-1236; Subtitle D-Nuclear Energy, Sec. 1241-1245.

⁷⁰ This portion of the bill, which was championed by Senator John Kerry (D. MA), sought to raise the CAFÉ standards from the current 24 mpg to 36 mpg. It was soundly defeated on March 13, 2002, by a vote of 62-38. Pursuant to SA No. 2997 to SA No. 2917, approved on March 13, 2002, Republicans and Democrats instead agreed to a compromise amendment that gives the Transportation Department the *option* of raising the CAFÉ standards for cars and some light trucks within the next two years. Any changes would have to take 13 criteria into account, including impacts on safety and employment. John J. Fialka and Norihiko Shirouzu, “Senate Kills Effort to Raise Cars’ Fuel Efficiency”, p.A2 (Wall Street Journal, 3/14/02).

⁷¹ EPA 2002 – Division E, Title IX. These initiatives include: 1) requiring higher fuel efficiency in future Federal purchases of autos for civilian use; 2) saving 16 trillion BTUs of energy each year in federal buildings; 3) encouraging a 25 percent increase in industrial energy efficiency over 10 years; 4) setting new efficiency standards for commercial and consumer products to save over 13 quadrillion BTUs of energy by 2020; and 5) increasing federal investment in research and development on energy efficiency. See: SA No. 3000 to SA No. 2917, approved March 13, 2002.

⁷² Seth Dunn, “Decarbonizing the Energy Economy”, State of the World 2001, p.91, (Lester Brown, et al., eds.).

⁷³ EPA 2002 — Division E, Title XII, Summary.

⁷⁴ Another portion of the Energy Policy Act 2002 focuses on improving the productivity of the U.S. electric transmission system. Among other things, it seeks to: 1) clarify the roles of the Federal Energy Regulatory Administration (“FERC”) and the States in regulating electricity through fair and consistent rules; and 2) provide FERC with the tools to ensure that *competitive electricity markets* work well to provide consumers with affordable energy, including tools that will provide more transparent information *on trading in energy markets* (a key flaw highlighted by the Enron collapse) and tools to protect against monopolies as energy companies restructure over the next several years. Ibid. See: Mitchell Benson, Chip Cummins and Jathon Sapsford, “Trade Disclosures Shake Faith in Damaged Energy Market”, pp. A1, A8 (Wall Street Journal, 5/13/02). Recently, FERC announced its intent to create mandatory rules for the nation’s electricity markets that should be finalized this summer after public comment. If passed as currently envisioned, the rules would formalize what had been a largely voluntary system that required energy-industry cooperation. See, also: Rebecca Smith, “FERC Plans Rules for Electricity Markets – The Stage is Set for Battle With States, Big Utilities Asked to Cede Control”, p.A2

(Wall Street Journal, 3/14/02).

⁷⁵ The tax incentive provisions now contained within the Senate Energy Bill S.517 were recently adopted from SA No. 3286 to SA No. 2917, “The Energy Tax Incentives Act of 2002”, on April 23, 2002 (Congressional Record, pp. CR S3117-3119). It is referred to as the ‘Baucus Amendment’. The legislative history underlying these provisions is contained within Senate Finance Committee Report No.107-40.

⁷⁶ S. 517, Title XIX, Secs. 1901-1903.

⁷⁷ Ibid, Title XXII, Secs. 2201, 2211 and 2212.

⁷⁸ Ibid, Title XXIII, Sec. 2301.

⁷⁹ Ibid, Title XX, Secs. 2001 and 2002.

⁸⁰ Ibid, Title XX, Sec. 2003.

⁸¹ Ibid, Title XXI, Sec. 2106.

⁸² Ibid, Title XXI, Sec. 2102.

⁸³ Ibid, Title XXI, Sec.s 2101, 2103 – 2105.

⁸⁴ Ibid, Title XXI, Sec. 2108.

⁸⁵ Quoted from a speech given by Senator Robert Byrd of West Virginia, as part of a Senate colloquy concerning SA No. 2917 to S.517, on March 21, 2002, (p. CR S2197).

⁸⁶ SA 2917, Sec. 1012(10). This failure has also been cited by the Bush plan.

⁸⁷ Ibid, Sec. 1012(10) and (11).

⁸⁸ Ibid, Sec. 1001(a)(7) and (a)(8).

⁸⁹ Ibid, Sec. 1001(a)(9); A revised report issued by the Natural Resources Defense Council in October 2001, casts doubt on one such concern (expressed within S.98), namely that China, a developing country which is the world’s second largest emitter of GHGs, is unfairly exempted from the very same Kyoto emissions reduction provisions that the U.S. is subject to. The report found, surprisingly, that China’s emissions reductions fell dramatically during the mid to late 1990’s, even as the country’s economy grew rapidly. “Second Analysis Confirms Greenhouse Gas Reductions in China”, Natural Resources Defense Council (October 2001) at www.nrdc.org/globalWarming.

⁹⁰ Otherwise known as the ‘Byrd-Hagel Resolution’, S.Res. 98 was passed by the Senate pursuant to a vote of 95-0, on July 25, 1997. It read as follows: “*Resolved*, That it is the sense of the Senate that —

1) The United States should not be a signatory to any protocol to, or other agreement regarding, the United Nations Framework Convention on Climate Change of 1992, at negotiations in Kyoto in December 1997, or thereafter, which would:

A) mandate new commitments to limit or reduce GHG emissions for the Annex I Parties, unless the protocol or other agreement also mandates new scheduled commitments to limit or reduce GHG emissions for Developing Country Parties within the same compliance period,

OR

B) would result in serious harm to the economy of the United States; AND B) would result in serious harm to the economy of the United States; AND

2) Any such protocol or other agreement which would require the advice and consent of the Senate to ratification should be accompanied by a detailed explanation of any legislation or regulatory actions that may be required to implement the protocol or other agreement and should also be accompanied by an analysis of the detailed financial costs and other impacts on the economy of the United States which would be incurred by the implementation of the protocol or other agreement.”

⁹¹ SA No. 2917, Sec. 1001(a)(1)-(5); 1012(1) and (3).

⁹² Ibid, Sec. 1001(b)(1)-(3).

⁹³ Ibid, Sec. 1001(b)(1)-(3). 1012(6)(7)(8)

⁹⁴ Ibid, Sec. 1012(12)(A) and (B); (13).

⁹⁵ Ibid, Sec. 1012(13)(A)-(C). Some of the research programs are described within Title XIII of the Climate Change Act, “Climate Change Science and Technology, Department of Energy Programs”, Sections 1301-1302 and 1311-1312.

⁹⁶ Its purpose would be to develop the U.S. climate change response strategy, and its director shall be appointed by and report directly to the President, with the advice and consent of the Senate. Ibid, Sec. 1013(1), 1015(a), and 1016(b). Such person shall submit to the Congress the President’s climate change strategy no later than one year following the date of enactment, and an update thereof, every two years thereafter. Ibid, Sec. 1015 (b)

and (c). In addition, progress reports describing progress on the implementation of the Strategy shall be prepared annually for the President by the director, and shall be submitted annually by the President to the Congress. *Ibid.*, Sec. 1016 (b)(4); 1015 (d). One provision within the Climate Change Act, Section 1013, was recently clarified and elaborated upon (but not modified) during a Senate colloquy adopting Modified Amendment No. 3231 to SA No. 2917. Notwithstanding bipartisan agreement on substantially all provisions within Titles X and XIII of SA No. 2917, a number of senators remained convinced that there needs to be a *Senate-confirmed appointee* in the White House to oversee climate change policy and assure accountability, so that the national energy policy being developed in the White House is not developed independently (and possibly in duplication) of Congress' U.S. climate change policy. The Senators have agreed to move forward to conference with their concerns, where they expect to engage the White House and the House energy conferees to resolve the issue of central accountability in the Executive Office of the President. See: Bingaman Modified Amendment No. 3231 (to SA No. 2917), Congressional Record, April 23, 2002, at www.legislative.noaa.gov/climatechangeamendmenttoenergybill042302.html.

⁹⁷ Its purpose would be to serve as the primary mechanism for Federal agencies to work together to develop and implement national climate change policy. SA No. 2917, Sec. 1013(2), 1016(b)(3)(B) and 1016(d). Among the advisory duties to be performed by the Director of such office, is a review of the extent to which existing, proposed or newly created tax policy, trade policy and foreign policy are capable of producing progress on the long-term goal of stabilization of GHG concentrations. *Ibid.*, Sec. 1016(b)(3)(C)(ii).

⁹⁸ Its purpose would be to spend up to \$4.75 billion to establish a "Technology Innovation Program" for innovative research and development, focusing on breakthrough technologies. *Ibid.*, Sec. 1013(3) and 1017(a)-(f).

⁹⁹ Its purpose would be to review and monitor annually the progress made toward the stabilization of GHG concentrations. *Ibid.*, Sec. 1013(4) and 1019(a)-(h).

¹⁰⁰ *Ibid.*, Sec. 1101. See: SA No. 3239, as modified, to SA No. 2917, approved April 25, 2002, New Sec. 1102(6), and 1104(b)(1) and (2). For purposes of this database, GHGs are defined as including carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and any other anthropogenic climate-forcing emissions with significant ascertainable global warming potential. See: SA No. 3239, as modified, to SA No. 2917, and New Sec. 1102(8)(A)-(G). The first six GHGs listed herein are identical to those listed within Annex I of the Kyoto Protocol.

¹⁰¹ SA No. 2917, Sec. 1101(1)-(3).

¹⁰² SA No. 3239, as modified, to SA No. 2917, New Sec. 1103(b)(3)(B). The responsibility for developing, maintaining and verifying the database falls upon the Department of Energy; the responsibility for developing emissions measurement standards and verification technologies falls upon the Department of Commerce; the responsibility for monitoring, measuring and verifying emissions and maintaining the national emissions inventory falls upon the Environmental Protection Agency; and the responsibility for developing measurement techniques for sequestration and reforestation activities is borne by the Department of Agriculture. New Sec. 1003(b)(1)-(3).

¹⁰³ SA No. 3239, as modified, to SA No. 2917, approved April 25, 2002, New Sections 1105(b)(1)(A) and 1102(2).

¹⁰⁴ *Ibid.*, New Sec. 1105(c)(3)(A). This rule applies only to entities that are not in the farming business.

¹⁰⁵ *Ibid.*, New Sec. 1105(b)(1)(B) and 1105(c)(1). Entities must also report all other categories of emissions, as later determined to be necessary by any one or more of the appropriately designated administrative agencies. New Sec. 1105(c)(1)(C)(i)-(iv).

¹⁰⁶ *Ibid.*, New Sec. 1105(c)(4), and 1106(a)(2)(A) and (B). To satisfy the reporting requirements of New Section 1105, a reporting entity has the 'option' of obtaining 'independent third party' verification by industry experts, though it is highly recommended. *Ibid.*, New Sec. 1105(c)(6). Entities must begin annual GHG emissions reporting no later than April 1 of the third calendar year following the date of enactment of the Act. *Ibid.*, New Sec. 1105(b)(2).

¹⁰⁷ This exemption will not be available if an entity individually or on an entity-wide basis has other GHG emitting activities that are NOT covered by such an agreement. *Ibid.*, New Sec. 1105(b)(1) and (2). An entity's eligibility to use this exemption may be withdrawn at a later date, if it is determined by the Director of the Office of National Climate Change Policy that the mandatory reports submitted during the five years following the enactment of this Act represent less than 60 percent of the national aggregate anthropogenic GHG emissions. *Ibid.*, New Sec. 1108(a) and (b).

¹⁰⁸ *Ibid.*, New Sec. 1105(c)(3)(B).

¹⁰⁹ *Ibid.*, New Sec. 1105(c)(2)(i)(I)-(III). The appropriately designated agencies will eventually develop and implement a system pursuant to which unique serial numbers will be assigned to all of an entity's verified

emissions reductions. This will allow comparisons with an entity's baseline, and will permit the 'tracking' of reductions for use in satisfying future emissions targets and in connection with a possible future emissions trading program. *Ibid*, New Sec. 1104(b)(3).

¹¹⁰ *Ibid*, New Sec. 1105(c)(2)(i)(IV).

¹¹¹ This would include emissions reductions activities previously reported pursuant to the current voluntary GHG Reduction and Sequestration Registry program under Section 1605(B) of the Energy Policy Act of 1992, as amended, or under any other Federal or state voluntary GHG reduction program. *Ibid*, New Sec. 1105(c)(2)(B)(ii).

¹¹² *Ibid*, New Sec. 1105(c)(2)(B)(iii). Reportable reduction and sequestration activities include the following: fuel switching; energy efficiency improvements; uses of renewable energy; use of combined heat and power systems; management of cropland, grassland and grazing land; forestry activities that increase forest carbon stocks or reduce forest carbon emissions; carbon capture and storage; methane recovery; GHG offset investments; and any other practice for achieving GHG reductions. See also: New Sec. 1102(1)(A)and(B).

¹¹³ *Ibid*, New Sec. 1105(c)(2)(B); New Sec. 1105(c)(6).

¹¹⁴ *Ibid*, New Sec. 1106(a)(1).

¹¹⁵ *Ibid*, New Sec. 1106(d)(1).

¹¹⁶ *Ibid*, New Sec. 1106(d)(2).

¹¹⁷ *Ibid*, New Sec. 1106(c)1)and(2).

¹¹⁸ *Ibid*, New Sec. 1105(c)(5).

¹¹⁹ *Ibid*, New Sec. 1109.

¹²⁰ SA No. 2917, Sec. 1321(a)(1) and 1321(b)(1). Such working group shall consist of appointees of the Secretaries from the Departments of Energy and Commerce and the Administrator for U.S. Agency for International Development, and representatives from the Departments of State and Treasury, the Environmental Protection Agency, the Export-Import Bank, the Overseas Private Investment Corporation the Trade and Development Agency and other federal agencies as deemed appropriate. Sec.1321(b)(2).

¹²¹ *Ibid*, Sec. 1321(b)(1). The working group shall submit an annual report describing technology, policy and market opportunities for international development, demonstration, and deployment of clean energy technology. *Ibid*, Sec. 1321(d). All federal agencies or government corporations carrying out an assistance program in support of U.S. persons in the environment or energy sector of a developing country, country in transition or other partner country, are instructed to support, to the maximum extent practicable, the transfer of U.S. clean energy technology as part of that program. *Ibid*, Sec. 1321(c).

¹²² Quoted from a speech given by Senator Robert Byrd of West Virginia, as part of a Senate colloquy concerning SA No. 2917 to S.517, on March 21, 2002, Congressional Record, (p. CR S2197).

¹²³ SA No. 2917, Sec. 1322(l)(2)(A) and 1322(l)(2)(C)(i) and (iv); Modified Amendment No. 3231 to SA No. 2917, New Section 1322(l)(2)(C)(v). This program is to be overseen by the Secretary of Energy, pursuant to the Energy Policy Act of 1992.

¹²⁴ SA No. 2917, Section 1322(l)(1)(A) and 1322(l)(1)(B).

¹²⁵ *Ibid*, Sec. 1322(l)(2)(C)(vi).

¹²⁶ *Ibid*, Sec. 1322(l)(2)(C)(ii) and (iii).

¹²⁷ *Ibid*, Sec. 1322(l)(2)(C)(iv); Modified Amendment No. 3231 to SA No. 2917, New Section 1322(l)(2)(C)(v). The amount a developing country must contribute in order to gain access to (draw down) a development project loan was recently increased from 10% to 50%. See: SA 3231 to SA 2917, approved April 22, 2002.

¹²⁸ Agenda 21 provides a broad and comprehensive blueprint for humanity "to halt and reverse the environmental damage to our planet and to promote environmentally sound and sustainable development in all countries on Earth. It calls for specific changes in the activities of all people, and includes concrete measures and incentives to reduce the environmental impact of industrialized nations, revitalize development in developing nations, eliminate poverty world-wide and stabilize the level of human population." Daniel Sitarz, ed., Agenda 21: The Earth Summit Strategy To Save Our Planet, p. 6 (Earth Press 1993). Preparations are currently being made for the Johannesburg (Rio + 10) Summit on Sustainable Development that is scheduled to take place in Johannesburg, South Africa from August 26 – September 4, 2002. Featured among the many issues to be discussed is the debate over energy use and efficiency, and the challenge of finding ways of bringing clean, affordable energy to those in need. "Johannesburg Summit 2002 – What's New" (1/21/02) United Nations Department of Economic and Social Affairs, Division on Sustainable Development, at http://www.johannesburgsummit.org/html/whats_new/feature_story.html; "Johannesburg Summit 2002 – What's New – Other Stories, Energy Emerges as a Key Issue for Johannesburg", United Nations Department of

Economic and Social Affairs, Division on Sustainable Development, at http://www.johannesburgsummit.org/html/whats_new/otherstories_energy0905.html.

¹²⁹ Nevertheless, it is often mentioned as an UNCED-related agreement. See: Gareth Porter, Janet Welsh Brown and Pamela S. Chasek, "Global Environmental Politics", Third Edition, p.23 and p.25 (Westview Press 2000).

¹³⁰ Rio Declaration, Principle 27. This principle provides that, "States and people shall cooperate in good faith and in a spirit of partnership in the fulfillment of the principles embodied in this Declaration and in the further development of international law in the field of sustainable development"; Rio Declaration, Principle 7, otherwise known as the "Principle of Common But Differentiated Responsibilities". It provides that "States shall cooperate in a spirit of global partnership to conserve, protect and restore the health and integrity of the Earth's ecosystem. In view of the different contributions to global environmental degradation, States have common but differentiated responsibilities. The developed countries acknowledge the responsibility that they bear in the international pursuit of sustainable development in view of the pressures their societies place on the global environment and of the technologies and financial resources they command".

¹³¹ Herman Daly, "Sustainable Growth: An Impossibility Theorem", Chapter 14, pp.267-73, *Valuing the Earth*.

¹³² Robert Solow, *Sustainability, an Economist's Perspective*, p.3 (Woods Hole Oceanographic Institution 1991).

¹³³ *Ibid*; Rio Declaration, Principle 8 provides, "To achieve sustainable development and a higher quality of life for all people, States should reduce and eliminate unsustainable patterns of production and consumption and promote appropriate demographic policies".

¹³⁴ Rio Declaration, Principle 3, otherwise known as the "Principle of Intergenerational and Intra-generational Equity."

¹³⁵ Robert Solow, *Sustainability, an Economist's Perspective* at pp. 3-5. See, also: Robert Repetto, World Resources Institute, cited by Frances Cairncross, "Growth and Sustainable Development" Chapter 1, p. 27, *Costing the Earth* (1992). Mr. Repetto similarly asserts that "...Sustainable development...[does not] demand the preservation of the current stock of natural resources or any particular mix of human, physical and natural assets. As development proceeds, the composition of the underlying asset base changes".

¹³⁶ Rio Declaration, Principle 2, otherwise known as "The Prevention Principle"; David Hunter et al., "The Prevention Principle", *International Environmental Law & Policy*, at p. 364.

¹³⁷ Rio Declaration, Principle 15, otherwise known as the "Precautionary Principle". It provides that, "In order to protect the environment, the 'precautionary approach' shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall NOT (emphasis added) be used as a reason for postponing cost effective measures to prevent environmental degradation." The precautionary principle is incorporated within Article 3.3 of the UNFCCC.

¹³⁸ Daniel Bodansky, "Scientific Uncertainty and the Precautionary Principle", 33 *Environment* 4 (Sept. 1991), cited in David Hunter et al., *International Environmental Law*, at p. 363.

¹³⁹ David Hunter et al., "The Precautionary Principle", *International Environmental Law*, at p. 360.

¹⁴⁰ "Implementing Agenda 21", Report of the Secretary General, Commission on Sustainable Development, UN Economic and Social Council, par.4 (Dec. 20, 2001).

¹⁴¹ Rio Declaration, Principle 4. It provides that "In order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it"; Daniel Sitarz, ed., "Efficient Use of World's Natural Resources", Agenda 21: The Earth Summit Strategy to Save Our Planet pp.9-19; At Marrakech, a Ministerial Declaration was adopted, which among other things, emphasized linkage between sustainable development and climate change., "Climate Talks in Marrakech – COP7: News and Information", Pew Center on Global Climate Change, p. 4; UNFCCC Preamble, Arts. 2, 3 and 4.

¹⁴² Statement by Robert Priddle, Executive Director Int'l Energy Agency, Paris, to the Third Session of the Conference of the Parties to the U.N. Framework Convention on Climate Change (COP-3), pp. 1-2.

¹⁴³ The current infrastructure can probably be traced back 150 years to the beginning of large-scale industrialization. "Greenhouse Gases, Global Climate Change, and Energy", p.1, (Energy Information Administration, U.S. Department of Energy).

¹⁴⁴ Moomaw, Ramakrishna, Gallagher and Freid, *The Kyoto Protocol: A Blueprint for Sustainable Development*, 4 *Journal of Environment and Development* 82, at p.88 (March 1999). "In economic terms, the emission of GHGs in the world economy is a classic externality. GHG emitters do not currently pay the cost of climate change's harmful effects. Because of these perverse incentives, disruption of the global climate will proceed at an excessive pace. Unless such a pace is tempered, substantial costs will accrue in terms of commerce and the environment alike."

¹⁴⁵ Moomaw, Ramakrishna, Gallagher and Freid at pp.84-85.

¹⁴⁶ Moomaw, Ramakrishna, Gallagher and Freid at p.88.

¹⁴⁷ Summary for Policymakers, *Climate Change 2001: Mitigation, A Report of Working Group III of the Intergovernmental Panel on Climate Change*, par.19 (February 28-March 3, 2001)

¹⁴⁸ *Global Climate Change Policy Handbook*, pp.6-7.

