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Author(s): Mukund G. Untawale

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Global Environmental Degradation and International Organizations

MUKUND G. UNTAWALE

ABSTRACT. International organizations are critical for global environmental policymaking as catalytic agents of desirable change, and in the case of the United Nations Environment Program (UNEP) as the coordinative mechanism as well. Only in the face of severe degradation or impending catastrophies has the world community responded to challenges. However, for the policy to be effective, the necessary financial support needs to be generated, assured, and vastly increased; and the locus of policy making shifted to a main organ of the United Nations—conceivably as an Environmental Council, supplanting the Trusteeship Council and being co-equal in status with the Economic and Social Council, with the UNEP as its coordinative arm.

From the perspective of global policy, the issue of environmental degradation has moved rapidly from a low-priority item to one of the highest priority in international governmental and non-governmental organizations, as well as in the increasingly significant international ad hoc conferences which involve a large number of states. By the end of the 1980s, the environmental agenda has come to vie for priority with the resources and social agendas, with which it is inextricably intertwined. However, despite encouraging indications reflected in the positions of the two superpowers and other major states in the United Nations system, environmental considerations do not seem as yet to weigh as heavily as the economic and political ones at the global policy levels. It is the inescapable tension between the politico-economic considerations on the one hand and environmental ones on the other which has characterized world policy making in the 1980s (see Soroos, 1986; Brown et al, 1989).

For the purposes of this paper, environmental degradation is viewed as: contamination or drastic human transformation of the land, air, and water on the planet, or of the condition of outer space, which is injurious to the components of the global eco-system and sometimes in a synergistic way for the system as a whole; significant reductions in the numbers, or even extinction, of plant and animal species as well as microorganisms in the global eco-system due to drastic changes brought about by human activity or societal processes, such as excessive pollution or deforestation; erosion of the soil at such a rate that its organic layer disappears more

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quickly than it is replaced; its degradation through salinization/alkalinization, or its loss of fertility through depletion of nutrients or accumulation of toxic substances; and other developments which are incompatible with the goal of a sustainable society on earth (see UNEP, 1982a, ch.1).

In the late 1980s it is becoming increasingly clear that air pollution is resulting in acid rain, the drastic depletion of the atmospheric ozone layer, and a rise in the earth's temperature. Climatic changes may lead to a rise in the sea level, causing large-scale inundation of low-lying areas. There has been widening desertification and deforestation as well as mass extinction of species. These dangers have quickened the pace of agenda-setting and increased the pressures for timely decision making in the global policy arena, incorporating elements of what has been called "anticipatory thinking" and modes of operation (Pirages, 1989, pp. 3–4).

The objectives of global policy range from the most elemental considerations, from mere survival to the preserving and promoting of "quality of life" within a sustainable society, which involves a cooperative relationship between human beings and nature. Sustainable development requires preserving the basic integrity of global ecological processes which, in turn, implies constraining rapid growth of human populations and their excessive demands upon the environment (WCED, 1987; Brown et al, 1988).

The Stockholm Conference of 1972 advanced the notion that environmental issues must be addressed at the international and global levels. Nations accustomed to defending their sovereignty assiduously have been rather slow to respond to this call for transcending it. However, increasingly it is recognized that environmental factors, such as the wind, ocean currents, rain, climate, plant and animal species, and viruses, do not respect the historically-accidental and ecologically-artificial demarcation of sovereign national jurisdictions. More recent scientific findings reinforce this understanding. The interconnectedness of the world eco-system internationalizes or globalizes many critical environmental issues, as has been demonstrated forcefully by the Chernobyl accident in 1986, discoveries regarding the rapid depletion of the ozone layer, and the emergence of the "greenhouse effect" and consequent global warming. These and other environmental problems have sharpened the perception of ecological imperatives among many national leaders as well as the people—who, on an unprecedented scale, are beginning to mobilize for protecting and restoring the environment domestically and globally (Brown et al, 1989).

I. An Overview of Global Environmental Degradation

A review of the degradation of the global environment, in some of its major aspects, reveals the challenges confronting the world community and its many constituent units to devise acceptable policy responses and action plans in order to avert the emergence of even more catastrophic situations in the near future.