¹⁴⁹ From a technical perspective, “energy efficiency’ can be said to have occurred when either energy inputs are reduced for a given level of service, or there are increased or enhanced services for a given amount of energy inputs...*Energy intensity* is defined as the ratio of energy consumption to some measure of demand for energy services. Energy intensity measures are often used to measure energy efficiency and its change over time..., [although] energy intensity measures are at best a rough surrogate for energy efficiency...because energy intensity may mask structural and behavioral changes that do not represent ‘true’ efficiency improvements such as a shift away from energy intensive industries.” Stephanie J. Battles and Eugene M. Burns, “United States Energy Usage and Efficiency: Measuring Changes Over Time”, Energy Information Administration, p.4 (17th Congress of the World Energy Council, Houston Texas, 9/14/98).

¹⁵⁰ *Ibid*, pp.4-5.

¹⁵¹ In the absence of future (mandatory) actions taken to reduce energy demand and carbon dioxide emissions, “carbon dioxide emissions from energy use are projected to increase an average rate of 1.5 percent per year from 1,562 million metric tons of carbon equivalent in 2000 to 2,088 million in 2020. This increase is due to higher projected energy demand in the commercial and transportation sectors and more coalfired electricity generation. Carbon dioxide emissions are expected to increase more rapidly than total energy consumption, as a result of increasing use of fossil fuels, a slight decline in nuclear generation and slow growth in renewable generation. “Annual Energy Outlook 2002 with Projections to 2020”, Department of Energy Report# DOE/EIA-0383 p. 6, (2002) (December 21, 2001, last modified 3/28/02).

¹⁵² “Pew Center Analysis of President Bush’s February 14th Climate Change Plan”, p.1, Pew Center on Global Climate Change at www.pewclimate.org.

¹⁵³ In the 1980’s GHG intensity fell by 21 percent. During the 1990’s GHG intensity fell by approximately 16 percent, but absolute levels of emissions increased by 14.1 percent. The contributing factors include technologies and the continued transition from heavy industry to less energy intensive, service oriented industries. *Ibid*.

¹⁵⁴ “Analysis of Bush Administration Greenhouse Gas Target”, World Resource Institute (February 14, 2002). This study found that between 1990 and 2000, GHG emissions increased by an average of 1.4 percent per year (14.7 percent total over the decade), while the economy grew by about 3.3 percent per year (38.1 percent total). As a result, GHG intensity declined at an average rate of 1.8 percent per year (-16.9 percent total) over the 1990-2000 period.

¹⁵⁵ *Ibid*; “Pew Center Analysis of President Bush’s February 14th Climate Change Plan”, p.2, Pew Center on Global Climate Change. In other words, the Bush plan would represent “business as usual”.

¹⁵⁶ “The U.S. Domestic Response to Climate Change: Key Elements of a Prospective Program”, Pew Center on Global Climate Change, p.4 (August 2001). Theoretically, a GHG intensity target can lead to a net reduction in emissions, but only if it is sufficiently stringent. *Ibid*, p.1. The IPCC report also indicates that to achieve stabilization of atmospheric carbon dioxide over a broad range of 550 ppmv to 450 ppmv or below over the next 100 years, most economic models suggest that a very significant reduction in world carbon emissions per unit of GDP from 1990 levels will be necessary. Summary for Policymakers, Climate Change 2001: Mitigation, A Report of Working Group III of the Intergovernmental Panel on Climate Change, (‘IPCC Report III’) par.9 (February 28-March 3, 2001).

¹⁵⁷ Rio Declaration, Principles 2 and 15.

¹⁵⁸ Rio Declaration, Principles 4, 8 and 11. Rio Declaration, Principle 11, provides that “States shall enact effective environmental legislation. Environmental standards, management objectives and priorities should reflect the environmental and developmental context to which they apply...”

¹⁵⁹ IPCC Report III, par.19; 22.

¹⁶⁰ The importance of public-private partnerships between governments, the private sector and community and citizen groups (NGO’s), was highlighted at a recent United Nations Preparatory Committee (PrepCom III) meeting organized in preparation for the World Summit on Sustainable Development which will take place in Johannesburg, South Africa (the “Rio + 10” conference), during August 2002. “Enthusiasm and Some Concerns Voiced Over Partnership Proposals”, Johannesburg Summit 2002, p. 1 (April 2, 2002) at www.johannesburgsummit.org.

¹⁶¹ Rio Declaration, Principle 10 provides generally that, “Environmental issues are best handled with the

participation of all concerned citizens at the relevant level... States shall facilitate and encourage public awareness and participation [in decision-making processes] by making information widely available..."

¹⁶² Although past experience shows that without mandatory requirements voluntary agreements have not worked, at least one study claims that voluntary agreements can be used to secure significant, enforceable emissions reductions in advance of later mandatory emissions requirements. "The U.S. Domestic Response to Climate Change: Key Elements of a Prospective Program", Pew Center on Global Climate Change, pp.5-6 (August 2001).

¹⁶³ Eric Dannenmaier and Isaac Cohen, "Promoting Meaningful Compliance With Climate Change Commitments", Prepared for the Pew Center on Global Climate Change, p. 38 (November 2000). This would be consistent with the growing trend toward building a national framework that would incorporate both rewards and punishments to motivate behavior consistent with public policy.

¹⁶⁴ "Building Institutions for a Better Environment", Economic Report of the President – 2002, Chapter 6, p.8. A tradable permit program forces polluters to incorporate the cost of their external environmental damages into their operating costs.

¹⁶⁵ Global Climate Change Policy Handbook, pp.2 and 8.

¹⁶⁶ SA No. 2917 to S.517, Sec. 1001(b)(2) and 1015(a)(5).

¹⁶⁷ Richard Rosenzweig, Matthew Varilek, Ben Feldman, Radha Kuppalli, "The Emerging International Greenhouse Gas Market", Prepared for the Pew Center on Global Climate Change, p.46, (March 2002). A GHG market has begun to emerge across the globe only during the last five years, and in the absence of formal regulation, has evolved under a loosely constructed, ad hoc framework consisting of mostly project-based programs that have been voluntary in nature.

¹⁶⁸ Moomaw, Ramakrishna, Gallagher and Freid, at p.84; Tom Teitenberg, Economic Instruments for Environmental Regulation, pp. 376, 379-81, 382, 392, (Robert Stavins, ed., 4th ed., 2000); Economic Report of the President – 2002, at pp.7,16-17. The lack of clear trading rules, for example, has increased transaction costs and been a significant impediment to the development of a more robust GHG market. Rosenzweig, Varilek, Feldman, and Kuppalli, at pg v. The economic costs and benefits of a climate and energy policy depend critically on elements of the policy design. James P. Barret and Andrew Hoerner, Clean Energy and Jobs, A Comprehensive Approach to Climate Change and Energy Policy", p. 3 (Economic Policy Institute 2002).

¹⁶⁹ "Market participants attempt to conform their trades to emerging policy, and policy-makers seek to develop trading programs in light of accumulating experience from market participants... During the brief history of emissions trading programs, trading has typically proceeded after government requirements to reduce emissions were imposed and trading rules were developed." Rosenzweig, Varilek, Feldman, and Kuppalli at p.46. Some multinational companies and governments outside the U.S., including Denmark and the United Kingdom, have already begun exploring the challenges and benefits of GHG trading prior to the existence of a formal regulatory framework. Only recently, in fact, did the European Union issue a proposal to establish an EU-wide carbon dioxide emissions trading system.

¹⁷¹ "There are two major energy systems functioning in the U.S., with comparatively little influence on each other. Our transportation system is run almost entirely on oil-based resources. The second system which provides power to warm our homes, light our businesses... run our computers, and cook our meals, is supplied largely by domestic industries and resources that are in the midst of an historic and difficult transition... We must intelligently address the needs of these two energy systems simultaneously in order to provide a comprehensive solution to our energy needs..." Quoted from a speech given by Senator Robert Byrd of West Virginia, as part of a Senate colloquy concerning SA No. 2917 to S.517, on March 21, 2002, Congressional Record, p. CR S2197.

¹⁷² It is widely acknowledged that climate change is a long-term global problem that involves complex interactions between climatic, environmental, economic, political, institutional, social and technological processes. A prudent risk management strategy requires a careful consideration of the environmental and economic consequences, their likelihood and society's attitude toward risk. A step-by-step resolution aimed at stabilizing GHG concentrations is suggested. The relevant question is not "what is the best course for the next 100 years", but rather "what is the best course for the near term given the expected long term climate change and accompanying uncertainties. Known technological options refer to technologies that exist in operation or pilot plant stage today. It does not include any new technologies that will require drastic technological breakthroughs. IPCC Report III at pars..9 and 15.

¹⁷³ Ibid, par.10; Kyoto Protocol, Article 2, (1)(a)(v).

¹⁷⁴ Rio Declaration Principles 3, 7 and 27. Rio Declaration, Principle 27 provides that, "States and people shall cooperate in good faith and in a spirit of partnership in the fulfillment of the principles embodied in this Declaration and in the further development of international law in the field of sustainable development".

¹⁷⁵ Principle 9 of the Rio Declaration, provides that “States should cooperate to strengthen endogenous capacity-building for sustainable development by improving scientific understanding through exchange of scientific and technological knowledge, and by enhancing the development, adaptation, diffusion and transfer of technologies, including new and innovative technologies”.

¹⁷⁶ See: Statement by Robert Priddle, Executive Director Int’l Energy Agency, Paris, to the Third Session of the Conference of the Parties to the U.N. Framework Convention on Climate Change (COP-3), p.2.

¹⁷⁷ Fred Pearce, “Canada Set to Reject Kyoto Protocol”, *NewScientist.com*, Reed Business Information Ltd., (May 10, 2002) at <http://www.newscientist.com/news/print.jsp?id=ns99992269>. This outcome has become more plausible given the divisions over Kyoto within the Canadian federal government which is under heavy pressure from energy producers and business groups to reject the protocol. David Ljunggren, “Global Warming Spat Mars Ottawa’s Kyoto Proposals”, *Reuters New Service* (May 15, 2001) at <http://www.yahoo.com>. It was also recently reported that the Canadian government issued a four-part action plan that it claims would allow the country to meet its obligations under the Kyoto Protocol. However, Canada’s ratification would depend on it being able to engineer a deal for major breaks in its emissions limits, something that the European Union is unlikely to agree to. “Canadian Government Offers Scenarios For Meeting Kyoto Protocol Limits On Greenhouse Gas Emissions”, *Associated Press* (May 15, 2002) at www.yahoo.com; See, also: Perrin Beatty and Alanna Mitchell, “Kyoto: The Storm Over Climate Change”, *The Globe and Mail*, Bell Globemedia Interactive Inc., (May 11, 2002 Online Edition) at www.globeandmail.ca; Jeremy Hainsworth, “Canada Debates Kyoto Protocol”, *Associated Press* (March 16, 2002) at <http://www.yahoo.com>.

¹⁷⁸ David Ljunggren, “Ottawa Casts More Doubt on Kyoto Ratification”, *Reuters News Service*, reported by the Environmental News Network (May 10, 2002), at www.enn.com/news/wire-stories/2002/05/05082002/reu_47147.asp. This article reported the contents of a recently released letter authored by Canadian Industry Minister Allan Rock. Mr. Rock stated in his letter that, “We must find ways to stay competitive while taking action on climate change. When the United States changed their position on ratifying Kyoto, it dramatically changed the playing field for Canada”. See, also: Mark Bourri, “Canadian Plan Moves Toward Kyoto Ratification”, *International Press Service* (May 15, 2002) at www.yahoo.com. This recent article reveals that the Canadian government’s four option plan to meet Kyoto obligations is likely to be very expensive for both consumers and industry and would likely result in a reduction of Canada’s gross domestic product by about 0.6 percent. See also: “Canadian Emissions Threaten Kyoto”, *Ottawa Dispatch*, reported by *Guardian Unlimited* (March 4, 2002), at <http://www.guardian.co.uk/elsewhere/journalist/story/0,7792,661588,00.html>.

¹⁷⁹ Editorial, “Kyoto Protocol Ratified” But More Effective Policy Initiatives are Needed”, *Asahi Shimbun* (June 5, 2002) at www.asahi.com/english/op-ed/K2002060600415.html.

¹⁸⁰ “Toothless Global Warming Bill”, *The Japan Times Online*, *The Japan Times* (May 1, 2002) at <http://www.japantimes.co.jp>; See also: “Lower House Panel Oks Kyoto Accord Ratification”, *The Japan Times Online*, *The Japan Times* (May 18, 2002) at <http://www.japantimes.co.jp>; “Cabinet Approves Legislation to Revise Kyoto Protocol”, *The Japan Times Online*, *The Japan Times* (March 30, 2002) at <http://www.japantimes.co.jp>.

¹⁸¹ “Australia Won’t Sign Kyoto Protocol”, *AP*, *Guardian Unlimited* (June 5, 2002) at <http://www.guardian.co.uk/worldlatest/story/0,1280,-1785273,00.html>; Fred Pearce, “Coal-rich Australia Rejects Kyoto Protocol”, *New Scientist.com News Service* (June 5, 2002) at <http://www.newscientist.com/news/news.jsp?id=ns99992369>; “Australia Dumps Kyoto Climate Change Treaty”, *Reuters*, *Taiwan News.com* at <http://www.etaiwannews.com/Asia/2002/06/06/1023329160.htm>.

¹⁸² Amanda Hodge, “Climate Deal Puts Kyoto at Risk”, *The Daily Telegraph*, (March 1, 2002), at http://www.dailytelegraph.news.com.au/common/story_page/0,5936,3865184%5E421,00.html; “Australia Announces Agreement With U.S. on Climate Control”, *Kyodo News on the Web*, *Kyodo News* (February 28, 2002), at <http://home.kyodo.co.jp/all/display.jsp?an=20020228071>; “Government Accused of Climate Sell-Out”, *AAP*, (March 1, 2002) at http://news.com.au/common/story_page/0,4057,3867623%5E1702,00.html; “Australia Welcomes Bush Climate Plan, Signs Pact”, *Planet Ark* (March 1, 2002), at <http://www.planetark.org/dailynewsstory.cfm/newsid/14790/story.htm>.

¹⁸³ It is uncertain whether Canada’s ratification, at the present time, is necessary for the survival of the Kyoto Protocol. Following the ratification of the protocol by the European Union and all of its members, Dutch Environment Minister Jan Pronk noted, that even the contribution of Japan and Russia would not be enough to reach 55 percent (the Kyoto Protocol needs to be ratified by 55 countries accounting for at least 55 percent of carbon dioxide emissions by the developed world in 1990). “Canada is extremely important” to bring the protocol into force. “EU Ratifications Bring Kyoto Protocol Closer to Reality”, *AFP*, *EurActiv.com* (May 31, 2002) at <http://www.eubusiness.com>; Another media report seems to indicate that Canada’s ratification is not necessary to bring Kyoto into force. “Without Australia and the U.S., the protocol can come into force if the E.U. and Japan are joined by Russia, Ukraine and Poland.” Fred Pearce, “Coal-rich Australia Rejects Kyoto

Protocol”, New Scientist.com News Service (June 5, 2002) at <http://www.newscientist.com/news/news.jsp?id=ns99992369>.

¹⁸⁴ Rosenzweig, Varilek, Feldman, and Kuppalli, at pp. 41-43. The study notes that gaining access to reductions generated by projects in developing countries is likely to be far less complicated for U.S. firms, than either developing and locating corporate subsidiaries in Annex B countries, or utilizing market intermediaries to gain access to international and other countries’ domestic GHG instruments. The study also notes that the transaction costs involved in project-based trading will be higher and may not provide the same cost-saving opportunities as allowance-based trading permitted by the Kyoto Protocol.

The New Jersey Department of Environmental Protection's Non-Traditional Role in Promoting Sustainable Development Internationally¹

By Robert C. Shinn, Jr. and Matt Polsky

As states and countries throughout the World prepare for the World Summit on Sustainable Development in Johannesburg this fall, they will do so in a new era of environmental policy that requires government to think beyond traditional problems and approaches, to look beyond its borders and to see how it can work with other levels of government. Working towards a sustainable environment is in everyone's interest and is everyone's responsibility. States can, and should, serve as catalysts to set the example for others to follow, working in partnership with local authorities, national governments, and international institutions toward common goals.

INTRODUCTION

There is a commonly accepted principle in international affairs, called "subsidiarity principle," that states that each problem is best addressed at the level most affected by the problem; problems should thus be addressed at the lowest level at which they can be solved. While this approach often has merit—and it makes sense that the level of government action should meet the level of the problem—in many cases lower levels of government do not tackle issues that are conventionally considered to be of a larger scale. Global warming is one example of a global scale issue that also has local implications.

The state of New Jersey has not only begun to deal with the causes of global warming, but, in a unique manner, has shown that local governments can exert positive influence on others by crossing levels of government to address such problems and

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Matt Polsky is the Sustainability Leader at the New Jersey Department of Environmental Protection. He has a B.A. from Rutgers College, an M.B.A. & M.A. from N.Y.U., plus additional undergraduate and graduate work at eight universities, including Seton Hall University's U.N. Intensive Summer Study Program. He has also worked as a marketing manager in business, for an N.G.O., taught environmental politics at Cook College, and worked on educational committees for his local school system.

contribute to the shaping of global policy.

In the early 1970s, photographs of Earth taken from space showed us the important global perspective that our planet is united by ecological systems that cannot be divided by political boundaries. These photos helped inspire the first Earth Day, and countries around the world started creating environmental agencies and passing protective laws. Modern environmental policy began, in part, with this global perspective in mind.

Protecting the environment is not done in fragments of time. Although the first Earth Summit in 1992 called for action at a local level to address sustainability, local action is not common.² Environmental policy evolves along with the ongoing coordination of state-of-the-art technology, scientific and sociological forces. Our understanding of the causes of environmental degradation has evolved in line with changes in environmental laws and socioeconomic needs. This evolution has caused us to rethink the way we do business.

Protecting the environment is not done in fragments of time.

Achieving sustainability requires a coordinated and balanced approach, through enhanced inter-agency and inter-governmental cooperation. We need to further protect our natural resources in a way that involves new, results-based methods that provide opportunities for economic development and social equity.

Today, we live in a different world. We can no longer take for granted the freedoms upon which democracies were founded. If the economic and environmental systems of the world are not sustainable, states will no longer enjoy long term sustainability, as we cannot exist as islands of prosperity surrounded by instability.

NEW JERSEY'S UNLIKELY GLOBAL ROLE

Subsidiarity principle³ aside, New Jersey has gone beyond geographic borders and conventional state scale in thinking and initiatives. Other sustainability initiatives that do not have a direct international connection also serve as feasible examples for other states and nations to consider.

In January 2002, the state released a new report, *Governing with the Future in Mind*,⁴ that builds on a previous report describing progress and strategies to achieve 11 sustainability goals with 41 indicators that relate to these goals. The report is an inter-agency document coordinated by the New Jersey Department of Environmental Protection (NJDEP) and approved by the state Governor. New Jersey's Sustainable State goals include environmental protection, economic vitality, decent housing, quality education, healthy people, equity, efficient transportation, and strong communities, culture and recreation.

Responsible government calls for continual progress, not only in improving the quality of life for today's citizens, but for future generations as well. The report will help strengthen the integration of sustainability into the core missions of state agencies, as well as interagency cooperation, a need noted in the 1989 United Nations report,

Our Common Future, which put sustainability on the map. *This is the first time in New Jersey—and probably, in the nation—that state-level strategies are linked to sustainability goals.*

The report also proposes the development of a new goal in New Jersey that relates our pursuit of sustainability to the need for it at a global scale. It suggests that indicators such as participation in national and international efforts to promote sustainability, sustainability-oriented investments in developing countries by state corporations, and contributions by corporations and citizens to organizations promoting sustainable development in third-world countries are effective ways to measure progress towards this goal. If this goal is successfully integrated state-wide through a public process led by New Jersey's new Sustainable State Institute, it will lead to a greater awareness of the interconnectedness of the pursuit of sustainability and will encourage closer relationships with other countries.

The Sustainable State Institute is a cooperative venture with academia, business and non-governmental organizations, and will be led by both Rutgers University and New Jersey Institute of Technology (NJIT). It will help guide New Jersey's pursuit of its sustainability goals by discussing sustainability challenges with the public, updating our performance on the 41 sustainability indicators, advising state government and others, and performing research on critical gaps in our knowledge of sustainability.

Another recommendation of the above report is to expand state government's environmental procurement program to avoid purchasing products from companies that violate child labor laws in other countries. Companies can work with the International Labor Organization, the New Jersey AFL-CIO, and other statewide and international organizations to protect workers and the environment wherever they have subsidiaries and subcontractors.

Last year, U.S. Environmental Protection Agency (USEPA) Administrator and former New Jersey Governor Christie Whitman, asked the NJDEP Commissioner to accept an invitation to address the United Nations Commission on Sustainable Development. This body coordinates effective follow-up to the 1992 International Earth Summit held in Rio de Janeiro. More than 50 world environmental ministers attend the Commission's session each year. This was an extraordinary opportunity to share with the world some of New Jersey's many sustainability initiatives as it set the foundation for the future of environmental management.

OTHER NEW JERSEY SUSTAINABILITY INITIATIVES

To achieve sustainability, economic, social and environmental systems must work in balance, much like an environmental management system, using raw materials efficiently, focusing on energy efficiency, preventing or reusing waste, and conserving land. NJDEP's pollution prevention, brownfields redevelopment and recycling programs are examples of systems that work in unison to help create a sustainable state. The New Jersey State Development and Redevelopment Plan, which aims to channel new development into already developed areas and preserve open space,

promotes environmental protection, economic vitality and the social renewal of cities. More efficiently produced products and less waste can be cost-effective and helps foster economic development and opportunity. NJDEP created an innovative facility-wide permitting program—a national first in the early-1990s—that promoted a holistic approach to preventing pollution. The National Pollution Prevention Roundtable gave NJDEP an award for this program in 1997.

In 2000, NJDEP signed an international declaration committing the agency to join with other states and nations to seek reductions in emissions to increase environmental and economic sustainability worldwide. The International Declaration on Cleaner Production, sponsored by the United Nations' Environment Program (UNEP), was signed as part of the state's observance of National Pollution Prevention Week. Officials from approximately 40 foreign governments have also signed the document, as well as more than 1,000 business entities.

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New Jersey's environmental leadership was recognized by President George W. Bush when he selected former Governor Whitman as his Energy Protection Agency (EPA) Administrator. New Jersey has led the country by entering into one of the first National Environmental Performance Partnership System agreements with USEPA in 1997, to develop results-oriented goals in a holistic manner. NJDEP has developed a comprehensive set of environmental indicators to measure the state's progress toward specific objectives. For example, do we have enough open space permanently preserved to provide habitats for wildlife? The agreement embodies a new approach to relations between federal and state governments and the public, with a more flexible and collaborative process that focuses on compliance assistance, consensus building, energy efficiency and pollution prevention, since it is more efficient to prevent pollution from occurring than to try and control or manage it afterward.

This agreement is a significant move forward in environmental management and provides a solid framework for building sustainability for the next generation. Over the past two years, more and more sustainability concepts have been integrated into this framework. NJDEP is looking at incorporating additional sustainability indicators, including reviewing work done in this area by the United Nations. These sustainability indicators may help us to deepen our understanding of the relationship between the environment and the economy, which is crucial to pursuing sustainability.

For businesses that are capable of going beyond compliance minimums to achieve higher environmental standards, which will be essential for sustainability, NJDEP created the Silver and Gold Track Program for Environmental Performance. A

company's compliance and enforcement track record and commitments to improved environmental performance determines acceptance into the program. NJDEP's experience has shown that the vast majority of companies want to be good corporate citizens and comply with environmental regulations—it is easier in the long run and more cost effective. Corporate executives and their families want clean air and water, and a healthy ecosystem. The state recognizes corporate environmental excellence by entering a covenant with participants to go “beyond-compliance,” and recognizing their accomplishments.

NJDEP also has encouraged companies to reduce or eliminate their use of hazardous substances, such as mercury, through recycling programs and promotion of alternative technologies to replace mercury with other, safer materials in switches, auto parts, and lighting. In January, following the completion of a multi-sector, NJDEP-led Mercury Task Force report, NJDEP initiated a mercury recycling partnership program with auto recyclers, scrap metal recyclers and auto shredder facilities to remove electrical switches and other parts containing mercury from the iron and steel recycling stream. This will result in reducing air emissions from iron and steel smelters and the deposition of these airborne pollutants into waterways. The United Nation's new workgroup on mercury may benefit from this new mercury report.⁵

New Jersey is a leader in encouraging the development of regional strategies to address air pollution, since air pollutants can be transported across political boundaries. NJDEP has been an active participant in national and international organizations that strive to reduce air pollution, such as the Center for Clean Air Policy, the North American Research Strategy for Tropospheric Ozone, the Ozone Transport Commission and the Ozone Transport Assessment Group.

Increased concentrations of greenhouse gases in the atmosphere, primarily from carbon dioxide emissions, contribute to global warming with local sea level rise and flooding impacts, that threaten coastal communities and ecosystems. If sea levels continue to rise as predicted, the impact on coastal towns and tourism in New Jersey, as well as elsewhere, could be very serious. In addition, higher temperatures mean more summertime smog and air pollution threatening public health. Warmer temperatures also increase evaporation and, quite possibly, the frequency and intensity of both rainstorms and droughts.

If sea levels continue to rise as predicted, the impact on coastal towns and tourism in New Jersey, as well as elsewhere, could be very serious.

NJDEP formed a Climate Change Workgroup with representatives from other state agencies and the business and environmental communities to develop a plan to reduce emissions of greenhouse gases (GHGs). New Jersey was the first state in the nation with a specific goal for GHG reductions. GHG emissions are an indicator for

the Sustainable State Project mentioned earlier. New Jersey's Greenhouse Gas Action Plan⁷ identifies cost effective strategies for achieving GHG reductions. On Earth Day 1998, New Jersey committed to reduce greenhouse gas emissions by 3.5 percent below the 1990 level by the year 2005. This translates to a 14 percent, or 20.5 million metric-ton reduction per year in GHG emissions by 2005, compared to a business-as-usual scenario. When the action plan was adopted, the National Resource Defense Council and the Center for Clean Air Policy, two nongovernmental organizations, and USEPA all publicly commended New Jersey for establishing a model for the rest of the nation to follow. NJDEP kicked off its GHG program by signing sustainability covenants with some of New Jersey's largest companies who pledged to match New Jersey's goals. Recent reporting by this initial group of participants documents GHG emission reductions of more than one million metric tons.

Since the GHG initiative began, all 56 presidents of the state's colleges and universities have signed the sustainability covenant pledging to help New Jersey meet its GHG reduction goal through implementation of reduction strategies at their facilities. Recently, the New Jersey School Boards Association and the interfaith community pledged to help New Jersey meet its GHG reduction goal. Businesses, counties and municipalities also have been joining in this goal by entering into partnership agreements with the NJDEP. NJDEP's plan has been used by people in other states to argue that their states should also be more involved in addressing global warming.

A variety of innovative technologies such as insulation, geothermal heating and cooling systems, and the purchase of energy efficient lighting and vehicles, all make economic sense and can help achieve our goal of reducing greenhouse gases. New Jersey's strategy includes the creation of a comprehensive greenhouse gas inventory, creation of a landfill gas reduction program, energy conservation program, development of renewable energy facilities and clean fuel vehicle fleets in the public and private sectors. With all of the initiatives cited above and below mostly in place today, NJDEP anticipates meeting and exceeding its GHG reduction goal. Further, if implementation is successful and momentum maintained, it is estimated the state may be well on its way to even more ambitious GHG reductions by 2010.

The New Jersey Board of Public Utilities, in consultation with NJDEP, recently issued an order for a \$358 million societal benefits charge program to help fund the capital costs of energy efficiency and renewable energy technology. The program, established by the New Jersey Legislature, is expected to avoid nearly two million tons of GHG emissions annually.

NJDEP also recently signed an agreement with the state's largest energy utility, PSE&G, which establishes a 15 percent reduction goal of the utility's 1990 greenhouse gas emissions by 2005.

Furthermore, NJDEP established an Open Market Emissions Trading program to provide incentives for voluntary reductions of air emissions. A driving vision behind the program was the idea that trading emissions would benefit New Jersey and other participants economically, as well as environmentally. In 2000, DEP expanded the

program to reward facilities which take early, voluntary actions to reduce greenhouse gases and allow greenhouse gas credits to be traded on the open market.

Building on an pre-existing fruitful relationship involving the exchange of policy ideas, the State of New Jersey took a first-of-its-kind action to sign an agreement with a foreign nation, the Netherlands, to work jointly on global warming issues. By forming a partnership with the Netherlands, which has similar coastal communities and some similar environmental problems, NJDEP developed economic incentives to curb global warming. Clean air is essential to sustainability and our quality of life; initiatives that reduce carbon dioxide nearly always reduce other air pollutants. The landmark agreement, signed in 1998, identifies strategies for developing pilot projects to trade carbon dioxide emission credits internationally.

Part of the purpose of the agreement was for each party to gain experience in emissions trading for expanded use in the future if and when global trading becomes a more commonplace means of addressing global warming. NJDEP explored potential emission trade projects such as the purchase by a Dutch company of carbon dioxide credits from a United States electric utility's program to capture methane at a landfill in New Jersey. Without the installation of the landfill gas collection system, the methane would have been vented into the atmosphere, thereby contributing to global warming. Instead, the methane is captured and used as a renewable energy resource.

The establishment of the nation's first state Office of Innovative Technology and Market Development within NJDEP encouraged and facilitated the commercial use of reliable technology among both states and internationally. The office works in cooperation with national organizations such as the Environmental Research Institute of the United States to promote environmental technology through public-private partnerships with other states and countries.

The establishment of the nation's first state Office of Innovative Technology and Market Development within NJDEP encouraged and facilitated the commercial use of reliable technology among states and internationally.

New Jersey also has formal agreements with Canada, Thailand, Brazil, Germany, Israel and France to promote the exchange of environmental technologies and information. Regulatory flexibility provides economic savings, speeds up the attainment of environmental goals and promotes greater sustainability in our state and in participating countries. The agreements are investments in our future as they allow environmental industries to establish partnerships between government, industry and universities to foster research and development and to target new markets, while helping address environmental problems internationally.

One of the United States' most prestigious awards for innovative government, the United States Government's Hammer Award, was presented in 1996 to a coalition of state and federal agencies, including NJDEP, for fostering the development of new

environmental technologies. New Jersey received recognition for helping to frame and promote a multi-state agreement, established through a Memorandum of Understanding, to expedite technology reviews through interstate reciprocal agreements. If a technology is approved by a participating state, it is accepted by the others in the partnership. Now known as the Technology Acceptance and Reciprocity Partnership, the agreement launched a pilot project to evaluate a variety of different technologies ranging from pollution prevention to remediation technologies for contaminated sites. Since the initial six-state agreement, two more states have joined and, collectively, the states have issued several interstate technology protocols for reciprocal acceptance.

New Jersey built on that success to host the country's first-of-its-kind International Environmental Technology Expo in 1999. The New Jersey Corporation for Advanced Technology (NJCAT), which provides technical, commercial, regulatory and financial assistance to emerging companies, was a co-sponsor of the Expo, as along with USEPA, the Environmental Council of States (ECOS), which is comprised of the environmental agency heads from 49 states, and the Interstate Technology and Regulatory Cooperation, a group of 40 states involved with remediation technologies. Representatives from the UNEP and other countries, including the Netherlands, Egypt and Canada, spoke at the Expo.

New Jersey's leadership efforts have spurred more international involvement with ECOS. For example, representatives from the Netherlands now attend ECOS conventions, and ECOS is inviting Canada and Mexico to upcoming meetings. There has emerged a good working relationship with the Canadian government and some businesses and, through our agreement with Canada, we are developing a prototype for a technology verification system.

Moreover NJDEP's agreement with Thailand includes a joint Center for Environmental Technology, Transfer and Development, with satellite operations headquartered at NJIT in Newark. Thailand is developing its regional leadership capability to implement environmental technologies throughout Asia, which will offer additional opportunities for New Jersey businesses. The Center has an International Advisory Board that provides oversight with representatives from other state and federal agencies, industry and universities. The Center will not only spur economic development for both parties, but will also seek solutions to important environmental issues such as renewable energy, waste minimization, site remediation and pollution prevention.

NJDEP received a grant to share its pollution prevention methodology with Thailand to improve their industry's environmental performance. The grant was administered by the U.S.-Asia Environmental Partnership and funded by the U.S. Agency for International Development, which supports the transfer of state environmental technologies through partnerships with targeted countries.

The Thai Ambassador to the U.S. and his officials visited New Jersey in 1995 to learn more about wastewater treatment and solid and hazardous waste management. Thai officials chose to visit New Jersey during their trip to the United States and

Canada due to our cutting-edge environmental protection programs. Most developing countries do not have enough specific information about the levels of their pollution. Environmental progress will depend, in part, on knowing more about pollution quantities, using materials accounting processes like those employed in New Jersey.

In addition, NJDEP has hosted presentations for professionals from other nations to learn how our programs can be adapted to solve environmental problems in their regions of the world, including Africa, the Caribbean, Latin America and the Middle East. DEP hosted visitors from the governments of China, Sweden, Korea and Belgium to exchange views on environmental policy. Last June, NJDEP staff participated in a USEPA-sponsored trip to China for workshops on pollution prevention and energy efficiency. The purpose was to share ideas and experiences regarding voluntary industry-government partnerships. NJDEP's pollution prevention Director gave a presentation on our Silver and Gold Track program, mentioned earlier, which provides an incentive for businesses to go beyond compliance. As a result of our participation, a delegation of Chinese officials visited NJDEP in January to continue the exchange of ideas. NJDEP has also hosted seminars for its staff on the sustainability policies of South Africa, the Netherlands, Sweden, Costa Rica and Germany.

NJDEP employees also participate in a program to bring environmental education to Cuba, including teaching the use of Geographic Information Systems (GIS), a dramatic technological advancement that increases the availability and usability of information. GIS is a computerized mapping tool that uses various types of data to create complete environmental profiles of selected geographic areas, and is used for resource-based decision making at all levels of government. NJDEP has expanded the use of GIS throughout New Jersey, and also has been sharing its GIS expertise with other countries, including Germany.

Last year, NJDEP joined Germany and EPA in a workgroup to share information on the cleanup of hazardous waste sites and each other's technologies. The redevelopment of contaminated sites is a concern in many countries and requires an integrated approach to protect human health and the environment. Many countries have committed extensive resources to the effort to address the environmental, social and economic issues related to the clean up of hazardous waste sites. Brownfields redevelopment is a way to rebuild urban viability. The challenge is how to capitalize on the resources, expertise and knowledge of countries that are developing solutions to these issues, and to effectively share this information.

It is clear that the successful redevelopment of brownfields requires the cooperative efforts of federal and state agencies, as well as industry and local governments. Both Germany and New Jersey identified similar obstacles to the redevelopment of abandoned contaminated properties such as sprawl, liability, identification and marketing. New Jersey, USEPA and Germany agreed to develop training, guidance materials and web sites that describe additional resources that can be used by all interested parties to facilitate the cleanup and reuse of contaminated properties.

Redeveloping and reinvesting in urban centers makes good environmental and economic sense. Brownfields redevelopment prevents further land consumption, saves

money through the use of available infrastructure, broadens the local tax base, and socially and economically revitalizes urban communities. Our brownfields redevelopment program provides grants to local governments to acquire and clean up contaminated properties. NJDEP's successful brownfields program won national awards for the past three years for innovative redevelopment projects. By reinvesting in our brownfields sites, encouraging partnerships with businesses and other levels of government, New Jersey can continue to facilitate brownfields redevelopment and thus, sustainability in several ways.

Another example of New Jersey's international environmental efforts includes the state asking the federal government for a regional ban on the harvesting of horseshoe crabs in Delaware Bay. The crab eggs provide food for declining populations of neotropical birds that migrate between continents. The birds, such as the red knot, travel from Chile to the Delaware Bay Region, then to the Arctic, and their food supply has become scarcer due to over-harvesting by fishermen. While New Jersey and a few other states had banned harvesting, the entire multi-state region and the relevant federal agency had not. NJDEP led a multi-country science team to track the birds through their entire journey, to generate enough data to prove the need for a regional ban.⁷ We asked staff to volunteer to help the scientists band birds and perform counts. NJDEP also provided funding and expertise to landowners in the region to better manage their land to help the birds during their stay. Last year, the Bush Administration agreed to the request by NJDEP and others to issue a regional ban on horseshoe crab harvesting and stated that it would develop a sanctuary.⁸

The national Right-to-Know Program, to gather and make available to the public data on the level of certain chemicals emitted into the environment, began in New Jersey. *This program, considered by environmental policy experts to be one of the most successful environmental initiatives, shows how one state's efforts can spread beyond to a larger national scale.* The program also has received inquiries through the years from various countries showing how information and strategies can flow between the state and international scales.

States should take the initiative in addressing global level problems that have both an effect at the local level and for which effective local action can be taken. However, this does not mean that global level actions are not necessary.

CONCLUSION

All of the programs described above are intended to create a coordinated and balanced approach to the pursuit of sustainability. No matter what the environmental challenges might be, we have to join together to solve them. No one person, group or agency can do it all. *Partnering at all levels of business, government and private*

organizations is key to success.

States should take the initiative in addressing global level problems that have both an effect at the local level and for which effective local action can be taken. However, this does not mean that global level actions are not necessary.

Beyond this, states should not dismiss the possibilities for creative initiatives at the international level, even if this does go against conventional wisdom. Among other reasons, action at a lower scale can create the dynamics for action and synergies at higher levels of government and between the different levels.⁹ Remember the famous saying attributed to Margaret Mead, “Never doubt that a small group of thoughtful, committed citizens can change the world; it is the only thing that ever has.” State government leaders are citizens, too.

There is a lot we don’t know yet about what sustainability requires and what we will have to do. There is always room for improvement and we all need to stay on our learning curves. One way to do this is to question limiting assumptions that prevent us from taking innovative actions that could be effective at multiple levels.

We owe future generations progress towards sustainability, and a better quality of life. We hope that New Jersey and other states and countries will work in greater partnership toward the common goal of a sustainable planet Earth.

Notes

¹ The authors thank Loretta O’Donnell and Jeanne Mroczko for their help with this article.

² Brown, Donald. 1996. Thinking globally and acting locally: The emergence of global environmental problems and the critical need to develop sustainable development programs at the state and local levels in the United States. *Dickinson Journal of Environmental Law & Policy*. (Summer).

³ For a critique of this Principle, see Polsky, Matt. 2001. Short paper II for Ecological Economics. PUA743. University of Maryland Department of Public Affairs. 1 (January). Available from one of the co-authors.

⁴ Available at <www.state.nj.us/dep>.

⁵ Available at <www.state.nj.us/dep/dsr/mercury_task_force.htm>.

⁶ Available at <www.state.nj.us/dep/dsr/gcc/gcc.htm>.

⁷ Twyman, Anthony. 2000. The plight of the red knot. *The Star-Ledger*. 4 June.

⁸ Twyman, Anthony. 2001. U.S. creates reserve for horseshoe crabs. *The Star-Ledger*. 7 February.

⁹ This is described in Dernbach, John. Moving the climate change debate from models to proposed legislation: Lessons from state experience. *Environmental Law Review News & Analysis*. V 30.

Environmental Security: Metaphor for the Millennium

by Kheryn Klubnikin and Douglas Causey

INTRODUCTION

The 1899 Hague Peace Conference captured the optimism of its time and place in history. Hopes were high for the dawning modern age, and lasting peace appeared to be within reach. Initiated by Czar Nicholas II of Russia, who well understood the economic burden and social costs of military buildup, and Queen Wilhemina of the Netherlands, the meeting was the first convocation of its kind to approximate a universal forum. One hundred delegates and actors from civil society, including three who were among the first recipients of the Nobel Peace Prize, convened the Conference. In all they represented twenty-six countries that encompassed 75 percent of the world's people and its resources, including many colonies that provisioned the economies of delegate countries with forests, lands, labor, wildlife and minerals.¹

The Conference addressed issues of conflict and comity in vogue among the participating nations. It was silent, however, on issues of availability and exploitation of natural resources, civil disinvestments, links between inequities of environmental wealth and violent conflict, and the implications for peace.² For instance, ruthless resource exploitation of the Congo between 1880 and 1920 while under the absolute control of King Leopold of Belgium led directly to the deaths of half of the area's population, or 10 million people.³ The empires represented in 1899 shattered into approximately 200 nation states, many of which became mired in world war and other conflicts. Despite earlier expectations, the twentieth century became the most violent 100 years in human history. More than 200 million people were confirmed casualties of interstate wars alone.⁴

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Explication of the intersection of environment, security, and sustainable development with conflict did not emerge until much later. First came a better understanding of the multidimensional aspects of the natural world (“the environment”) and its role in local, national, and global economics, particularly the potential value of natural resources (“environmental wealth”), the different classes of resources (e.g., renewable, non-renewable, biodiversity), the short-term and long-term stability of those resources (“environmental health”), and how sustainable development of the environment might be possible.⁵

The basis of our knowledge to fully address environmental issues is incomplete, and lesser still, on how environment, human behavior, and future options for society are intertwined. During the Cold War era the environment was generally acknowledged as a presence in the affairs of states, encoded in various treaties in limited fashion. The Migratory Bird Treaty is an example of one that, written for an earlier time and an earlier understanding of nature, is now presenting various new challenges. It originated in 1916 between the United States and Great Britain, and was enlarged with several other nations in 1918 to address the large-scale commercial taking of migratory birds, but it did not clearly address their domestic and international ecosystem linkages and services.⁶ Today, extensive habitat problems or diminishing populations are not easily addressed under the limited concept of the Treaty.

Greater comprehension of the intersection of states and transboundary dimensions of natural resources, or how that role may influence the trajectory of human affairs, especially relative to peace and security, only began to emerge in the seventies. A 1972 report of the United Nations Conference on Human Development and Environment held in Founex, Switzerland anticipated the scope of these linkages with in-depth discussions about the role of poverty-related environmental change, increased social anxiety, and its nexus with violent conflict.⁷ In 1982 the Independent Commission on Disarmament and Security Issues, also referred to as the Palme Commission, published its report, *Common Security*.⁸ It underscored a commitment to joint survival and an awareness of the impacts from the numerous civil wars that had occurred in non-nuclear countries since World War II. The members emphasized the need for health and safety of citizens, including a concept of environmental health, as key to greater freedom and a better life. At that time diplomat George Kennan had also realized that environmental degradation was one of the major threats to human existence, along with nuclear weapons, and Jessica Mathews was one of the first to clearly articulate the necessary interest of a state in the environment.⁹

Almost 100 years after the Hague Peace Conference, in another hopeful moment, the World Commission on Environment and Development (WCED, or the Brundtland Commission) issued its landmark 1987 report, *Our Common Future*, launching an era of global environmental thought and action.¹⁰ Chaired by Gro Brundtland, then-Prime Minister of Norway (also a member of the Palme Commission) and a doctor who understood the relationship of human health and environment, the WCED addressed the relationship between human security and the environment. The Commission fully recognized that sustainable development is possible only in an

atmosphere of peace and security. Geographic inequities of natural resource endowments were identified by the Commission and others as a potential and potent element in conflict.¹¹ The WCED viewed environmental stress as both cause and effect of political tension and armed aggression. Since transboundary and global resources transcend the limits of the nation-state, the Commission also predicted the need for the development of new governance approaches, multilateral agreements, joint management regimes, and sophisticated early warning networks.