Air pollution came to be seen as a global problem in the 1970s. In 1980, the highly industrialized Organization for Economic Cooperation and Development (OECD) countries contributed about half of the total global emissions of pollutants into the atmosphere, such as sulphur oxides, particulate matter, nitrogen oxides, carbon monoxide, and hydrocarbons. Acid rain has emerged as a major international issue in the 1980s, particularly among the OECD nations; and it has begun to be evidenced in major developing regions in Asia and Africa as well.

There appears to be a consensus among the scientists that the increasing concentrations of carbon dioxide, ozone, as well as methane, nitrous oxide, and

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chlorofluorocarbons (CFCs) in the lower atmosphere—due to, inter alia, fossil fuel combustion and large-scale deforestation—could bring about a "greenhouse effect" and a resulting rise in average global temperatures between AD2030 and 2050 by 1.5–4.5 degrees Celsius (or 3–8 degrees Fahrenheit). This could result in dramatic shifts in crop-growing regions and changes in rainfall patterns—which, on balance, may adversely affect global food production, cause large-scale die-offs of forests resulting in further warming via CO_2 releases, and accelerate species extinction. It may have an even more drastic effect on the poles, melting the polar icecaps and raising the sea levels by as much as two meters (or 6 feet) by 2100 due to the thermal expansion of ocean water—thus inundating low-lying coastal areas and cities and completely submerging islands such as the Maldives. Ominously, the five warmest years in the past century have been in the 1980s, leading scientists to note the beginning of global warming and the threat of global climatic change. Evidently, due to the human activities "loading" the earth's atmosphere over the past century with CO_2 by as much as an extra 25 percent, and the continuing increase in that, has already narrowed the global policy choice to that of seeking to *slow* the rate of climate change rather than *stopping* or *reversing* it (see Brown et al, 1989, pp. 9–12; and UNEPa and UNEPb).

During the late 1980s, deforestation was contributing as much as 20 percent of the total CO_2 to the atmosphere, amounting to about 6–8 billion tons of carbon annually; the rest came from the burning of fossil fuels, the industrial countries contributing two-thirds of the total emissions. While the emissions continued to rise slowly in the developed countries, they were rising rapidly in the developing nations. Anticipated increased reliance upon coal as an energy source in nations such as China could worsen the situation further (see Brown et al, 1988).

The alarming depletion of the upper atmospheric ozone layer is a classic example of Hardin's "Tragedy of the Commons" (see Orr and Soroos, 1979). In the 50 years since their development, the CFCs—the most common usages of which are in aerosols, as coolants in refrigerators and air conditioners, as solvents in the manufacture of electronic components, and for foam products—have caused a drastic reduction of the stratospheric ozone layer which shields the earth from the sun's harmful ultraviolet radiation. This is likely to increase the incidence of skin cancers, cataracts, and immune system problems among humans as well as reduce crop and marine yields (due to the loss of plankton), and cause materials damage and more smog.

An immense ozone hole has been discovered over the Antarctic during spring since the mid-1980s. In March 1988, more than 100 international experts found that between 1969 and 1986 the average global concentration of ozone in the stratosphere had been reduced by about 2 percent, the reduction varying by latitude and season. The most heavily populated regions of Europe, North America, and the Soviet Union experienced a year-round depletion of 3 percent and a 4.7 percent reduction in winter. In the winter of 1988, reduced ozone concentrations were found in the Arctic as well. CFCs and the halons—which are used in fire extinguishers—are also "greenhouse gases" that persist for more than 100 years in the upper atmosphere. Paradoxically, the process of global warming also encourages the ozone hole to feed on itself (Shea, 1989: 79–81).

The "greenhouse effect," combined with the alarming destruction of the rain forests, threatens to accelerate the greatest mass extinction of species in the history of the planet. The forests on the planet—which play a critical role in mitigating the build-up of atmospheric CO_2,—are a repository of the genetic heritage of the world's

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fauna and flora, provide firewood and fodder, but are disappearing at the rate of 15 million hectares each year, with average annual deforestation in tropical countries estimated at 11 million hectares. At the present rate of deforestation, about 40 percent of the remaining forest cover will be lost by the year 2000 when an acute shortage of firewood is expected to emerge for about 3 billion people in developing countries who would be cutting down trees faster than they can grow (UNEP, 1987a). In the early 1980s, tropical trees were being cut much faster than reforestation or nature were replacing them (Postel and Heise, 1988: 85). The consequent extinction of animal and plant species severely affects genetic diversity which, in addition to aesthetics, is critical for human health, sustenance, and survival on this planet. Many of the increasing pressures on the environment emanate from the inability or unwillingness of developed countries to forego luxuries which have come to be defined as necessities, and the continuing population growth in developing countries together making increasing demands on an already severely-degraded environment.