There are major signs indicating a need for society's cross-sectoral attention to the environment as an underlying security issue. Between 1945 and 1995 the world has lost 25 percent of its topsoil, increased atmospheric carbon dioxide by 25 percent, depleted 8 percent of the atmospheric ozone, and cut about one-third of existing forests without replacement. Whole regions of the world have been severely damaged by human activities with little hope for restoration, and others are sinking into greater and greater dysfunction. A notorious example of significant environmental destruction is the present wasteland in Uzbekistan and Tajikistan that was once the Aral Sea. A result of the Soviet belief that rivers could be easily manipulated to irrigate Central Asia, the area is now badly desertified and plagued with concentrated pollutants, loss of most ecosystem services, and widespread new health problems. Similarly, there has been a catastrophic loss of the Mesopotamian wetlands, historically known as the Fertile Crescent, formed by the drainage of the Tigris and Euphrates Rivers, where control and access of water flow is highly contentious among Iraq, Syria, and Turkey. Since the 1970's, both Syria and Iraq have experienced a 50 percent reduction in average flow of the Euphrates, and at least twenty additional dams are planned or under construction for the river.¹² Reduction of water flow in the Tigris is expected to follow a similar pattern.¹³ Dr. Klaus Toepfer, Executive Director of the United Nations Environment Program, has compared the situation of the Mesopotamian wetlands to that of the Aral Sea.

Over the next 100 years, one-third of current global land cover will be transformed, with the world facing increasingly hard choices among consumption, ecosystem services, restoration, and conservation and management.

Overall, about 90 percent of the water in the Middle East crosses international boundaries. Most of the world's major rivers are transnational, and escalating needs for freshwater means that water rights, access, and environmental quality are global concerns.¹⁴ The trends also do not bode well for the biological communities of freshwater habitats that provide some of the most important ecosystem services to people, including cheap protein sources such as fishes for the poor.

Human domination over ecosystems expanded rapidly in the twentieth century.¹⁵ Over the next 100 years, one-third of current global land cover will be transformed, with the world facing increasingly hard choices among consumption, ecosystem

services, restoration, and conservation and management.¹⁶ The “ecological footprint”, or the total areal extent of land drawn upon for ecosystem services, of people in the Baltic Sea Basin area was estimated. They use an area almost ten times the actual resource expanse of the Baltic and its watershed, with human dependence on water vapor flows to maintain ecosystem services about fifty-four times the amount of freshwater available.

As in other parts of the world, there is a lack of correspondence between sovereign boundaries and natural resources in the Baltic Sea watershed. Security and governance that encompasses a healthy environment and adequate measures for natural resource utilization and conservation can be critical confidence building measures for the region.¹⁷ The regional Baltic environment impacts the lives of approximately 80 million people in fourteen countries (Belarus, Czech Republic, Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Norway, Poland, Russian Federation, Slovak Republic, Sweden and the Ukraine) on a daily basis.¹⁸

The environment is the most transnational of transnational issues, and its security is an important dimension of peace, national security, and human rights that is just now being understood.

Ecosystem appropriations are increasingly critical to urban areas and development overall. In the United States, New York City is overdrawing its closed watershed to support continued growth, struggling now with water appropriations in ways that no one anticipated until recently. Similarly, Los Angeles and many cities in the southwest of North America are struggling with water appropriations. Singapore depends upon Malaysia for its freshwater, an issue of continuing conflict and difficult negotiations. The expanding “ecological footprints” of concentrated urban areas underscore how sustaining economic benefits is dependent upon ecosystem services and environmental “capital.”¹⁹ We use the term capital advisedly because key elements, such as arable land, water, forests, fisheries and oil are the products of long-term geological and biological processes, but are nevertheless finite and not subject to proportionate capital growth. Moreover, the ecosystems upon which we all depend are subject to sudden shifts and adverse changes from poor management and destructive uses that diminish their resilience and unravels their functioning.²⁰ While many aspects of living systems recover from human impacts there are nevertheless limits to economic growth:

...for the rest of the world to reach the United States levels of consumption with existing technology would require four more planet earths.²¹

The environment is the most transnational of transnational issues, and its security is an important dimension of peace, national security, and human rights that is just now being understood.²² We intend to show in this analysis that protection of the global environment, resource management, and new concepts of national security

relate proximally to ecological practice and global policy, ultimately reflecting a calculus about who has access to, and control of, the essential support functions of the natural world.²³ We believe that the nexus of conflict and the environment is already shaping the trajectory of societies and rapidly shaping our common planetary future.

EVOLUTION OF THE CONCEPT OF ENVIRONMENTAL SECURITY

The role of the environment has been traditionally considered in various international forums largely in the context of development and conservation. However, environmental security initially was initially shaped by the military as it became increasingly based in technology. Environmental damages have long been part of human conflict, but only during the twentieth century has the effect been evident on a global scale, especially with the toxic by-products of military activities. Three examples illustrate how military conflict, environmental health, and national security are related and perceived in international contexts: Vietnam, the Gulf States of the Middle East, and Kosovo.

The Vietnam War raised critical issues about environmental damage as a deliberate tool of aggression. About two million hectares of South Vietnam were estimated to have sustained physical damages and alteration, as well as contamination. Extensive bombing and use of the defoliant Agent Orange had serious environmental impacts: Vietnam's terrestrial tropical forests were repeatedly sprayed with defoliants over nine years of violent conflict, impacting as much as 60 percent of the country.²⁴ In 1943 there were approximately 400,000 hectares of viable mangrove forests in Vietnam, among the most productive habitats on Earth. Mangroves are critical insurance against coastline erosion, are nursery grounds for fishes and other aquatic organisms, and are important in carbon and nitrogen fixation, oxygen production, and nutrient generation.

During the war, about 38 percent of the mangrove forests were sprayed, rendering them effectively lifeless.²⁵ By 1983 it was clear that few original mangrove forests had naturally regenerated, and that restoration would occur only with human intervention and investment by the world community. There were attempts at shrimp farming and agriculture in the degraded areas, but extensive destruction of ecosystems couldn't support such efforts.

Terrestrial and other aquatic environments were also damaged. It took a decade after the conflict to realize that restoration of soil and vegetation would take longer than originally understood. Old, complex, inland natural forests will not reach their pre-war state for a century or more.²⁶ Even Asian elephants, often used as transport vehicles by the Vietnamese, were bombed and populations impacted. The same strategy is being used in civil wars throughout Asia today.²⁷ Adverse effects on human health from Agent Orange are still a source of controversy, with consequences on public health funding and policy in both Vietnam and the US. Similarly, Afghanistan was doused with highly effective defoliants by the Russians during the Afghan-Soviet War. There has also been serious environmental damage and loss of wildlife in the conflicts

that were still active in spring 2002.²⁸ The Indonesian military also used napalm and Agent Orange in the fighting in East Timor. Defoliants accelerated deforestation and serious flooding occurs in the area today as it begins its independence

Calculated environmental damage was a hallmark of the Gulf War. Iraqi troops ignited more than 700 Kuwaiti oil wells, creating oil lakes that continued to burn long after the war was over and that still contaminate groundwater. Smoke precipitated black rain in Iran and Turkey, with effects that probably extended as far east as India. Oil was dumped into the marine environment, and weapon debris, including reprocessed uranium, was scattered in the desert.²⁹

Environmental health and stability is not restored with the cessation of conflict, since environmental damages initiated during war continue well into the post-conflict era.

The UN Security Council created the United Nations Compensation Commission to address the international claims from the Gulf War. Environmental destruction was evaluated with the United Nations Environment Program, the first damage assessment ever done for a war. Iraq was found clearly liable. As of 2002, filed claims have totaled US \$287 billion, approximately \$57 billion of which are environmental claims (category F4). Of the \$15 billion in compensation awarded as of 2001, however, none was disbursed for environmental damages. Determination of damage, remediation, and compensation is proving to be a daunting process for the international body.

As a final example, in late 1999 the United Nations Environment Program and the United Nations Center for Human Settlements evaluated the environmental damages from NATO actions in Kosovo. International experts evaluated the regional effects of military actions in the Balkans, particularly the assessment and clean-up activities related to the controversial use of both spent and reprocessed uranium shells in the Danube Basin.³⁰ At the same time, the experts underscored the importance of the former Yugoslavia as a center of European biological diversity that encompasses more than one-third of all European flowering plants, about half of the fishes, and two-thirds of the mammal and bird species.

Environmental health and stability is not restored with the cessation of conflict, since environmental damages initiated during war continue well into the post-conflict era. For instance, after the civil war in Rwanda the population lost several agricultural cycles at a great cost of human suffering and starvation. In Kosovo, the bombing of fertilizer and chemical plants released tremendous quantities of pollutants, now resident in the Danube drainage, with cascading human health and environmental impacts.

Some governments have broadened the role of the military with controversial new missions related to the environment.³¹ Throughout the world the military are increasingly assuming police responsibilities, while in other circumstances they represent an important source of assistance in the new security of disasters, other threats, and

human needs. During the 1960's few sovereign states could have imagined their military acting to referee disputes among clans in Somalia, provide humanitarian relief in Bosnia, assist flood victims in Bangladesh, stabilize both the political and environmental situations in Haiti, or deal with difficult ethnic conflicts in Kosovo.³²

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Subsequent linkages emerged between the military as an agent of national security and the military as an actor in environmental issues. For example, in 1994 the Hungarian Ministry of Defense established a military training school for environmental education.³³ More recently, international military were assigned to Mozambique where massive flood damage, augmented by upper watershed deforestation, washed out and redistributed land mines that are lingering remnants of recent and protracted civil war. Bulgarian and Cuban soldiers have been used to plant trees and create national parks and reserves. Moreover, UN peacekeeping forces were deployed into Haiti from 1994 to 2000. The situation was not characterized by war in any traditional sense, internal or external, but it was volatile politically and environmentally had widespread damage and soil erosion from massive deforestation. Their mission was referred to as "nation building", an activity more commonly associated with development.³⁴ There has also been discussion about certain war zones as serving as wildlife refuges because habitat often is maintained in certain situations, such as the demilitarized zone (DMZ) between the two Koreas.³⁵

International recognition of the connection between military actions and the state of the environment was articulated by the United Nations in 1999:³⁶

The United Nations force is prohibited from employing methods of warfare which may cause superfluous injury or unnecessary suffering, or which are intended, or may be expected to cause, widespread, long-term and severe damage to the natural environment.

Secretary General Annan subsequently addressed the UN Security Council on the need for early warning of and preventive measures for national destabilization. He said the Council should give specific attention to States that were suffering acute economic, *environmental* and security strains.³⁷

In its 1999 report on environmental security, the Committee on the Challenges of Modern Society (CCMS, a civilian group that advises NATO) acknowledged the changing nature of security and the need to manage environmental stress in the areas of concern. The CCMS concluded that, although NATO is a military alliance, it was clear that sustainable use of the environment and international cooperation (e.g., World Bank) in development were significant elements in furthering the essential

mission of NATO.³⁸ The CCMS met in March 2002, where discussions were undertaken about new studies to explore emerging security threats. They will be unified by the theme of “prevention and mitigation of societal disruption” and will also address environmental issues.

CHARACTERIZING ENVIRONMENTAL SECURITY

Environmental security has been viewed through many lenses, with no commonly agreed definition. Parameters usually include assessment, resource access, equity, economics, the nature of land tenure, property rights, and border security. The articulation of the global meaning of environmental security has been cast largely within the context of traditional international theory that evolved largely in the post-World War II era, since biologists and ecologists historically have not had interest or participated in that topic.³⁹ In that context, security still equated roughly to military intervention, and the environment was regarded as a sector equal with other interacting policy sectors to be protected by traditional means.

We believe that these previous efforts at definitions are insufficient because the biophysical world is neither a “sector” nor capital in any neoclassical sense, and consequently problems do not lend themselves to resolution with the tools of traditional diplomacy. Moreover, the concept of security in the environment is not just about conflicts or shortages for people, it encompasses the very existence of the natural world and its processes, some of which are directly involved with human activities, but much of which supports nothing less than life on earth. The causes for lack of success are manifold, but seem related to a shallow characterization of issues, and misunderstanding and omission of the biology, socioeconomics, and realm of human values invested in or dependent upon biotic resources.

The integration of ecological and other scientific information into international and security affairs, social issues, population, and development is a relatively new concept, despite proliferation of international environmental law and policy since 1991.⁴⁰ International policy and diplomacy has not integrated environment in a satisfying manner:

By reading the various peace treaties (Angola, Rwanda, Bosnia, Croatia, etc.) trade agreements (GATT, NAFTA, Euro-Me, Lomé, etc.), cooperation declarations and other documents that bilateral and multilateral diplomatic efforts have produced the last 10 years, one notes that the environmental dimension is absent in the majority of those documents and that in the others environment is at most an after thought, and, in all cases a grudgingly accepted political dimension in the traditional world of diplomacy.⁴¹

Modern international diplomacy, developed during the formative years of the United Nations in the Cold War period, does not seem well-tooled for many of the issues of today’s world.⁴² Attempts to “retrofit” environmental considerations to treaties are uneven. Problems such as environmental degradation, the impacts of free trade on specific environments, emerging diseases, terrorism and technology, and all those

that require knowledgeable interaction with science in general—the ecological sciences specifically—seem most intractable and will require new approaches to achieve viable tradeoffs among competing interests, and to establish peaceful resolution.⁴³ The kinds of problems to be solved require greater intellectual diversity than commonly encountered in international diplomacy. Biological systems are nested hierarchies, not autonomous components with linear interactions; treating them as such abstracts a complexity that further alienates them from orthodox international practices and instruments.⁴⁴

We believe that these previous efforts at definitions are insufficient because the biophysical world is neither a “sector” nor capital in any neoclassical sense, and consequently problems do not lend themselves to resolution with the tools of traditional diplomacy.

Biological systems are also multidimensional, and interact with the physical world in ways we still are discovering. Moreover, environmental security and cultural security are increasingly considered to be global public goods essential to human well-being that transcend sovereignty.⁴⁵ This is perhaps one of the most significant changes that has appeared in the concept of security, a concept that is now less focused on sovereign states and more focused directly on people and the world’s natural resource base.⁴⁶

The Brundtland Commission concluded that the environment is the common thread that runs through everyone’s common future.⁴⁷ The linkages among environment, development, and conflict are complex and, in many cases, poorly understood. But a comprehensive approach to international and national security must transcend the traditional emphasis on military power and armed competition. The real sources of insecurity also encompass unsustainable development, and its effects can become intertwined with traditional forms of conflict in a manner that can extend and deepen the latter.

Environmental security is mutually reinforced by of the welfare the individual:⁴⁸

In essence...security applies most at the level of the citizen. It amounts to human well-being: not only protection from harm and injury, but access to water, food, shelter, health, employment, and other basic requisites that are due every person on earth. It is the collectivity of these citizen needs- overall safety and quality of life- that should figure prominently in the nation’s view of security...

In 1994 the United Nations Development Programme published its first Human Development Index, which defined human security, including environment as a component. The HDI is widely used by the United Nations and other donors to assess the development progress of countries. However, the measures of environment are limited.⁴⁹ Other indices have been developed to broaden the concept of environment in measuring human development. For instance, the “Human Security Index”, a

framework developed by the Global Change and Human Security Project (GECHS) further expands environmental indicators and the linkage to human welfare.⁵⁰ The GECHS group approached the environment as a non-linear, cumulative causality that leads to human insecurity and broader social concerns. There are other indices under development to similarly incorporate more indicative measures of environment, such as forest cover and birds, into measures of development.

Additionally important concepts of intergenerational and intragenerational equity are also implicit in environmental security:

Environmental sustainability is also closely connected with intragenerational equity. While the wealthy consume more resources overall, the poor tend to rely more heavily on the direct exploitation of natural resources than the rich. If they have no access to non-environmental resources—and so have limited capacity to adapt—they may have no choice but to engage in unsustainable uses of environmental resources.⁵¹

A definition of environmental security continues to evolve. Currently it is increasingly encompassing not only all of the parameters associated with the physical and biological components of the natural world, but also the imperatives of national security and individual well-being. Environmental security, however broadly and imperfectly defined, has been viewed as the “master metaphor” for an emerging post-industrial civilization.⁵² As the source from which services such as water, air, natural capital and other basic attributes emanate, the environment enables all human activity, and can serve as the fulcrum for preventive action and further initiate development activities in support of a “culture of peace” as envisioned by UNESCO in its Decade of Peace. A program endorsed by all living Nobel Laureates, it recognizes the role of environment. The culture of peace has not been yet attained, however, and environmental security potentially has dual roles as both the force and the target of conflict and national destabilization.

WAR AND UNEASY PEACE

International security in the twentieth century traditionally addressed sovereign states in relationship to one another, and looked to how alliances and interests come together or apart on that premise.⁵³ The end of the Cold War has given way to a “hot peace” in which most sovereign nations are at peace with each other, but are at war within. Since World War II there have been approximately 111 civil wars. Between 1989 and 1997 conflict became more fluid, and only seven of 108 active armed conflicts were international in scope.⁵⁴ Civilians are more directly engaged in conflict than in previous times, in part due to the easy, global availability of small arms. The canon of von Clausewitz in the first Geneva Convention of 1864, differentiating civilians from military, is no longer valid, a major shift from violent events earlier in the twentieth century.⁵⁵ In the 1990’s alone, approximately 5 million people became casualties, and 35 million people were displaced by civil wars. Women and children comprised a disproportionate number of the casualties, up to 90 percent in some circumstances.⁵⁶

The origins of the intrastate conflicts are complex and perplexing. Many of them have no clear beginning, last for years, drain resources, quickly become international, and destroy the potential of societies. The internal wars now last almost twice as long as conventional wars (33 months versus 18.5) and they resist settlement. The root cause of war itself is difficult to empirically pinpoint. Some studies have found that per capita scarcity of resources and their over-use damages resource capital, and leads ultimately to human mortality; another idea is that in the post-colonial world well-distributed economic opportunity tends to diminish the probability of conflict. Territorial disputes have been found by others to increase the probability of war, and, in at least one study, the occurrence of civil conflict in Africa is linked to the failure of states to provide public services such as health and education.⁵⁷

There are indications that the interrelationships among environment, cultural, and spiritual institutions are important in successful sustainable development.

Many problems reflect economic opportunism rather than grievance, with tangible primary commodities, such as natural forests, viewed as liquid assets for the taking. Clearly important in the cauldron of civil conflict, it is unclear if primary resources are causative or collateral factors in conflict. The trend in rapid, expansive environmental changes seems to parallel the growth of global civil conflicts and destabilization, but potential links have not yet been fully explored.⁵⁸ Little is known of how the accumulating changes, fast and slow, of environmental services are impacting people and their social, emotional and mental security on a daily basis that can be observed.⁵⁹

There are indications that the interrelationships among environment, cultural, and spiritual institutions are important in successful sustainable development.⁶⁰ For instance, indigenous and subsistence societies have collective, intergenerational understanding and traditional governance that enables them to maintain resilient and productive ecosystems over time. Moreover, there is a direct relationship between human linguistic diversity and biological diversity throughout the world. Loss of linguistic diversity significantly contributes to the destruction of traditional ecological knowledge, a profound loss of place and of spiritual and psychological continuity for traditional people. At the same time, there is a renewed interest in traditional knowledge as adaptive management, important tools for sustainable development.⁶¹ Losses of traditional knowledge and linguistic diversity can be socially and culturally destabilizing—when people lose personal relationship and spiritual contact and context with a particular region, leaving for a possibly better circumstance elsewhere in an urban area which just amplifies the adverse changes.

The destruction of the traditional knowledge library stored in people over centuries creates gaps in critical knowledge about restoration of diverse habitats, biodiversity, adaptive management and ecosystem functions, and diminishes intellectual diversity.

These consequences are particularly problematic following environmental destruction after violent conflicts and disasters. As has been evident in Nicaragua and other parts of Central America, however, many small communities have the knowledge, skills, and social organization to be central in healing damaged ecosystems and appropriately managing resources—but only if there is a community in place.⁶²

Human communities are under intense stress from the changing world precipitated by the globalization of economic and environmental affairs. Superficially, the stresses may appear to be religious or ethnic, but ultimately are often undelain by gross inequities and a rapid, overwhelming loss of their ecosystem life supports. Multilateral institutions such as the World Bank have lost billions of dollars to civil war, and are now having to invest additional billions in post-conflict and post-disaster reconstruction. For instance, direct economic costs to outside powers as a result of the civil war and subsequent economic aid in Cambodia during the Cold War and the post-Cold War era have been estimated at US\$14.9 billion.⁶³ In Rwanda the total costs to external entities from 1994 to 1998 for humanitarian, economic and military aid, plus other assistance from individual nations, approximated US\$4.5 billion. If preventive actions had been taken in Rwanda, the massive state failure might have been avoided and lives saved, along with an estimated US\$3.2 billion. Economic losses from the Guatemalan civil war have been estimated at \$10 billion between 1980 and 1989. This figure does not include estimates for other losses, such as lives, physical injuries or loss of foreign investment.⁶⁴

The linkages between the health and well-being of individuals are increasingly thought to reflect the true viability of the state, in part attributable to the state of its resources.

Destructive land use practices are interacting with natural events to wreak massive environmental failures, an increasing challenge in the new security equation. The costs of natural disasters in 1998 alone exceeded the cost of all such disasters in the entire decade of the 1980's. Damages overall were greatly amplified by the increased ecological marginalization of the poor.⁶⁵

The linkages between the health and well-being of individuals are increasingly thought to reflect the true viability of the state, in part attributable to the state of its resources.⁶⁶ Most of the population classified by the World Bank as low-income/ biomass-based subsistence economies are rural and highly dependent upon local economies and resources.⁶⁷ For instance, biodiversity in the Andes and Amazonia is both a crucial local process and a local and global public good—encompassing food security, health care and environmental resilience for the communities in the region, and an important area for biodiversity globally.⁶⁸ Viewing biodiversity, however, as only a global resource or for primarily economic good alone, can fail to account for the important local uses and meanings critical for peace and stability among indigenous,

traditional, and subsistent peoples. In turn, this can precipitate global problems as well. Economics is said to be at its most luminous when it emerges directly from life's experience, especially if it reflects the facets of social good and worth. Absent these qualities, the character of economics can have unanticipated adverse impacts on ecosystems and their stability and resilience.⁶⁹ Thus, the impacts to local values and local stability have global implications if the security of ecosystem structure and services is viewed as a security issue at several scales.

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Moreover, environmental security, food security, and political conditions are all further linked by subtle, interrelated natural processes that are not usually visible and grossly undervalued. For instance, agriculture is heavily reliant on ecosystem services.⁷⁰ As ecosystems are degraded and services impaired, suites of pollinator species are being lost worldwide, and the interlocking threads are unraveling. The trend indicates a threat of new dimensions to both food security and the continuation of native flora in general.⁷¹ More than thirty genera of animals are needed to pollinate the 100 or so crops that essentially feed the world. More than 100,000 to 200,000 different animal species are important for pollinating 250,000 wild plant species.⁷²

Insects, including 40,000 wild bee species, and other invertebrates are critical to pollination. Forest fragments in Costa Rica were found to have lost almost 50 percent of their wild bee species, important pollinators in those forests, in just fourteen years.⁷³ Many of the pollinating species are migratory, and their environmental interactions are unknown, or known only for a very few. In the tropics, animals are also key pollinators, and even fishes in streams are important to seed dispersal.⁷⁴ Inequities, conflict, and declines in the fabric of biodiversity are significant contributing factors to food insecurity. Food, environment, and social conditions are inseparable.⁷⁵

ECOSYSTEM SECURITY: EXAMPLES OF FORESTS

Forests have been a difficult topic for the world community since the first United Nations Conference on Environment and Development in 1992. The "Forest Principles" were a non-binding product of the 1992 meeting, an international acknowledgement that forests are very important. Depending upon the perspective, the Principles could also be viewed as reflecting the difficulty in bridging the divide between forests as a product sector, and forests providing essential ecosystem services and the conservation of biological diversity. The underlying causes of deforestation have accelerated since 1992, multifaceted and deeply interconnected with other aspects

of communities and states.⁷⁶

In this paper, the term forests broadly refers to a diverse set of ecosystems with distinct geographies, evolutionary history, climate, and extent of human impact. Natural forests are essential to the life of the planet, and determine the continuity and stability of major biogeochemical cycles. Covering 40 percent of the earth's terrestrial surface, forests harbor 80 percent of the world's biodiversity, and are crucial to generation and maintenance of freshwater flows. Moreover, they are key to atmospheric maintenance, and have become central in international debates about climate change, greenhouse gas emissions and carbon sequestration. About three times the amount of carbon than currently present in the atmosphere occurs in forests.⁷⁷

We are just beginning to understand the services of biodiversity in different kinds of forests and what the accumulating loss of species may mean in terms of ecosystem functions and different timeframes.⁷⁸ About 80 percent of the earth's original forests were cleared, fragmented or otherwise degraded, primarily in the twentieth century.⁷⁹ The largescale landscape degradation and subsequent biological devaluation forest resources, including loss of old growth, has led to major watershed disruption. Water quality has declined and aquatic organisms used by the poor have disappeared.

Changes in forest ecosystem health and composition beneath the tree tops are often overlooked because they are not readily apparent from satellite imagery. Consequently, global measures of deforestation by the United Nations Food and Agriculture Organization do not necessarily reflect the degradation of forest ecosystems where there is still cover.⁸⁰ The sub-canopy impacts to structure and other ecological facets of forests have been referred to as "cryptic deforestation."⁸¹ It is the result of multiple cumulative adverse changes, including ground fires set by people, accelerated poaching, defaunation, mining, poor management practices, and overgrazing. Subsequent changes in sub-canopy structure and composition erode the services of natural forest ecosystems, such as habitat for neotropical migratory birds throughout the Americas.⁸²

Forest loss and fragmentation may be contributing to higher incidences of disease. For instance, increases of malaria and leishmaniasis are attributable in part habitat changes that are the result of deforestation, creating new habitat that promotes the disease-carrying insects.⁸³ Other diseases are emerging from ecosystem fragmentation that impacts wildlife but which may or may not directly impact people. Pathogens are on the rise across all ecosystems, including oceans and aquatic ecosystems. Episodes of toxic algal blooms have increased, and there is increasing transport of cholera as well as development of conditions for variants that are drug resistant.⁸⁴ The emergence of 30 or so new diseases since 1990 is viewed as evidence of the increasingly heavy human footprint that is rapidly changing ecological conditions, aiding the ability of emerging diseases to evolve in step with maximum impacts to people and perhaps even other species.⁸⁵ Emerging diseases are a security "threat" that require a whole different knowledge and approach than traditional security threats faced by countries.⁸⁶

A different but related consequence of ecosystem fragmentation and transformation includes invasive species—non-native species accidentally or deliberately introduced

into new environments where they impact or wipeout native species—with increasing consequent economic losses from their presence. Forests and almost all other ecosystems are further compromised by increasing non-native species as fragmentation and degradation occur. Agricultural losses worldwide from bioinvasions have been estimated to range from \$55 billion to \$248 billion yearly.⁸⁷ Also, many people who are subsistent rely on native plants as part of their medical system. Loss of native plants, their nutrients and medical benefits, confer further degradation to human security.

There are concerns even for the still expansive forest ecosystems. For instance, boreal forests are the most extensive forests of the Northern Hemisphere, and heavily relied upon for timber. Boreal forest will be affected by small rises in temperature from climate change. Many of the world's northern rivers flow wholly or in part through boreal forest, and the lakes are estimated to contain about 80 percent of the world's unfrozen freshwater.⁸⁸ Birds comprise about 70 to 75 percent of the vertebrate fauna. Many of the species are long-distance, seed-dispersing migrants to other regions, but in order to live they must have boreal forest in their lifecycle. The diversity of birds is being reduced through logging and other human impacts. The ecosystem services provided by birds, such as control of insect populations, are declining. Generalized and opportunistic species that do not provide many services are increasing.⁸⁹ Moreover, boreal aquatic systems are showing increasing acidification and toxic pollutants with declines in fisheries.

Similar landscape impacts can be found in all types of forests.⁹⁰ For instance, approximately 50 percent of temperate “ruil” forest, a unique broadleaved, moist forest now restricted to a narrow band of fragmented landscape in coastal south-central Chile, was lost from 1981 to 1991 primarily because of the expansion of Monterrey pine plantations.⁹¹ The deforestation rate to accommodate the plantations is very high, approximately eight percent per year. Fifty percent or more of the plants, insects, and amphibian species in ruil are found only in that forest. Loss of habitat and further fragmentation are having a significant impact on biodiversity in the region, and even beyond if one considers migratory species.⁹² Ruil harbors many unique birds and about 20 percent of the endangered trees in Chile. As in other forest systems, seed dispersal and pollination have been impaired, severely curtailing the chances of tree reproduction.⁹³ The pine plantation, with basically only one species of tree, does not replace the diverse biological services of the intact native forest. It is a highly simplified, industrial forest that requires greater energy input, maintenance, and human intervention. The expansion of the plantations is also associated with social conflict in the area.

Examples of deforestation and biological debts can be seen all over the world. Lake Tanganyika, one of the Great Lakes of Africa, is the largest body of water in Africa, thought to be the most diverse lake on earth. Four countries (Burundi, Tanzania, Zaire, and Zambia) form its immediate watershed of 250,000 km², with 7 to 10 million people living within its reaches. The African Great Lakes region encompasses extraordinary biodiversity that has high priority for international conservation. However, deforestation is extensive. The diverse, endemic forest ecosystems outside

of protected areas have been largely transformed to cassava and banana cultivation. The Lake has been inundated with sediments from hillside erosion, and lake organisms have been adversely affected.⁹⁴ Suspended sediments in the water may be causing bacterial growth, which depletes oxygen in the water, and organisms along the shorelines are disappearing, affecting birds and small mammals. The Lake's reserve of biodiversity is being eroded and the livelihoods of people who depend upon on lake resources are impacted.

As a final example, patterns of deforestation and serious biological debt are also evident in the Northwest Frontier Province of Pakistan (NWFP). Essentially arid and mountainous, the NWFP had diverse forest types from blue pine to xeric oak. It is still an important wildlife area, with populations of snow leopard and brown bear, many endemic fishes, important portions of the Asian migratory flyway, and other biodiversity in the forests of the Siran Valley. Indus dolphins have been known in the upper reaches of the Indus River. There is also hunting pressure in the area.

One of the ways the British colonial past impacted the NWFP was through heavy historical emphases on logging. This legacy of bad economic practices has continued, and is characterized by graft, corruption, forest exploitation, and extensive deforestation.⁹⁵ Ironically, per capita timber use in NWFP is the lowest in the world but deforestation is the second highest because of exploitative logging. Today, 90 percent of traditional forest rights, most which are customary, are in dispute. At least one study has confirmed the strong influence of poverty and environmental insecurity on the high internal rate of migration within Pakistan.⁹⁶

Forests are important for subsistence and resilience in livelihoods for a large number of people throughout the world.

The Siran Valley of the frontier area, encompassing 75 percent of the country's dry forests, became the primary destination for the settlement of the majority of the 3 million refugees of the Soviet-Afghan war. About 1.2 million of the original settlers still remained prior to the recent conflict in Afghanistan. Refugees were mostly nomadic and are estimated to have brought in 10 million head of livestock. Over a fourteen year period the dry tropical forest declined by 40 percent from agricultural clearing, fuel wood harvest, and excessive tapping for resin.⁹⁷ Eventually, agricultural viability was also lost. Infant and child mortality have remained high, close to 60 percent, due to continuing environmental degradation and waterborne diseases.

It is in the Northwest Frontier Province that the mudrasa education system of fundamental, militaristic Islam has taken hold. The education is free, and sometimes parents are even paid with funds from the state, and increasingly receive private funds, for sending their children.⁹⁸ With the collapse of agriculture, opium poppies have flourished as a cash crop. Peshawar, in the heart of the Golden Crescent drug trade, is the most viable economic outlet for many people. Seasonal migration from refugee

camps has swamped the city, exacerbated ethnic rivalries, and led to dramatic increases in drugs, weapons, and violence.⁹⁹

Forests are important for subsistence and resilience in livelihoods for a large number of people throughout the world. Reliable estimates of the worldwide subsistence forest economy, including non-timber products and services, are not available. Nevertheless, large-scale, cumulative loss and degradation of natural forests are contributing to migration and concentration in urban areas, as well as to loss of biodiversity and ecosystem services.

Continuing trends have broad implications for the lives of future generations, their environmental quality, and the realistic possibility of attaining sustainable development. By 2030 about three-fifths of the world's population will be living in megacities where environmental and/or other costs and damages will also be likely to accrue. Health hazards, psychosocial deterioration and conflicts are also expected to rise dramatically. Much of the displacement is attributed to landscape deforestation in areas where the people have been subsistent or highly resource dependent on one or two major resources.¹⁰⁰

ENVIRONMENT AND HUMAN SECURITY

There are growing indications that natural ecosystems such as forests, in combination with other factors, including rank on the UNDP Human Development Index, set up the conditions for destabilization, conflict, and other indications of social disruption as well as further environmental damages. Where there is natural resource wealth there is also a tendency toward inequity between elites, who concentrate resource wealth such as forests, and the poor.¹⁰¹

The increasing social and environmental vulnerability that rapid deforestation precipitates in communities has been empirically associated with violent civil conflict. In circumstances where resource inequity is exaggerated, incentives for investment in social capital, such as education, are low. The demand for education drops as well, and a low level of education in turn increases the likelihood that young men will join in rebellions. Economic issues, rather than grievances, appear to be more predictive of conflict.¹⁰²

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Deforestation has been found to be directly related to the rule of law in 120 countries, with general lawlessness and other governance factors key in the path to deforestation. The “disinvestments” in forest ecosystems appears to be directly reflective

of a breakdown in governance.¹⁰³ One of the purposes of states is to do what individuals cannot do well nor guarantee-provide public goods, such as clean water, clean air, biodiversity and other ecosystem services, and a healthy environment. Without protection of the most fundamental underpinnings of human life, a state is bound to fail. State services, including security, health care, and education are similarly critical public goods.¹⁰⁴

An empirical, statistical review of the bottom countries on the Human Development Index, the UNDP report mentioned earlier revealed that forests and subsistence agriculture, closely associated with a country's rank on the HDI, are significant elements associated with destabilization and conflict. It was possible to statistically and accurately predict which countries would be in civil war by using forest and agricultural status.¹⁰⁵ In a similar study, the State Failure Task Force Report, the authors found that there were indications of deforestation as a significant factor that may underlay or may predict looming social disintegration.¹⁰⁶ In focusing on who profits, it appears that primary commodities, such as forests, are good proxies for lootable resources that invite rapid economic exploitation, the essential fuel of civil war. For instance, civil war in Cambodia lasted about 30 years. During that time looting of natural resources to fuel the war was rampant. When the conflict subsided, the United Nations Transitional Authority came in to help the country reorganize and rebuild. The Authority found over time that there was a serious threat to the environment and economic future of Cambodia from the continuing pattern of overexploitation of natural resources, particularly in forests and minerals.¹⁰⁷

Natural resources availability, especially primary commodities such as forests, has one of the strongest effects on the incidence of conflict as well as the duration of conflict.

In January 2002 a logging moratorium was declared for all of Cambodia as part of a strategy to address the widespread, ongoing illegal activities. Large-scale, continuing impacts have accrued in the watershed of the Mekong River within the country. The river flows through China via the Tibetan Plateau, down through Vietnam, Laos, Thailand and Cambodia. About 50 million people live in the river's lower reaches, encompassing Cambodia. Deforestation is an issue throughout the water body's course, but it has been noticeably high in the river sections above Tonle Sap within Cambodia. The largest freshwater lake in Southeast Asia, the fishery of Tonle Sap is important to millions of people. Nevertheless, upper watershed degradation, particularly deforestation, has caused the lake to fill with sediment, and fishing conflicts are becoming more frequent. It is important to note that the military has been key in participating and promoting the liquidation of the Cambodian forest estate. Similar patterns of military involvement are found elsewhere in the world and includes paramilitary and other private security forces in resource-rich areas.¹⁰⁸

Natural resources availability, especially primary commodities such as forests, has

one of the strongest effects on the incidence of conflict as well as the duration of conflict.¹⁰⁹ A recent overview of 139 countries confirmed a strong predictive link between deforestation, natural resources, and conflict.¹¹⁰ Moreover, fighting was found to be prolonged in countries with forests. It may be that forest cover makes it difficult for a government to put down a rebellion and may prolong the duration of conflict. No one has explicitly studied whether or not the fighting may be extended due to the lure of forests as the war prize. It has also been found that in countries with a high level of dependence upon primary commodity exports there is a risk of conflict that is four times greater than in countries with more diversified economies and less dependency on primary commodities.¹¹¹ Rapidly realized profits to an elite few in these circumstances may become so attractive that there is little motivation for peace.

While the emerging linkages between civil conflict and natural resources are informing the world about the role of primary commodities in many societies, there is also an emerging link with the status of ecosystems themselves. The rampant deforestation associated with those findings can be demonstrated to be causative and regionally and globally cumulative in a downward spiral of ecosystem loss and impacts to biodiversity as well as people.

CONCLUSIONS

While the precise roles of the environment in peace, conflict, destabilization and human insecurity are still being debated, there are growing indications that it is an underlying cause of instability, conflict, and unrest. It is thought that there is a “masking effect”, in which the political and economic causes of unrest, violence, conflict and destabilization actually obscure the underlying environmental causes.¹¹² As one author has so clearly stated:

It may be the social, economic, and political repercussions of environmental change—rather than the change itself—that are the most important determinants of conflict over the environment...Providing human security is about strengthening the social and environmental fabric of societies and improving their governance...¹¹³

We think that recent findings of the role of forests in the world's civil conflicts, considered together with what we know is occurring globally from the broader environmental point of view, provide important evidence of a critical relationship of people with their environment that has long been overlooked by the nation-state system of sovereignty. Historically, the wealth of nations has been expressed as a reflection of produced goods and their flow, usually expressed as GDP or GNP. Many people in the developing world, however, are not part of measurable market forces and instead are highly subsistent or partially subsistent, depending directly upon surrounding ecosystems for livelihood alternatives and resilience.¹¹⁴ It is unlikely that they will all be totally converted to market economies in the near term, making them continually subject to the vagaries of environmental degradation and loss of resilience in livelihoods. In marginal ecological areas or in areas that are being rapidly degraded,

entire peoples and their ways of life are threatened, with on-going losses in natural resources and ecosystem services, as may be seen in the Mesopotamian wetlands and in the NWFP of Pakistan.

The worldwide loss of biodiversity and accelerated degradation of all environments appear to parallel the conflicts characterizing the twentieth century, especially as it transitioned from interstate to intrastate struggle and violence. This, too, merits some careful exploration to evaluate if there are additional lessons to be learned about people and environmental destabilization over longer time periods. No one knows exactly what is causing the significant shift, but there appear to be strong links between civil strife and forests degradation and loss. Whether or not the environment has fueled conflict or is a victim of conflict remains to be determined. Either way, the result can only be one of diminishing returns and continued accumulation of biological debts that will the burden of future generations across ecosystems of all types.

While society deepens its understanding of the earth's biophysical realities and limitations, environmental governance remains in its infancy. Maturity and change will be facilitated when environmental scientists expand their own world view and transfer ecological knowledge into other parts of society. The environmental and orthodox international affairs communities are struggling to work with each other as well as find ways to match multi-scale, complex resource issues with the historic structure of sovereignty at a global level.

While the precise roles of the environment in peace, conflict, destabilization and human insecurity are still being debated, there are growing indications that it is an underlying cause of instability, conflict, and unrest.

The discussions held at the 1972 United Nations Founex Conference and the concepts articulated by the Brundtland Commission in *Our Common Future* were visionary and ahead of their time. Environmental security is increasingly understood to be crucial for human security and perpetuation of natural ecosystems. It is equally essential to ensure the perpetuation of resources for their non-material benefits, such as inspiration, cultural values, and spiritual meanings. Extended conflict is an increasing fact, a waste of natural resources materials, people, and potential, curdling development options and the reasonable growth of economies. It is an impoverished expression of economic imperative born of inequity and the breakdown of societal gender-equitable investment in people.

As may be seen in the environmental history of the Northwest Frontier Province of Pakistan, environmental degradation also impacts food security, with a cascading effect on local human conditions. It leads to migration from rural areas of food production and gathering to urban areas of food consumption and related services. It leads as well to increasing poverty and disease. In biological terms, the rural human community is pushed from traditional producer roles into more resource-demanding

consumer roles. Clearly, investment in the environment is an investment for people to have resilience and options to poverty.

Changing the trajectory of the joining of resource degradation and civil conflict will require international convocation of the traditional peace and security community, development communities, and scientific communities. Working together they will have a powerful scope to develop a greater understanding of the intersection of conflict, human development, different ecologies and measures of development.

Environmental security is central to national security, comprising the dynamics and interconnections among the natural resource base, the social fabric of the state, and the economic engine for local and regional stability.

There are already indications that multidisciplinary efforts are being contemplated and accompanied by research agendas. For instance, some have identified the important linkages of economic and financial imperatives of development with social goals, and there is a proposed peace research concept that would include, to some unspecified degree, environment. There is a European analysis utilizing remote sensing and satellite observation techniques to bring together information on security and the environment, and another proposing to research climate change and human security. In 2002 a seminar of the Swedish Johannesburg Secretariat considered how to link security and sustainable development. The nexus of environment and conflict, especially in post-conflict reconstruction, is not yet clearly on the World Bank's agenda, nor that of the other Bretton Woods Institutions.¹¹⁵ However, on behalf of Bretton Woods, the World Bank could call upon its partnership in the Global Environmental Facility to engage in an initiative that includes a deeper look into the intersection of environment and conflict, especially relative to structural adjustment, other monetary vehicles, and human rights. There is also a need for the regional bank infrastructure to be involved in similar efforts. There may need for greater investment to correct the underlying causes of conflict early after cessation of conflict, which may include addressing natural resource inequities, land tenure, the need for new techniques of environmental restoration and protection, and interventions to avert environmental degradation.¹¹⁶ Potentials for ecosystem restoration also need to be fully addressed. The UNEP already has a division of Early Warning and Assessment that is capable of bringing focus to this arena.

Environmental security is central to national security, comprising the dynamics and interconnections among the natural resource base, the social fabric of the state, and the economic engine for local and regional stability. Existing institutions, such as the Global Environment Facility, the United Nations Environment Program, UNESCO and others in the NGO and private sector communities, could greatly further the world's understanding of the linkages between environment and human security by integrating existing programs. These include monitoring of geo-referenced

security information that is integrated into environment projects, and development of early warning systems linked to changing environmental quality and ecosystem health. It is currently difficult to interrelate security and conflict information as it is collected and archived with geo-referenced biological information.

In 2001 the United Nations Security Council undertook a study of the situation in the Congo. The expert panel found that the civil conflicts were enabling looting and profiteering on a large scale. Damages to wildlife and other natural resources were rampant.¹¹⁷ While the materials gained in these exploitations of conflict are feeding into a kind of “economy,” only a very few people are benefiting at the waste and expense of many others, squandering current and future potential for civil society. At the first meeting of the United Nations Permanent Forum on Indigenous Issues, a distinguished Batwa leader native to the Congo spoke sadly and poignantly about the plight of his group in the face of the on-going conflicts that are further aggravating their marginalization and destruction as a people. The indigenous Batwa people are suffering not just from the conflict but from health, environmental and spiritual destruction, as well as violation of human rights. Moreover, the slaughter of wildlife and plunder of natural resources by the parties in the African Great Lakes region belies the concept of ecological sanctuary in war zones. The United Nations High Commissioner on Human Rights recently held a meeting in Geneva in 2002 with an initial expert group to discuss the intersection of environment and human rights, an emerging issue that necessarily is directly related to resource overuse and inequity, as well as security of both the environment and people.

Prospects for human prosperity and growth in this new Millennium must take into account the environmental security issues we have raised in this paper:

*Global partnership in ecology and development has become a crucial factor as regards world peace....securing the natural bases of life over the long term will only be possible if we act in a way that takes account of the mutual dependence of the economic, social, and ecological components of development- in other words, if traditional environmental policy is integrated into all other areas of policy. Worldwide environmental and development policy is the peace policy of the future.*¹¹⁸

The environment alone does not determine the course of peace or conflict, but it is nevertheless a critical element woven throughout all human life. One research group tried to estimate the worth of the natural world's ecosystem services and came to the conclusion that the economic value of everything, based upon 17 ecosystem services for 16 biomes, was at least an average \$33 trillion per year.¹¹⁹ The estimate is based on a very limited accounting of ecosystem services based on what we know today.