The annual addition to the world population is projected to exceed 90 million in the early 1990s. In the last 30 years, 80 percent of the world's population growth occurred in developing countries; as will 95 percent of the projected growth to 2110, when the world's population is anticipated to stabilize. By then, 86 percent of the world's people will be living in today's developing countries—several of which are expected to double, triple, or quadruple their populations over the next 50 to 60 years (UNEP, 1987a: 35–38).

Environmental degradation has reached catastrophic proportions in most of the developing nations, especially in the ever-increasing and expanding urban centers where the drinking water and sanitation systems are either lacking or acutely overburdened. As a result, efforts to provide food, fuel, and transportation to burgeoning populations, coupled with an inability or unwillingness to impose effective safeguards, the environment in many developing countries is reaching the point of no return from utter deterioration.

Major industrial accidents, such as the ones in Sevesco, Italy in 1976 involving dioxin, near Mexico City in 1984 involving liquified petroleum gas, at Bhopal, India, in 1984 involving methyl iscocyanate, and at the Sandoz plant in Switzerland in 1986 involving the spillage of 10 tons of toxic chemicals into the Rhine river, demonstrate the "quiet crises" in various regions of the world. While many of the developed countries have sought to "control" industrial chemicals prior to marketing, most of the developing nations have no toxic chemical control laws. Aggravating the situation further, toxic products banned or severely restricted in the industrial countries have been sold to, or "dumped" on, the weaker developing nations (see Soroos, 1986: 298–299).

Given the lack of a universal definition of "hazardous waste," there is a dearth of reliable comparative data. The OECD countries are estimated to generate about 300 million tons of hazardous waste annually, of which more than 10 percent is transported across national frontiers for disposal. Over 75 percent of this waste is disposed of on land using landfills, deep-well injections and underground disposal, which creates a severe problem in Europe. Over 20 000 uncontrolled "toxic dumps" have been located in the United States; and the Environmental Protection Agency has placed 951 sites needing urgent attention on its national priority list. The clean-up cost is likely to be tens of billions of dollars (see UNEP, 1987a: 57; Postel, 1988: 123). Under the policy of glasnost, the Soviet Union is acknowledging environmental damage which may be worse than that in the OECD nations. As the developed nations, and a few developing ones, have tightened controls relating to

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hazardous waste domestically, the chemical industries have targeted developing states where the environmental control laws are less strict, or less strictly enforced. Even among the developed states, there is a transboundary illegal transfer of such wastes. However, the weaker nations have been particularly vulnerable to such exports. Even without such transfers, the situation is grave enough in most developing countries where the industries tend to dispose of the wastes in unsecured domestic landfills, stockpile it, or dump it indiscriminately into the environment. In China, which produces 400 million tons of industrial waste annually, potentially harmful waste reportedly covers 60 000 hectares of land (see Postel, 1988: 120; UNEP, 1987a: 57).

Most of the pollution in the ocean is from land-based sources, especially from the discharge of municipal waste water and industrial effluents as well as agricultural runoffs, dumping of wastes in the sea, and incineration of toxic wastes at sea. Ships discharge roughly 1.6 million tons of oil into the sea, of which about 1.1 million tons are due to non-accidental and regular discharges of contaminated ballast water and water used to flush out tanks. Oceans are also receiving large amounts of plastic and other debris. It is the state of this global environment that the international organizations have been seeking to help change for the better.

II. The Role of International Organizations

Beginning in the late 1960s, the United Nations system helped evolve a holistic view of the environment. The Stockholm Conference of 1972 provided a sense of direction to the environmental policy and proposed the United Nations Environment Programme (UNEP). The Declaration on the Human Environment and the Plan of Action provided the principles and objectives as well as guidance to governments and international organizations on environmental policy (Soroos, 1986; Bennett, 1988; Caldwell, 1984).