New forms of governance are evolving that incorporate environment, a trend that may address the institutional disconnect alluded to earlier. The UN Convention to Combat Desertification (CCD), for instance, incorporated the opportunity for local and regional entities within the signatory countries to develop plans and ideas that they wanted to see considered in convention implementation. Non-governmental

organizations have been very active in the convention's unfolding, and official time is granted for NGO presentations within the Conference of Parties. Moreover, the CCD applies to ecosystems that are inherently similar.¹²⁰ There are also increasing efforts to create 'synergies' among the environmental conventions in recognition of their inherent scientific commonality. Although the Kyoto Protocol/Climate Change Convention was originally atmospherically focused, it has changed to acknowledge the realities of natural ecosystems in biogeochemical cycling and atmospheric maintenance.

New regional environmental efforts may provide innovative platforms for organization and bioregional management that will have more direct meaning on-the-ground while addressing global issues, such as treaty obligations.¹²¹ In 1989 the Central American presidents signed the Central American Commission on Environment and Development into existence, which recognized the common need to manage the natural resources of Central America. In further recognition of the state commonalities in natural resources, and the biotic diversity and importance of the region, the Mesoamerican Biological Corridor was established by a consortium of non-governmental groups and endorsed by regional heads-of-state at a summit in 1997.¹²² International funding from the Global Environment Facility, the World Bank, and the German GTZ have enabled its implementation.

Another important arena that needs to be addressed is trade. As globalization proceeds, it will be increasingly important for trade to be infused with concepts of environmental security and impacts. A recent effort in this direction includes the North America Commission on Environmental Cooperation formed parallel to North American Free Trade Agreement. It is the first broad environmental entity of its kind to be specifically linked with a trade agreement. The Doha Ministerial of the World Trade Organization has opened the door for broader consideration of environment and sustainable development within the trade arena. There is a great need for the development of scientifically viable techniques for determining the impacts of international trade on the natural environment, and it might be important for there to be an impartial group of environmental scientists to help guide the creation of a viable intersection between trade and natural resources as well as to help cross the disciplinary divide between trade and the ecological community.

The cooperative management of transboundary resources is another important area that needs to be addressed relative to conflict and environment. Interesting work is currently being undertaken by the little-known Cooperative Monitoring Center in nonproliferation at the Sandia Laboratories of the US Department of Energy in New Mexico.¹²³ They have been working in several countries to develop ways to diminish the potential for conflict around transboundary resources such as rivers and wetlands.

Environmental security is essential to human security and potential, and of key importance in sustaining ecosystem services as well as securing peace. Examples given here document the fact that there are many opportunities to avoid environmental damages and promote peace when the environmental, peace, traditional security, and development communities decide to come together and design new approaches to

conflict resolution and development.

When writer Ken Saro-Wiwa was speaking out about disgraceful environmental conditions impacting the homelands of the indigenous Ogoni in Nigeria, he was imprisoned by the ruling elite, with interests that were intertwined with transnational corporations, just for being outspoken. He was executed in 1995, something the world had thought an unimaginable possibility. The importance of non-governmental groups in the environmental security arena is critical, recently highlighted by the work of Global Witness and its African partners in investigating the conflict diamond situation, and nominated for a Nobel Peace Prize in 2002. Healthy ecosystems and equity in access to ecosystem services are now, and will remain, fundamental to peace and human security, and are the metaphor for this new Millennium.

Notes

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¹ G. Aldrich and C. Chinkin. "A Century of Achievement and Unfinished Work". *American Journal of International Law* V. 94, 2000, pp1-64.

² D. Arnold and R. Guha [eds.], *Nature, Culture and Imperialism: Essays on the Environmental History of South Asia* (Calcutta: Oxford Press, 1998). C. Ponting, *A Green History of the World* (London: Sinclair-Stevenson, Ltd., 1991).

³ A. Hochschild, *King Leopold's Ghost: A Story of Greed, Terror, and Heroism in Colonial Africa* (New York: Houghton Mifflin, 1999).

⁴ Hans Koning, "Notes on the Twentieth Century," *Atlantic Monthly*, vol. 280, September 1997, pp. 90-100.

⁵ J. Clark, "Economic Development Versus Sustainable Societies: Reflections on the Players in a Crucial Context," *Annual Review of Ecology and Systematics* vol. 26, 1995, pp.225-248. Kenneth Arrow et al., *Managing Ecosystem Resources* (Palo Alto: Stanford University, Faculty Paper Series 1999), Also, Beijer Discussion Paper No. 122, URL: <http://www.beijer.kva.se/publications/pdf.Archive>

⁶ US Fish and Wildlife Service. "Digest of Federal Resource Laws of Interest to the USFWS: Migratory Bird Treaty Act of 1918", URL: <http://laws.fws.gov/lawsdigest/migtrea.html>

⁷ Maurice Strong (ed.), *Conference on the Human Environment, Founex, Switzerland, June 4-12* (Berlin: Walter de Gruyter Publishers, 1973). Lester Brown, *Redefining Security* (Washington, DC: Worldwatch Institute, 1977).

R. Ullman, "Redefining Security", *International Security*, vol. 8, 1983, pp.129-153. Arthur Westing, *Global Resources and International Conflict: Environment Factors in Strategic Policy and Action* (New York: Oxford University Press, 1986).

⁸ Independent Commission on Disarmament and Security Issues, *Common Security* (New York: Simon and Schuster, 1982).

⁹ George Kennan, "Morality and Foreign Policy", *Foreign Affairs*, vol. 64, Winter 1985, pp 205-218. Jessica

Mathews, "Redefining Security", *Foreign Affairs*, vol. 68, Spring 1989, 162-177.

¹⁰ World Commission on Environment and Development (WCED), *Our Common Future* (New York: Oxford University Press, 1987).

¹¹ B. Byres, "Ecoregions, State Sovereignty, and Conflict", *Bulletin of Peace Proposals*, vol. 22, 1993, pp 65-76. J. Rioux and R. Hay, "Development, Peace and Security: the Possibilities and Limits of Convergence," *Development Express*, no. 6, 1996. WCED. *Our Common Future*.

¹² Drafting Panel on Sustainable Development and Preventive Diplomacy. *The Role of Science and Technology in Promoting National Security and Global Sustainability* (Washington, DC: Proceedings, Office of Science and Technology Policy, The White House, March 29, 1995). United Nations Environment Program, Division of Early Warning and Assessment. *Mesopotamian Marshlands: Demise of an Ecosystem* (Nairobi: United Nations Environment Program, 2002).

¹³ Tony Allan, "Avoiding War Over Natural Resources: Watershed War," *Forum*, November 1999, International Committee of the Red Cross, URL:<http://www.icrc.org>

¹⁴ Margaret Brusasco-Mackenzie, "Environment and Security," in Felix Dodds, ed., *Earth Summit 2002*, (London: Earthscan Publication, Ltd., 2000).

¹⁵ P. Harrison and F. Pearce, *AAAS Atlas of Population and Environment*, (Berkeley: American Association for the Advancement of Science and University of California Press, 2000). Peter Vitousek et al., "Human Domination of the Earth's Systems," *Science*, vol. 277, 1997, pp. 494-499. B. Turner et al., *The Earth as Transformed by Human Action* (Cambridge: Cambridge University Press, 1990).

¹⁶ Walter Reid, "Ecosystem Data to Guide Hard Choices," *Issues in Science and Technology On-Line*, 2000. URL: <http://www.nap.edu/issues/16.3/reid-htm> E. Aiyensu et al. "International Ecosystem Assessment," *Science*, vol. 286, 1999, pp. 685-686.

¹⁷ Å. Jansson, et al. "Linking Freshwater Flows and Ecosystem Services Appropriated By People: the Case of the Baltic Sea Drainage," *Ecosystems*, vol. 2, 1999, pp. 351-366. Arthur Westing, *Comprehensive Security for the Baltic: An Environmental Approach* (London: Sage Publications, 1989).

¹⁸ C. Folke et al. "Ecosystem Appropriation by Cities," *Ambio*, vol. 26, 1997, pp. 167-172. J. Switzer et al. "Land Cover and Population Density in the Baltic Sea Drainage: a GIS Database," *Ambio*, 1996, pp. 191-198.

¹⁹ V. Thomas et al., *The Quality of Growth* (Oxford: Oxford University Press, 2000).

Arrow et al. *Managing Ecosystem Resources*. C. Folke et al. "The Problem of Fit Between Ecosystems and Institutions," Working Paper No. 2 (Bonn: International Human Dimensions Program on Global Environmental Change, 1998). Clark, "Economic Development Versus Sustainable Societies."

²⁰ D. Schindler. "The Effects of Lost Biodiversity and Functioning of Species- Poor Ecosystems" (keynote address presented to the Conference on Healthy Ecosystems and Healthy People, June, 2002, Washington, DC). M. Scheffer et al., "Catastrophic Shifts in Ecosystems," *Nature*, vol. 413, 2001, pp 591-596.

²¹ Edward O. Wilson, *The Future of Life* (New York: Alfred Knopf, 2002).

²² G. Foster and L. Wise, "Sustainable Security: Transnational Environmental Threats and Foreign Policy," *Harvard International Review*, vol.21, Fall 1999, pp.20-23.

²³ Michael Klare, "The New Geography of Conflict," *Foreign Affairs*, vol. 8, May/June 2001, pp. 49-61.

²⁴ V. Quy et al., "Long-Term Consequences of the Vietnam War: Ecosystems," First Draft (Prepared for the Vietnam Environment Conference, Stockholm, July 2002). A. Galston, "The Legacy of Agent Orange," (paper for the First International Conference on Addressing the Environmental Consequences of War: Legal, Economic and Scientific Perspectives, Environmental Law Institute, Washington, DC, 1998). L. Lohmann (ed.), *Forests: Myths and Realities of Violent Conflict-Ecology, Politics and Violent Conflict* (New York: Zed Books, 1999).

²⁵ V. Quy, "Consequences of the Vietnam War." Food and Agriculture Organization (FAO), *Mangrove for Production and Protection: A Changing Resource System-Case Study in Can Gio District, Southern Vietnam* (Bangkok: FAO, 1993).

²⁶ J. Austin and C. Bruch (eds.), *The Environmental Consequences of War: Legal, Economic and Scientific Perspectives* (Cambridge: Cambridge University Press, 2000). J. Lewallen, *Ecology of Destruction: Indochina* (Baltimore: Penguin Books, 1971). Lohmann (ed.), *Forests: Myths and Realities*. W. Buckingham, Operation Ranch Hand: Herbicides in Southeast Asia 1961-1971. URL: [http://www/c\[cug.org/user/billb/ranchhand](http://www/c[cug.org/user/billb/ranchhand)

²⁷ J. Dudley et al. "Effects of War and Strife on Wildlife and Wildlife Habitats," *Conservation Biology*, vol. 16, 2002, pp 319-329.

²⁸ Dudley, "Effects of War." Arthur Westing, *Environmental Hazards of War: Releasing Dangerous forces in an Industrialized World* (Newberry Park, California: Sage Publishers, 1990). T. Formioli, "The Impact of the

Afghan-Soviet War on Afghanistan's Environment," *Environment*, vol. 22, 1995, 66-69. P. Zahler and P. Graham, "War and Wildlife: The Afghanistan Conflict and Its Effects on the Environment," (special paper prepared by the Snow Leopard Trust, URL: <http://www.snowleopard.org>, 2002).

²⁹ Austin and Bruch, *Environmental Consequences of War*. J. Sills, "Environmental Security: United Nations Doctrine for Managing Environmental Issues in Military Action," (special report of the Army Environmental Policy Institute, Atlanta, 2000). R. Juni and E. Elder, "Ecosystem Management and Damage Recovery in International Conflict," *Natural Resources and Environment*, vol. 14, 2000, pp. 193-197, URL:<http://www.geocities.com/Capitol Hill/Senate/4787/millennium/env-sec1.html>

³⁰ United Nations Environment Program and United Nations Center for Human Settlements, *The Kosovo Conflict; Consequences for the Environment and Human Settlements* (Nairobi: United Nations, 1999). D. Pearce et al. "Economic Views and the Environment in the Developing World" (Nairobi: Report to the United Nations Environment Program, 2000). N. Papovska and J. Sopova, "The Pollution of the Balkans," *UNESCO Courier*, vol.2, May 2000. URL: <http://www.unesco.org/Courier/2000>

³¹ Kurt Lietzman and Gary Vest, *Environment and Security in an International Context*, (Washington, DC: Committee on the Challenges of Modern Society, North Atlantic Treaty Organization, 1999) J. Glenn and T. Gordon, *State of the Future at the Millennium* (Washington, DC: American Council for United Nations University, 2000). Sills et al. "Environmental Security."

³² Dennis Pirages, *Ecological Security: Micro-Threats to Human Well-Being* (College Park, Maryland: Harrison Program on the Future Global Agenda Occasional Paper no. 13, University of Maryland, 1996).

³³ H. Soloman, *Toward the 21st Century: A New Global Security Agenda?* (Harare: International Security Studies, 1996).

³⁴ H. Kuman and E. Cousens, "Policy Briefing: Peace Building in Haiti," (New York: International Peace Academy, 1996).

³⁵ R. Väyrynen, *Environmental Security in a Conflict Zone: the Case of the Korea Peninsula* (Seoul: Korean National Committee for UNESCO, 1999).

³⁶ United Nations Secretary General Bulletin 6, August 1999, paragraph 6.3

³⁷ United Nations Press Release SC/6759 November 29th, 1999.

³⁸ Lietzman and Vest. *Environmental Security*.

³⁹ N. Graeger, "Environmental Security," *Journal of Peace Research* vol. 33, 1996, pp. 109-116. B. Rönnfeldt, "Three Generations of Environment and Security Research," *Journal of Peace Research*, vol. 34, 1997, pp. 373-482. C. Thomas, *Global Governance, Development and Human Security: The Challenge of Poverty and Inequity* (London: Pluto Press, 2000).

⁴⁰ J. Winnefield and M. Morris, *Where Environmental Concerns and Security Strategies Meet: Green Conflict in Asia and the Middle East* (Washington, DC: Rand Corporation, 1994).

⁴¹ C. Weinbar, *From Environmental Diplomacy to Environmentally Sound Diplomacy* (Washington, DC: American Institute for Contemporary German Studies, 1998).

⁴² Calestous Juma, "The UN's Role in the New Diplomacy," *Issues in Science and Technology On-Line*, Fall 2000. S. Forman, *Regionalizing the Multilateral System* (Washington, DC: Carnegie Endowment for International Peace, 1999). Folke, et al. "The Problem of Fit."

⁴³ Drafting Panel on Sustainable Development and Preventive Diplomacy, "The Role of Science and Technology." ⁴⁴ D. Brooks and D. McLennan, *The Nature of Diversity* (Chicago: University of Chicago Press, 2002).

Juma, "The UN's Role". Spector and A. Wolf, "Negotiating Security: New Goals and Changed Process," *International Negotiation* vol. 5, 2000, pp. 411-426.

⁴⁵ Inga Kaul et al. (eds.). *Global Public Goods: International Cooperation in the 21st Century* (Oxford: Oxford University Press, 1999). G. Daily et al. "Ecosystem Services: Benefits Supplied to Human Societies by Natural Ecosystems," (Washington, DC: Ecological Society of America, 1997).

⁴⁶ Margaret Brusasco-Mackenzie, "Environment and Security" in F. Dodds (ed.), *Earth Summit 2002: A New Deal* (London: Earthscan Publications, Ltd., 2000). Kh. Klubnikin et al., "The Sacred and the Scientific: Traditional Ecological Knowledge in Siberian River Conservation," *Ecological Applications*, vol. 10, 2000, pp. 1296-1306.

⁴⁷ WCED, *Our Common Future*.

⁴⁸ Norman Myers, *Ultimate Security: The Environmental Basis of Political Stability* (New York: WW Norton and Company, 1993).

- ⁴⁹ M. Ul Haq, *Reflections on Human Development* (Oxford: Oxford University Press, 1995). M. Ul Haq, "Development Cooperation for Global Human Security," *Soka Gakkai Internet Quarterly*. URL: <http://www.sgi.prg/english/archives/quarterly/9710/feature.html>. Amartaya Sen, "Why Human Security?" (paper presented at the International Symposium on Human Security, Tokyo, July 28, 2000).
- ⁵⁰ Steve Lornegan, "The Human Security Index", *Aviso* 6, January 2000.
- ⁵¹ The World Bank, *Monitoring Environmental Progress* (Washington, DC: The World Bank, 1997).
- ⁵² G. Dabelko and D. Dabelko, "Environmental Security: Issues of Conflict and Redefinition," *Environmental Change and Security Report*, vol. 1, pp.
- ⁵³ Spector and Wolf, "Negotiating Security." M. van Crevald, "Through a Glass Darkly: Some Reflections on the Future of War," *National War College Review*, vol. 53, no. 4, Autumn 2000, URL: <http://www/nwc.navy.mil/press/autumn>
- ⁵⁴ J. Stremlau and J. Sagasti, "Preventing Deadly Conflict: Does the World Bank Have a Role?" (Washington, DC: Carnegie Institute, 1998). J. Wallenstein, *Global Development Strategies for Conflict Prevention* (Uppsala: Uppsala University, 2001). J. Wallenstein and K. Axel, "Conflict Resolution and the End of the Cold War," *Journal of Peace Research*, vol. 31, 1994, pp. 333-349. Michael Renner, "Alternative Futures in War and Conflict," *Naval War College Review* Autumn 2000, vol. 53, no. 4, URL: <http://www/nwc.navy.mil/press/autumn>. Michael Renner, *Ending Violent Conflict* (Washington, DC: Worldwatch Institute, 1999).
- ⁵⁵ B. Jones and C. Cater, *Civilians in War: 100 Years After the Hague Peace Conference??* Indra de Soysa and Nels Gleditsch, *To Cultivate Peace: Agriculture in a World of Conflict* (Oslo: International Peace Research Institute, 1999).
- J. Stremlau and J. Sagasti. "Preventing Deadly Conflict."
- ⁵⁶ Allan Gerson, "Peace Building: The Private Sector's Role," *American Journal of International Law*, vol. 95, 2001, pp. 102-119. P. Collier, "Doing Well Out of War," (paper for the Conference on Economic Agendas in Civil War, The World Bank, Washington, DC, 1999; URL: www.worldbank.org)
- ⁵⁷ B. Walter and J. Snyder (eds.), *Civil Wars, Insecurity, and Intervention* (New York: Columbia University Press, 1999). W. Hauge and T. Ellingsen, "Beyond Environmental Scarcity: Causal Pathways to Conflict," *Journal of Peace Research*, vol. 37, 1998, p. 275. J. Maxwell and R. Reuveny, "Resource Scarcity and Conflict in Developing Countries," *Journal of Peace Research*, vol. 37, 2000, pp. 301-322. J. Vasquez and M.. Henahan, "Territorial Disputes and Probability of War," *Journal of Peace Research*, vol. 38, 2001, pp. 429-444. J. Azam, "The Redistributive State and Armed Conflict in Africa," *Journal of Peace Research*, vol. 38, 2001, pp. 429-444.
- ⁵⁸ E. Henderson and J. Singer, "Civil War in the Post-Colonial World," *Journal of Peace Research*, vol. 37, 2000, pp. 275. P. Collier, "Doing Well Out of War." P. Collier, "Economic Causes of Civil Conflict and Their Implications for Policy," (Development Research Group, The World Bank, Washington, DC.).
- ⁵⁹ P. Harrison and F. Pearce, *AAAS Atlas of Population and Environment* (Washington, DC: American Association for the Advancement of Science and University of California Press, 2000).
- ⁶⁰ Alfredo Sfeir-Younis, "Development Assistance: Spiritual and Moral Dimensions," *United Nations Chronicle*, vol. 1, 1999, pp. 66-68. Å. Jansson et al., "Sinking Freshwater Flows and Ecosystem Service Appropriated by People: The Case of the Baltic Sea Drainage," *Ecosystems*, vol. 2, 1999, pp. 351-366. Kh. Klubnikin et al., "The Sacred and the Scientific: Traditional Ecological Knowledge in Siberian River Conservation," *Ecological Applications*, vol. 10, 2000, pp. 1296-1306. Posey (ed.), *Cultural and Spiritual Values of Biodiversity* (Nairobi: United Nations Environment Program, 1999). K. Ebbe and S. Davis, *Traditional Knowledge and Sustainable Development* (Washington, DC: The World Bank, 1995).
- ⁶¹ Janis Alcorn (ed.), *An Introduction to Linkages Between Ecological Resilience and Governance: Lessons from Dayak of Indonesia* (Washington, DC: Biodiversity Support Program, 2000). Louisa Maffi (ed.), *On Biocultural Diversity: Linking Language, Knowledge and the Environment* (Washington, DC: Smithsonian Institution Press, 2001). D. Posey, *Cultural and Spiritual Values*. Fikret Berkes et al., "Rediscovery of Traditional Knowledge as Adaptive Management," *Ecological Applications*, vol. 10, 2000, pp. 1251-1262.
- ⁶² Dan Buckles (ed.), *Conflict and Collaboration in Natural Resources Management* (Washington, DC: IDRC and the World Bank, 2000). P. Girod, "Lessons from Hurricane Mitch: Natural Hazards, Vulnerability and Risk Abatement in Central America" (Washington, DC: IUCN World Conservation Union, 1998).
- ⁶³ M. Brown and R. Rosencrance (eds.), *The Costs of Conflict: Prevention and Cure in the Global Arena* (New York: Plowman and Littlefield, 1999).
- ⁶⁴ A. Gerson, "Peace Building."
- ⁶⁵ Kofi Annan. *We the Peoples: the Role of the United Nations in the 21st Century* (New York: United Nations, Office of the Secretary General. 2000).

- ⁶⁶ Jorge Nef, *Human Security and Mutual Vulnerability: the Global Political Economy of Development and Underdevelopment* (Ottawa: IDRC, 1999). Caroline Thomas and Peter Wilkin (eds.), *Globalization: Human Security and the African Experience* (Boulder: Lynne Rienner Publishers, 1999)
- ⁶⁷ World Bank, *The World Development Report: Building Institutions for Markets* (Washington, DC: World Bank, 2002). G. Barachaya, "Subsistence Economies and Institutions for Mobilizing Social Capital" (paper for the Foundations of a Market Economy, Villa Borsig Workshop Series, Bonn, Deutsche Stiftung für internationale Entwicklung (DSWE), 2000)
- ⁶⁸ J. Gari, "Biodiversity Conservation and use: Local and Global Considerations," (paper for the Center for International Development and Belfer Center for Science and International Affairs, Harvard University, Cambridge).
- ⁶⁹ P. Dasgupta, *Environmental and Resource Economics in the World of the Poor* (Washington, DC: Resources for the Future, 1997). P. Dasgupta, "Valuing Biodiversity" in *Encyclopedia of Biodiversity* (New York: Academic Press, 2000).
- ⁷⁰ G. Daily and P. Erlich, "Managing Earth's Ecosystems: an Interdisciplinary Challenge," *Ecosystems*, vol. 2, 1999, pp. 277-280. Daily et al. "Ecosystem Services."
- ⁷¹ G. Allen-Wardell et al. "The Potential Consequences of Pollinator Declines on the Conservation of Biodiversity and Stability of Food Crop Yields," *Conservation Biology*, vol. 12, 1998, pp. 8-17.
- ⁷² S. Buchmann and G. Nabhan, *The Forgotten Pollinators* (Washington, DC: Island Press, 1997).
- ⁷³ M. Ingrahm et al., "Our Forgotten Pollinators: Protection the Birds and the Bees," *Global Pesticide Campaigner*, vol.6, no. 4, December 1996, URL: <http://www.pmac.net/birdbee.htm>. M. Ingrahm and S. Buchmann, "Impending Pollination Crisis Threatens Biodiversity and Agriculture," *Tropinet 7*, volume 7, number 2, June 1996, URL: <http://www.atbio.org/v7v2/html>. G. Nahan (ed.), "Migratory Pollinators and their Corridors: Conservation Across Borders," (Tucson:Arizona-Sonoran Desert Museum,2000).
- ⁷⁴ O. Phillips, "The Changing Ecology of Tropical Forests." *Biodiversity and Conservation*, vol. 6, 1997, pp. 291-311.
- ⁷⁵ L. Thrupp, *Critical Links: Food Security and the Environment in the Greater Horn of Africa* (Washington, DC: World Resources Institute, 1999).
- ⁷⁶ Hans Verolme and Juliette Moussa, *Addressing the Underlying Causes of Deforestation and Forest Degradation* (Proceedings of the Intergovernmental Forum on Forests, Intercessional Meetings of the Underlying Causes of Deforestation and Forest Degradation, Costa Rica, January 1999, Bionet, Washington, DC).
- ⁷⁷ R. Watson et al., *Protecting Our Planet, Securing Our Future* (Washington, DC: United Nations Environment Program, 1998). A. Kinzig et al. (eds.), *The Functional Consequences of Biodiversity: Empirical Progress* (New Haven: Princeton University Press, 2002). David Schindler, "The Effects of Lost Biodiversity and Functioning of Species-Poor Ecosystems" (Keynote Presentation, Conference on Healthy People, Healthy Ecosystems, International Society for Ecosystem Health, June 7, 2002). S. Naeem et al., "Biodiversity and Ecosystem Functioning: Maintaining Natural Life Support Processes," (Washington, DC: Ecological Society of America, 1998).
- ⁷⁸ H. Mooney et al., *Functional Roles of Biodiversity: A Global Perspective* (London: Wiley, 1996).
- ⁷⁹ L. Brown et al., *Beyond Malthus: Nineteen Dimensions of the Population Change* (New York: W.W. Norton and Company, 1999).
- ⁸⁰ Ian Bowles et al., "Logging and Tropical Forest Conservation," *Science*, vol. 280, 1998, pp.1899-1900.
- ⁸¹ Dan Nepsted et al., "Large Scale Impoverishment of Amazonian Forests by Logging and Fire," *Nature*, vol. 398, 1999, pp.505-508. R. Rice et al., "Options for Conserving Biodiversity in the Context of Logging in Tropical Forests in Ian Bowles and Glen Pickett, eds., *Footprints in the Jungle: Natural Resource Industries, Infrastructure and Biodiversity Conservation* (Oxford: Oxford University Press, 2002).
- ⁸² D. Nepsted et al. "Large Scale Impoverishment."
- ⁸³ Peter Daszak, et al., "Emerging Infectious Diseases and Amphibian Population Declines," *Journal of Emerging Infectious Diseases*, v.5, no.6, November/December 1999, on-line: URL: <http://www.cdc.gov/ncidod/eid/vol5no6/daszak.htm> Peter Daszak et al., "Emerging Infectious Diseases of Wildlife-Threats to Biodiversity and Human Health," *Science*, vol. 287, 1999, pp. 443-449. T. McMichael, *Human Frontiers, Environments and Disease: Past Patterns, Uncertain Futures* (New York: Cambridge University press, 2001). R. Aguirre, et al., *Conservation Medicine: Ecological Health in Practice* (New York: Oxford University Press, 2002). J. Aron and J. Patz, *Ecosystem Change and Public Health: A Global Perspective* (Baltimore: Johns Hopkins University Press, 2001).
- ⁸⁴ Isabel Kinney Ferreira de Santos, "The Environment: Biodiversity, and Emerging Infectious Diseases,"

CERNAGEN/EMBRAPA, Brasilia . URL:[http:// www.bdt.org](http://www.bdt.org).

⁸⁵ C. Chyba, "Toward Biological Security," *Foreign Affairs* v. 81, May/June 2002, pp. 122-136.

⁸⁶ J. Eyles and R. Sharma, "Infectious Diseases and Global Change: Threats to Human Health and Security," *Aviso* 8, 2001. R. Mack et al., "Biotic Invasions: Cause, Epidemiology, Global Consequences, and Control," *Ecological Applications*, vol. 10, 2000, pp. 689-710.

⁸⁷ Nigel Sizer, et al., "Liberalization of International Commerce in Forest Products; Risks and Opportunities," (Washington, DC: World Resources Institute and the Center for International Environmental Law, 1999). C. Bright, *Life Out of Bounds: Bioinvasion in a Borderless World* (New York: Norton and Company, 1998).

⁸⁸ David Schindler, "Sustaining Aquatic Ecosystems in Boreal Regions," *Conservation Ecology [On-line]* vol. 2, 1998, pp. 18-46. URL: <http://139.142.203.66/vol2iss2>

⁸⁹ G. Niemi et al., "Ecological Sustainability of Birds in Boreal Forests," *Conservation Ecology [on-line]*, vol. 2, 1998, URL: <http://139.142.203.66/vol2iss2>

⁹⁰ T. Brooks, "Deforestation Predicts the Number of Threatened Birds in Insular Southeast Asia," *Conservation Biology*, vol. 11, 1997, pp. 382-394.

⁹¹ A. Grez et al. "Landscape Ecology, Deforestation, and Forest Fragmentation: the Case of the Ruil Forest in Chile," in E. Chávez and J. Middleton, *Landscape Ecology as a Tool for Sustainable Development in Latin America* (Ontario: Brock University, electronic book, 1998), URL: <http://www.brock.ca/epi/lebk/lebk.html>

⁹² R. Bustamante and C. Castor, "The Decline of an Endangered Temperate Forest in Central Chile," *Biodiversity and Conservation*, vol. 7, 1997, pp. 1607-1626. J. Armesto et al., "Plant/Frugivore Interactions in Southern American Temperate Forests," *Review of Chilean Natural History*, vol. 60, 1987, pp. 321-326. G. Cornelli et al., "The Effects of Habitat Fragmentation on Bird Species in a Relict Temperate Forest in Semiarid Chile," *Conservation Biology*, vol. 14, 2000, pp. 534-543.

⁹³ A. Grez et al., "Landscape Ecology." R. Bustamante and C. Castor, "Decline of an Endangered Temperate Forest."

⁹⁴ S. Alin et al., "Effects of Landscape Disturbance on Animal Communities in Lake Tanganyika, East Africa," *Conservation Biology* vol. 13, 1999, pp. 1017-1033.

⁹⁵ R. Matthew, *Environmental Stress and Human Security in Northern Pakistan*, "Environmental Change and Security Report", vol. 7, 2001, pp. 17-31.

⁹⁶ A. Gorla, "Environmental Security and Migration: the Role of Environmental Factors as Determinants of Migration Flows in Pakistan," *Fondazione Eni Enrico Mattei (FEEM) Newsletter* 3:4-8.

⁹⁷ M. Lodi et al., "Using Remote Sensing data to Monitor Land Cover Changes Near Afghan Refugee Camps in Northern Pakistan," *Geocarto International*, vol. 13, 1998: 33-39. Knudsen, A. Deforestation and Entrepreneurship in the Northwest Frontier Province, Pakistan (Bergen: Chr. Michelsen Institute, 1996)

⁹⁸ Jessica Stern, "Pakistan's Jihad Culture." *Foreign Affairs*, vol. 79, 2000, pp. 115-126.

⁹⁹ D. Vajpeyi (ed.), *Deforestation, Environment and Sustainable Development* (Westport: Praeger Publishers, 2001). Matthew, "Environmental Stress."

¹⁰⁰ Eleanor Brennan, "Population, Urbanization, Environment and Security: A Summary of the Issues," (Washington, DC: Woodrow Wilson Center for Scholars, 1999).

¹⁰¹ Guenther Baechler, *Violence Through Environmental Discrimination: Causes, Rwanda Arena, and Conflict Model*. (Dordrecht: Kluwer Academic Publishers, 1999). Michael Renner 2002. "Breaking the Link Between Resources and Repression," in C. Flavin et al., *State of the World Report 2002* (Washington, DC: Worldwatch Institute, 2002).

¹⁰² Indra de Soysa et al., *To Cultivate Peace: Agriculture In A World Of Conflict* (Oslo: International Peace Research Institute, 1999). B. Auty, 1997. "Natural Resource Endowment, The State And Development Strategy," *Journal of International Development*, vol. 9, 199, pp. 651-653 N. Birdsall et al. 1999. "Natural Resources, Human Capital, and Growth," September 6. Duke University. Unpublished. P. Collier, (1999). "Doing Well Out Of War" (Conference on Economic Agendas in Civil War, Washington, DC, The World Bank) URL: <http://www.worldbank.org>

¹⁰³ P. Collier, "Doing Well." R. Deacon, "Deforestation And The Rule Of Law In A Cross-Section Of Countries," *Land Economics* vol. 70, 1994, pp. 414-430. R. Deacon, "Assessing The Relationship Between Government Policy And Deforestation," *Journal of Environmental Economics and Management*, vol. 28, 1995, pp. 1-18.

¹⁰⁴ R. Rotberg, 2002, "Failed States In A World Of Terror," *Foreign Affairs*, July/August 2002

¹⁰⁵ Baechler. *Violence*

- ¹⁰⁶ D. Esty et al. "State Failure Task Force Report: Phase II Findings" (Washington, DC: Science Applications International Corporation, 1999).
- ¹⁰⁷ K. Malhotra, The political economy of natural resource conflict in the lower Mekong sub-region. *Development* vol.42, 1999, pp.20-26. R. Bottomley, "Structural Analysis of Deforestation in Cambodia," (Tokyo; Mekong Watch and Institute for Global Environmental Strategies, 2000) URL: <http://www.iges.or.jp>
- ¹⁰⁸ K. Talbott, "Logging in Cambodia: Politics and Plunder" in F. Brown and D. Timberman, *Cambodia and the International Community: the Quest for Peace, Development, and Democracy* (New York: The Asia Society, 1998) K. Talbott, and M. Brown, "Forest Plunder in Southeast Asia: an Environmental Security Nexus in Burma and Cambodia," *Environmental Change and Security Project Report*, vol. 4, 1998, pp. 53-60.
- ¹⁰⁹ Paul Collier and Anke Hoeffler "On the Incidence of Civil War in Africa." *Journal of Conflict Resolution*, February 2002, URL: <http://www.yale.edu/unsy/jcf2002.htm>
- ¹¹⁰ Indra de Soysa, "Paradise is a Bazaar? Greed, Creed, Grievance and Governance" (Helsinki:United Nations World Institute for Development Economics Research, 2001).
- ¹¹¹ Paul Collier, "Doing Well Out of War" (Conference on Economic Agendas in Civil War, The World Bank, Washington, DC, 1999) URL: <http://www.worldbank.org>
- ¹¹² G. Foster and L. Wise, "Sustainable Security: Transnational Environmental Threats And Foreign Policy," *Harvard International Review* 1999: 20-23.
- ¹¹³ Michael Renner *Fighting for Survival: Environmental Decline, Social Conflict and the New Age of Insecurity* (New York: Norton and Company, 1996).
- ¹¹⁴ G. Baracharya, "Subsistence Economies and Institutions for Mobilizing Social Capital" (The Foundations of a Market Economy. Villa Borsig Workshop Series. Bonn, Deutsche Stiftung für internationale Entwicklung (DSWE), 2000) World Bank. 2002. *The World Development Report: Building Institutions for Markets* (Oxford: Oxford University Press, 2002). World Bank. *Monitoring Environmental Progress*.
- ¹¹⁵ J. Wallenstein "The Growing Peace Research Agenda," (Indiana: University of Notre Dame, 2001). S. Pfahl et al. 2000. *The Use Of Global Monitoring In Support Of Environment And Security* (Report for the Joint Research Centre of the European Commission.Brussels, European Commission Joint Research Centre, 2000). S. Lornegan, *Global Environmental Change and Human Security Science Plan*, (Bonn: International Human Dimensions Program, 1999) E. Correll and L. Truedsson, *Linking Security and Sustainable Development: Report from a Seminar Arranged in Cooperation with the Swedish Johannesburg Secretariat* (Stockholm: Swedish Institute of International Affairs, March 15, 2002). D. Smith, and W. Ostreng. *Research on Environment, Poverty, and Conflict: a Proposal*. (Oslo:PRIO, 1997). Sfeir-Younis, "The role of the multilateral financial institutions," in Stockholm International Peace Research Institute (SIPRI), Swedish Foreign Ministry and the Swedish Institute of International Affairs, *Preventing Violent Conflict: The Search for Political Will and Effective Tools-Report of the Krusenberg Seminar*, June 19-20, 2000. URL: <http://projects.sipri.se/conflictstudy/Krusenberg.html>
- ¹¹⁶ F. Seymour, and N. Dubash, *The Right Conditions: World Bank, Structural Adjustment and Forest Policy Reform* (Washington, DC: World Resources Institute, 2000). L. Zarsky (ed.), *Human Rights and the Environment: Conflicts and Norms in a Globalizing World* (London: Earthscan, Ltd., 2002).
- ¹¹⁷ United Nations Security Council, *Report of the Panel of Experts on the Illegal Exploitation of Natural Resources and Other Forms of Wealth of the Democratic Republic of the Congo*. (New York, United Nations, 2001, S/2001/357).
- ¹¹⁸ Ingomar Hauchler et al., (1996). "Neverending Global Growth? In Andreas Gettkant and Burkhard Köntzner, *Scenario for the 21st Century: Visions for a New World Order*, (Bonn: Development and Peace Foundation, 1996).
- ¹¹⁹ R. Costanza et al., "The Value of the World's Ecosystem Service and Natural Capital," *Nature*, vol. 387, 1997, pp. 253-260.
- ¹²⁰ Kh. Klubnikin and D. Morafka, "Conventional Science: Potential for Ecosystem Conservation under the United Nations Convention to Combat Desertification," (Dakar: Global Biodiversity Forum 12, 1998).
- ¹²¹ M. Mc Ginnis, *Bioregionalism* (London: Routledge, 1999).
- ¹²² K. Miller et al., 2001. *Defining Common Ground for the Mesoamerican Biological Corridor*, (Washington, DC: World Resources Institute, 2001).
- ¹²³ V. Tidwell et al. 2001. "Integrating, Monitoring, and Decision Modeling within a Cooperative Framework: Promoting Transboundary Water Management and Avoiding Regional Conflict," (SAND 2001-0756. March. Sandia National Laboratories, New Mexico URL: <http://216.239.35/se.../010756.pdf+Howard+Passell+Sandia&hl=en&ie=UTF->

Humanitarian Intervention by Regional Organizations Under the Charter of the United Nations

by Kiho Cha

I. INTRODUCTION

The use of collective force originally envisioned that threats to peace and security would be manifested in a conventional military context, generally involving armed conflict across recognized state borders. In recent years, the Security Council has authorized hitherto non-traditional, “humanitarian interventions” in Somalia, Haiti, Rwanda, and the former Yugoslavia under Articles 41 and 42 of the UN Charter. These interventions, and the corresponding resolutions, form the foundation for enlarging the scope for defining what constitutes a credible threat or breach to international peace.

The steady erosion of traditional powers to expend their resources for any intervention, humanitarian or otherwise, has compelled regional actors to play a more robust role in implementing Council resolutions. In many cases, regional arrangements or agencies possess a potential that should be used in humanitarian interventions, particularly when the consequences of these violations cross international borders. Regional action as a matter of decentralization, delegation, and cooperation with complementary UN efforts would not only lessen the burden of the United Nations, but could potentially offer more effective means of conflict management.

The legal foundation for regional organizations to undertake enforcement actions is found in Article 53, Chapter VIII of the UN Charter, wherein the Security Council is granted the power to employ a regional agency under its authority for the implementation of coercive measures. This paper will examine the scope of Article 53 as posited by jurisprudential interpretation of the UN Charter, customary international law, and a newly evolving body of legal pronouncements on the ethical and moral dimensions of humanitarian intervention. It will also address practical considerations in the actual implementation of Article 53, introducing a set of guidelines for employing and adopting coercive measures by regional organizations in situations of grave humanitarian crises.

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II. THE SCOPE OF ARTICLE 53

Article 53 empowers regional organizations to develop enforcement measures as contemplated in the Charter. Paragraph 1 reads, in part:

The Security Council shall, where appropriate, utilize such regional arrangements or agencies for enforcement action under its authority. But no enforcement action shall be taken under regional arrangements or by regional agencies without the authorization of the Security Council.

The drafters of the UN Charter acknowledged the utility of regional actors in international conflict management. Article 53 of the United Nations Charter under Chapter VIII could be invoked to authorize regional arrangements for enforcement action although the Article further provides its limitation, that is, “no enforcement action shall be taken under regional arrangements or by regional agencies without the authorization of the Security Council.”

A. Enforcement Action

In its broadest formulation, “enforcement action” refers to all coercive action other than valid defensive action,¹ intending to cover any and all military measures as contemplated under Article 42 as well as nonmilitary measures under Article 41.² The regional system of collective security is generally co-extensive with the enforcement actions authorized and enumerated under Chapter VII. Although peacekeeping activities could be performed under various guises, if their mandate includes the authority to use coercive force, either against the sovereign power or against an insurgent group, it would constitute the use of “enforcement action” and thus come under the rubric of Article 53.

B. Regional Organizations

For purposes of this paper, regional organizations will be defined as a union of states closely linked in territorial terms or an international organization based upon a collective treaty, whose primary focus is the maintenance of international peace and security within the framework of the United Nations.³ There is general agreement that the Organization of American States (OAS),⁴ the Organization of African Unity (OAU) and the League of Arab States⁵ all possess the necessary attributes to be conferred the status of regional organization.

It is widely recognized that the Security Council has primary subject matter jurisdiction on issues related to the maintenance of international peace and security, in accordance with the powers conferred on it under Article 24, while regional organizations exercise subsidiary jurisdiction:

There is overwhelming support for a Charter interpretation that the United Nations has jurisdiction over all matters affecting international peace and security and that deference to regional jurisdiction is a matter of pragmatic judgment rather

*than Charter requirement.*⁶

As such, the Security Council would seem to have authority under Articles 24, 25, 39, 51, 52 and 53 taken together, to revoke regional jurisdiction by adopting a resolution condemning its action in the handling of any issue affecting international peace and security,⁷ thereby terminating its authority. Both Articles 51 and 54 create a comprehensive obligation for regional arrangements to report their activities to the Security Council.

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Article 53 postulates that the constitution of the regional organization should be in conformity with the enforcement measure contemplated. Hence, the activity of the regional organization under Security Council authorization may not be *ultra vires*, i.e., it cannot exceed the scope of powers defined by its own charter. It is understood that the provisions in a regional charter could not, under any circumstances, contravene the UN Charter; if so, Article 103 would make UN rights and obligations preeminent should they come into conflict with the provisions of a regional charter.

C. Humanitarian Intervention as Enforcement Action

“Humanitarian intervention” has been defined as the threat or use of armed force without the agreement of the target state to address a humanitarian disaster, in particular caused by grave and large-scale violations of fundamental human rights.⁸ These infringements may manifest themselves in the form of crimes against humanity, genocide and war crimes, including enslavement, arbitrary and summary executions, torture, cruel, inhuman or degrading punishment, rape, mass deportations, involuntary disappearances, and “ethnic cleansing.”⁹

Recent UN resolutions have authorized humanitarian interventions under Chapter VII in response to large-scale violations of human rights, thus giving a broad interpretation of Article 39 of the Charter. The Security Council in resolution 755 (1992) charged NATO with the task to create “the necessary conditions for the unimpeded delivery of humanitarian supplies,” in particular with supplying food, supporting the besieged city of Sarajevo and establishing a security zone encompassing Sarajevo and its airport. In UN Doc. S/24540 (1992), the Security Council called upon states to take the above measures “nationally or through regional agencies or arrangements.” This example was later followed by the adoption of resolutions authorizing Chapter VII operations in Rwanda¹⁰ and Haiti,¹¹ both of which noted the humanitarian character of the authorized operation. In Somalia, the Security Council authorized intervention in an essentially internal conflict under the terms of

Chapter VII without invoking possible international dimensions of the conflict.¹²

There is thus an emerging body of law, with numerous Security Council resolutions as its underpinning, to treat humanitarian interventions as valid enforcement measures contemplated under Chapter VII.

D. Humanitarian Intervention Absent Explicit Prior Security Council Authorization

It has been argued that it is reasonable to interpret Article 53 to mean that Security Council authorization of “enforcement action” need not be prior authorization.¹³ Meeker relies on the 1960 “Dominican Republic” case in which the Soviet Union proposed Security Council authorization of the OAS sanctions after these sanctions had already been imposed.¹⁴ Moore also argues that “there seems to be no policy reason why the Security Council cannot authorize regional enforcement action at any stage, whether before or after such action has been taken.”¹⁵

Members have also contended in the past that regional players are permitted to take “not-unauthorized” enforcement action. For instance during the Cuban Missile Crisis of 1962, the United States argued that the failure of the Council to disapprove regional action, and allow the quarantine to continue, amounted to authorization within the meaning of Article 53. Similar arguments could be advanced for the recent military campaign in Kosovo. NATO did not obtain the required Security Council authorization *before or after* its intervention, and the Security Council did not take action to either condemn or disavow NATO’s unauthorized action.¹⁶ Also, the United States and the United Kingdom have maintained no-fly zones in Iraqi airspace to prevent large-scale repression of Kurds in the north and Shi’ites in the south without authorization by the Security Council resolutions that ended Operation Desert Storm. In Liberia, Economic Community of West African States (ECOWAS) undertook an enforcement action in an essentially civil conflict without the proper authorization of the Security Council, and later justified by invoking “collective self-defense” under Article 51¹⁷ and based on the tacit approval of the Council inferred from its silence.¹⁸ Such independent recourse to the use of force, usually in the exclusive domain of the Security Council, may signal a shifting paradigm in the normative legal status of humanitarian interventions.

Neither current international law norms nor state practice provide a sufficient basis for unauthorized humanitarian intervention,¹⁹ and thus regional authority to initiate coercive action without Security Council approval is severely circumscribed, unless it could be justified under Article 51.²⁰ Permitting retroactive decisions and allowing regional actors to infer authorization would be tantamount to usurping the prerogative and the vested rights of the Security Council, even with *prima facie* evidence justifying intervention under the banner of humanitarian concern:

Control is only guaranteed by clear and prior authorization, since the mechanism of control consists of the possibility of preventing enforcement actions. To hold otherwise would be to encourage illegal acts, because regional agencies would be tempted to initiate enforcement actions in the hope that the SC would give its authorization afterwards.²¹

Inasmuch as the UN Charter is a legislative text, such *ex post facto* application of Article 53 would be problematic and untenable.²² The exercise of such a unilaterally posited right – by any state or group of states – to engage in humanitarian intervention would undermine the basic integrity of the UN Charter.²³ The requirement that regional organizations obtain clear Security Council authorizations prior to conducting enforcement actions also acts as an institutional and procedural safeguard against “pretextual interventions.”

E. Humanitarian Assistance in Lieu of Humanitarian Intervention

Humanitarian “intervention” should be distinguished from humanitarian “action” or “assistance”, which typically involve the use of non-coercive measures (and therefore outside the scope of Article 53). In the event the Security Council fails to exercise its primary responsibility for the maintenance of international peace and security, regional organizations could submit the matter to the General Assembly under the Uniting for Peace resolution, which could then adopt a resolution *recommending Chapter VI* action. Such a resolution, however, not only falls outside the purview of Article 53 (thus not empowered to call for humanitarian intervention), but is also non-binding on Member States. Also, many members of the General Assembly, most notably the G-77 and others in the developing world, do not endorse measures putatively violating their sovereignty, making Resolution 377 an ineffective secondary tool for even humanitarian assistance.

Humanitarian “intervention” should be distinguished from humanitarian “action.”

Regional organizations do have a right of action independent of the Security Council, as long as the doctrine of unilateral humanitarian assistance does not come into conflict with Article 53. Regional organizations could rely on other Articles of the UN Charter to initiate humanitarian assistance not constituting enforcement actions. Article 56 of the Charter calls for members to take “*joint and separate action* in co-operation with the Organization” to promote “higher standard of living, full employment, solutions of international economic, social, health and related problems and universal respect for, and observance of, human rights and fundamental freedoms for all”. Article 56 could be used as a legal underpinning for at least some form of unilateral humanitarian assistance not requiring Security Council mandate (it could also be used as a foundation for advancing the view that protection of fundamental rights should override the “domestic jurisdiction” clause in Article 2(7)). Also, regional organizations could take non-coercive Chapter VI measures under Article 52, an independent legal basis for regional action that carries its own authorization.

Humanitarian assistance should encompass peace-building as well as traditional peacekeeping mandates, and envisages forming the building blocks for institutions of “liberal constitutionalism,”²⁴ e.g. provide electoral assistance, strengthen democratic structures, stress the importance of the rule of law and good governance in general.

These peacemaking and peace-building functions,²⁵ however, are undertaken outside the scope of Article 53.

F. Humanitarian Intervention vs. Sovereignty

Because Article 53 powers could only be exercised within the confines of Chapter VII, the ever-mutating principle of humanitarian intervention must reconcile the conflict between two norms – the respect for territorial integrity and sovereign authority of states and the respect for human rights and humanitarian concerns. Respect for state sovereignty, with its corollary of non-interference, is enshrined in Articles 2(4) and 2(7) of the UN Charter. Despotism is likely to resist perceived threats to sovereignty or hide behind the talisman of sovereignty and invoke Article 2(7) of the Charter as a buffer against the predatory designs of stronger states, real or imagined.

However, the practical reality of global events has led to the relaxation of the rigors of international norms preventing states from using the principle of non-interference as a protective barrier; the self-serving affirmation to sovereignty has lost much of its resonance in a world no longer defined by the nation-state. A recent example of the erosion of national sovereignty in the interest of human rights could be extrapolated from the British Law Lords' decision in March 1999 concerning the extradition of the former Chilean President Augusto Pinochet. The Law Lords ruled that the defendant would not be able to invoke the doctrine of state immunity as a legal shield against prosecution for "international crimes", thus making state sovereignty more permeable in the face of broad violations of human rights.

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Also, the language of Article 2(7) contains a qualifying clause where the promotion and protection of human rights under Article 1(3) is given primacy over the respect for state sovereignty. Article 2(7) reads, "Nothing contained in the present Charter shall authorize the United Nations to intervene in matters which are essentially within the domestic jurisdiction of any state... This principle shall not prejudice the application of enforcement measures under Chapter VII." Article 2(7) does not, therefore, prejudice the right of the Security Council to adopt an intrusive, coercive approach in order to safeguard international peace and security. International legal norms have emerged to neutralize the principle of absolute and unbounded sovereignty, thus ending its use as a protective barrier behind which humanitarian crises is allowed to fester unattended.

The ethical foundation for humanitarian intervention, as articulated by scholars such as Fernando R. Tesun, is also based on the "natural rights" of individual citizens:

Because the ultimate justification of the existence of states is the protection and enforcement of the natural rights of the citizens, a government that engages in substantial violations of human rights betrays the very purpose for which it exists and so forfeits not only its domestic legitimacy, but its international legitimacy as well. Consequently, foreign armies are morally entitled to help victims of oppression in overthrowing dictators, provided that the intervention is proportionate to the evil which it is designed to suppress.²⁶

The basis for humanitarian intervention should therefore rest with the centrality of individual human rights. Priority should shift from the self-interest and self-preservation of states and the state as a prime structural component of international action as envisioned in the 1648 Treaty of Westphalia to the protection of individual citizens as the prime object of international affairs.

Many transnational idealists, such as Tesün, have advocated humanitarian intervention on the grounds that it is consistent with the principle of sovereignty as the purpose of intervention is to enable the state to resume responsibility for itself and resuscitate the state entity. Humanitarian intervention, in short, furthers the underlying justification for state sovereignty in the long run.

III. IMPLEMENTATION OF ARTICLE 53

A. Guidelines for Humanitarian Intervention

It is important to establish a set of guidelines for humanitarian intervention to ensure that the principles of non-intervention and the sanctity of sovereign authority are not superseded by arbitrary or self-serving reasons. Gerard Elfstrom has developed a useful working set of criteria for humanitarian intervention:

- (1) The violation of rights of these citizens must be extreme and obviously serious, involving the systematic violations of the most basic rights such as the right to life, to human dignity, to freedom of expression, or to political activity;
- (2) The citizens being abused must no longer be capable of remedying the abuse by themselves;
- (3) The abused individuals must be clearly desirous of outside aid or may reasonably be presumed to be desirous of assistance;
- (4) Normal authorities charged with dealing with such cases must be either unable to respond or unwilling to respond, assuming that authorities who have responsibility to oversee the abuses in question exist.²⁷

The Security Council could use and incorporate such guidelines to determine whether the minimum conditions necessary for intervention are present in any given situation. Notwithstanding the above guidelines, humanitarian intervention could only be administered unevenly because the capability and the willingness to act depend largely on the strength and the strategic value of the target nations. Investing the entire normative legal framework for humanitarian intervention on the Security Council also presents its own set of problems and difficulties, including the question

of double standards and the Council's history of inconsistent exercise of its unfettered discretion.

As a practical matter, this confines humanitarian intervention to acting against relatively weak and peripheral countries because neither the UN nor regional organizations are fully empowered to launch a global crusade to moderate every state behavior. It will thus not be feasible for regional organizations to undertake humanitarian intervention to save every state from the perils of volatile movements spawned by resurgent ethnic, national and religious passions. Other imperatives will compel regional organizations to consider issues other than the immediate need for humanitarian intervention to assess the wisdom of intervening.

Legitimate concerns and apprehensions have been expressed that humanitarian intervention could be used as a mere ruse for a power play to advance regional hegemony.

B. Practical Advantages of Subcontracting Regional Organizations

Beyond espousing shared principles on conflict prevention and management, there are practical advantages (and perceived disadvantages) to using a decentralized model for enforcement of international law under Article 53. Policies favoring regional authority include the principle that those with greater values at stake ought to have greater participation in the decision-making process, the advantages of maximizing the use of local expertise and deference to consensual arrangements submitting local disputes to regional authority.²⁸ In terms of collective action, regional organizations are "inclined to respond with far greater speed and vigor to a security threat in their own area than to a distant danger whose focal point is far from their own frontiers."²⁹ The regional organization's greater local expertise and interest could presumably enable it to treat the sources, rather than just the symptoms, of conflict – this may very well be accompanied by a more sustained peacemaking efforts to alleviate the humanitarian crisis.

Legitimate concerns and apprehensions have been expressed that humanitarian intervention could be used as a mere ruse for a power play to advance regional hegemony in which self-interest is employed in the guise of humanitarianism, or the initial intervention subsequently deviates from the putative humanitarian mandate. Also, notwithstanding the requirement that enforcement measures should be commensurate with the objective, duration and level of force necessary (the doctrine of proportionality) to carry out humanitarian interventions, there is a lurking danger that a major regional power could exceed established parameters for such enforcement measures.

The likelihood of such abuse, however, is minimized under Article 53 because the decision to intervene and the action itself will be multilateral in nature – regional actions are thus less likely to be swayed by special interests than unilateral action. For example the OAS operates on consensus and unanimity, and all actions falling outside of OAS resolutions are voluntary.³⁰ Furthermore, the language of Article 53 provides

that regional arrangements or agencies should not be able to use force on their own initiative, thereby substantially reducing the danger that local arrangements might degenerate into simple aggressive alliances incompatible with the aims and policies of the United Nations.³¹ The drafters of the Charter clearly stipulated that regional enforcement action should not be undertaken without the approval of the Security Council, and that it should be kept informed of regional action relating to peace and security.³² In cases where the peril of bias and abuse by a predatory power outweighs the benefits of humanitarian intervention, the Security Council could withhold authorization to the regional organization to intervene. There are thus procedural safeguards and institutionalized checks and balances under Article 53 against parochial and myopic state interests, and any divergent political aspirations are restrained by the need to reach a commonality of purpose amongst the sovereign members of the regional organization.

In practice, however, the concern should be focussed on whether regional organizations will display enough concern to act and whether they could mobilize the necessary political will and resources at a time where cold disinterest to people in distress appears to be the norm. Such international indifference, coupled with the attendant danger and cost of intervening, could circumscribe the effective use of Article 53. In general, regional organizations will be motivated to act in response to humanitarian crises only if they have wider geopolitical or symbolic impact beyond sovereign borders.³³ The unwillingness of Member States to provide the necessary military and financial resources in sufficient quantities will seriously hamper the regional organizations' capacity to underwrite enforcement measures.

Recognizing the enumerated advantages, many regional multilateral organizations have created mechanisms to support preventive diplomacy in countries threatened by incipient or escalating crises. Members of what is now the Organization of Security and Cooperation in Europe (OSCE) committed in their Charter of Paris for a New Europe to "seek effective ways of preventing, through political means, conflicts which may yet emerge."³⁴ The OSCE has since dispatched missions to several areas in Central Europe and states of the former Soviet Union. The Organization of African Unity (OAU) in 1993 established a new mechanism that has "as a primary objective, the anticipation and prevention of conflicts," and activated it in Congo (Brazzaville) in 1993 and Rwanda in 1993-94.³⁵

C. The Role of the United Nations and the International Community

In order for regional organizations to play a more active role in executing coercive Chapter VIII measures, the relevant organs of the United Nations and individual Member States must be fully engaged in augmenting the regional organizations' capacity for humanitarian intervention. The United Nations should intensify its efforts to promote cooperation with regional organizations in developing modalities for pre-conflict and post-conflict peace-building activities. Under Article 53, the United

Nations could devolve responsibility to regional organizations for the logistical and financial aspects of peace and security operations.³⁶

There have been a few instances where the “sub-contracting” or “outsourcing” model had been applied. The United Nations has, for instance, established a liaison office at the OAU headquarters in Addis Ababa with a view towards enhancing its capacity to prevent, contain and resolve conflicts. The United Nations has also lent political and financial support to several regional and sub-regional initiatives, e.g., a small UN observer group to the ECOWAS-led ECOMOG (ECOWAS monitoring group) mission in Liberia and Sierra Leone. Beyond these links, the Australian foreign minister Gareth Evans proposed that the UN Secretariat deploy staff members in the same cities as the headquarters of regional organizations for collecting and assessing early warning information.³⁷ Developed countries could also be pressed into assisting, either directly or indirectly by channeling aid through the United Nations fledgling regional organizations to enhance their collective security enforcement capacity.

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IV. CONCLUSION

Although the Security Council maintains its preeminent role as the primary actor in peace and security issues and remains the locus of decision-making on those matters, regional organizations could take authorized unilateral or collaborative enforcement measures in areas where they could optimize their comparative advantage in managing conflict. By building into a regional organization’s collective force structure numerous conflict prevention and resolution methods appropriate to the region, a regional organization could help to reduce the onus placed on the UN and the major powers with regard to implementing resolutions in response to humanitarian crises.³⁸

Regional organizations exercise subsidiary jurisdiction over matters pertaining to international peace and security, and as such, cannot supplant the universal authority of the Security Council in dispute settlement formulations where enforcement measures are contemplated. The powers of the Security Council under the UN Charter remain unencumbered and unimpaired by the imperatives of any regional organization or agency, and as such the carefully calibrated use of Article 53 in undertaking humanitarian intervention will ultimately rest with the decision-making process initiated at the Security Council. Any abdication of responsibility by the Security Council will create a parallel diminution in the capacity for regional organizations to respond to humanitarian crises predicated on the available legal mechanism. A dormant

or paralyzed Security Council may intensify the debate on whether a set of criteria for humanitarian intervention should be codified, potentially reducing or even circumventing the role of the Security Council in defining the contours of what constitute threats to peace and security.

The Security Council and the regional organizations must thus work in tandem to ensure effective and timely humanitarian intervention.

The Security Council and the regional organizations must thus work in tandem to ensure effective and timely humanitarian intervention: the former to provide the requisite “green light” so that the latter could execute the adopted resolution using Chapter VIII enforcement actions rooted on international legitimacy. While the application of Article 53 could optimize the comparative advantages of the UN and the regional organizations in undertaking humanitarian interventions, more should also be done in terms of early and preventive actions before the situation ripens into a humanitarian crisis. The United Nations, together with the regional agencies, should enhance its early warning system that can detect and recognize the threat or risk of a conflict (with humanitarian dimensions), thus preventing the outbreak of such crises and obviating the need to invoke Article 53.

Notes

The views and opinions expressed in this article are those of the author and do not represent the views of the United Nations or its affiliated organizations.

¹ Moore, J. N., “The Role of Regional Arrangements in the Maintenance of World Order”, in *The Future of the International Legal Order* (Falk, R.A./Black, 1971): 153.

² Hambro, E., *Charter of the United Nations: Commentary and Documents* (3d ed. 1969): 365. Some have argued that the application of economic sanctions under Article 41 has not been traditionally considered an “enforcement action” within the realm of Chapter VIII jurisprudence. Borgen, C. J., “The Theory and Practice of Regional Organization Intervention in Civil Wars”, *NYU JILP* (Summer 1994): 803. In 1960, when the Organization of American States voted for collective economic measures against the Dominican Republic, the Security Council concluded that “article 53 does not apply to nonmilitary measures of the kind indicated in Article 41”. U.N. Docs S/PV.874 and S/PV.875.

³ Simma, B., *The Charter of the United Nations: A Commentary* (Munich: Beck, 1994): 699.

⁴ The OAS is one of the few organizations that explicitly stated in its Charter that it intended to be a UN Chapter VIII regional organization. *Charter of the Organization of American States*, Apr. 30, 1948, 2 U.S.T. 2394, as amended by the 1967 Protocol of Amendment, 21 U.S.T. 607 (effective Feb. 27, 1970).

⁵ Although the League of Arab States claimed at one point that it should not be considered a Chapter VIII regional organization, it has taken part in peacekeeping activities in Lebanon, thus bringing it closer to Chapter VIII oversight.

⁶ Moore, *Supra.*, p. 144.

⁷ *Ibid.*, p. 150.

⁸ Advisory Council on International Affairs/Advisory Committee on Issues of International Law: “Humanitarian Intervention” (The Hague, AIV/CAVV, 2000): 2.

⁹ International Peace Academy Conference Report: “Humanitarian Action: A Symposium Summary” (New York, 2000): 3.

¹⁰ S/RES/929 (1994).

¹¹ S/RES/940 (1994).

¹² S/RES/794 (1992).

¹³ Meeker, L.C., "Defensive Quarantine and the Law", *AJIL* 57 (1963): 521.

¹⁴ *Ibid.*, p. 520.

¹⁵ Moore, *Supra.*, p. 159.

¹⁶ Bruno Simma justified NATO action on the grounds that it made every effort to remain "close to the law" by following and linking its efforts to the resolutions of the Security Council and by stating that the action taken was an urgent measure to prevent a larger humanitarian crisis. Simma, B., "NATO, the UN and the Use of Force: Legal Aspects", *EJIL* 10 (1999): 22.

¹⁷ "Nothing in the present Charter shall impair the inherent right of individual or collective self-defence if an armed attack occurs against a Member of the United Nations, until the Security Council has taken measures necessary to maintain international peace and security".

¹⁸ Borgen, *Supra.*, p. 829.

¹⁹ AIV/CAVV, *Supra.*, p. 20.

²⁰ Article 51 was written "to allow a measure of autonomy for regional and other groupings in case of an armed attack," but it was placed in Article VII as opposed to Article VIII to make clear that it was a right that was not only held by regional arrangements, but by all states. Hambro, *Supra.*, p. 364.

²¹ Simma, *Supra.*, p. 734.

²² *Ibid.*, p. 734.

²³ AIV/CAVV, *Supra.*, p. 23.

²⁴ Zakaria, F., "The Rise of Illiberal Democracy", *Foreign Affairs*, Vol. 76 No. 6 (November/December 1997).

²⁵ "Peacemaking" addresses conflicts in progress, attempting to bring them to a halt using the tools of diplomacy and mediation. "Peace-building" defines activities undertaken to reassemble the foundations of peace and provide the tools for building on those foundations something that is more than just the absence of war (A/55/305-S/2000/809).

²⁶ Adelman, H., "The Ethics of Humanitarian Intervention: The Case of the Kurdish Refugees," *Public Affairs Quarterly* 6 (January, 1992): 64-5.

²⁷ *Ibid.*, p. 67.

²⁸ Moore, *Supra.*, p. 137.

²⁹ *Ibid.*, p. 138.

³⁰ McDougall, B., "Haiti: Canada's Role in the OAS", *Herding Cats: Multiparty Mediation in a Complex World* (United States Institute of Peace Process: Washington, D.C. 1999): 393.

³¹ Simma, *Supra.*, p. 732.

³² Article 54 states that "[t]he Security Council shall at all times be kept fully informed of activities undertaken or in contemplation under regional arrangements or by regional agencies for the maintenance of international peace and security."

³³ Lund, M.S., *Preventing Violent Conflicts: A Strategy for Preventive Diplomacy* (United States Institute of Peace Process, Washington, D.C., 1996): 81.

³⁴ Conference on Security and Cooperation in Europe, Charter of Paris for a New Europe, Meeting of the Heads of States and Governments of the Participating States, Paris, November 19-21, 1990: 6.³⁵ OAU Assembly, Declaration of the Assembly of Heads of State and Government on the Establishment within the OAU of a Mechanism for Conflict Prevention, Management, and Resolution, 29th Ordinary Session, June 28-30, 1993, Cairo, Egypt. Document AHG/Decl.3 (XXXIX) Rev.1: 7.

³⁶ O'Brien, D., "Regional Burden-Sharing for Humanitarian Action", New York University Center on International Cooperation (April 1999): 20.

³⁷ Lunde, *Supra.*, p. 173.

³⁸ Jividen, D. D., "It Takes a Region: A Proposal for an Alternative Regional Approach to UN Collective Force Humanitarian Intervention", 10 *USAFA J. Leg. Stud.* 109 (1999/2000): 133.