UNEP was intended to be neither an operating agency nor a framework for centralizing global environmental policy. It has continued to share the policy role with other international governmental organizations (IGOs), such as the World Health Organization (WHO), the Food and Agriculture Organization (FAO), the United Nations Educational, Scientific, and Cultural Organization (Unesco), the International Atomic Energy Agency (IAEA), the World Meteorological Organization (WMO), and the International Maritime Organization (IMO) as well as with international nongovernmental organizations (INGOs), such as the International Union for Conservation of Nature and Natural Resources (IUCN), and the World Wildlife Fund (WWF); and has sought to make these organizations more effective in carrying out environmental responsibilities. Being a small organization with a modest budget, UNEP has nevertheless performed a significant catalytic role. Occasionally, it provides information or financial support to other agencies, and conducts joint projects with one or more IGOs or INGOs. For example, it has cooperated with the WWF and the IUCN on World Conservation Strategy. It also sponsors ad hoc conferences on specific environmental problems, a recent example being one on the depletion of the ozone layer.

INGOs have played a significant role in the evolution of global environmental policy. More than 5000 are registered with the Environmental Liaison Center of UNEP. Multinational Corporations (MNCs) have also developed a limited degree of environmental consciousness, possibly accelerated by stricter national and international environmental regulations based on the "polluter pays" principle and a spate

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of liability law suits resulting in large financial judgments against firms violating the environmental norms (see Pearson, 1987, p. xvi). However, few MNCs have attempted to develop a set of global environmental management policies applicable to worldwide operations and corporate headquarters are not likely to be furnishing or enforcing system-wide norms on a global basis, particularly in developing countries (Gladwin, 1987: 13–14) as was demonstrated so graphically in the Bhopal case.

The leaders of the two superpowers, especially Mikhail Gorbachev, have also begun to exhibit concern for the global environment. The report of the UN-created World Commission on Environment and Development (WCED) led by the Norwegian Prime Minister Gro Harlem Brundtland, presented to the General Assembly in October 1987, has called for redirection of international institutions and a new focus on sustainable development (WCED, 1987).

An outgrowth of the "Earthwatch" program, UNEPs Global Environmental Monitoring System (GEMS) has developed a Global Resource Information Database (GRID) which, combined with International Referral System for Sources of Environmental Information (INFOTERRA) and the International Register of Potentially Toxic Chemicals (IRPTC) generates an increasingly accurate and wider information base on the state of the global environment in the 1980s. With large-scale expansion of national environmental organizations, a dramatic increase in national environmental legislation, and the production of regular statistics and environmental reports, the breadth and quality of relevant information has been enhanced considerably; and much of the anecdotal information of the past is being replaced with sound data (UNEP, 1982b: 9–10).

III. Global Environmental Policy: Successes and Shortcomings

Despite the surfacing of a multitude of environmental problems in the past few decades, the policy responses have so far addressed only the most critical problems which more or less directly threaten the survival, health and well-being, or the economy of nations. Thus, not surprisingly, the depletion of the ozone layer has been quickly addressed by policies.

UNEP began sponsoring scientific meetings on the ozone layer as early as 1977. The Vienna Convention for the Protection of the Ozone Layer of 1985, drafted under the aegis of UNEP, provided for information exchanges, research, and systematic observations to protect human health and environment. The Montreal Protocol on Substances that Deplete the Ozone Layer of 1987 was signed and ratified by 32 countries by early 1989, having gone into effect in late 1988 upon ratification by 11 nations representing at least two-thirds of the world production of CFCs and halons. The treaty was made possible by UNEP's vigorous role in preparing the draft agreement and promoting it through months of arduous negotiations among countries with diverse political-economic systems and environmental policies. It provides for freezing the consumption and production of CFCs in the industrialized countries at the 1986 levels beginning in mid-1990, and progressively reducing the CFCs by 50 percent by mid-1999. Its apparent weaknesses were: (a) providing for only a 50 percent reduction as opposed to the 95 percent asked for by the scientific community and UNEP; (b) granting an additional 10 years to developing nations for compliance; and (c) allowing the advanced industrial states (AISs) to increase CFC production by 15 percent as long as they exported it to developing countries. More nations began acceding to the Montreal Protocol as the scientific evidence regarding the unprecedented environmental crisis posed by ozone depletion became conclusive.

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The European Community (EC) environmental ministers agreed in early March 1989 to cut production of CFCs by 85 percent as soon as possible and to eliminate *all* production and use of CFCs by the year 2000. The president of the United States also voiced his support for a global phase-out of the CFCs if safe substitutes could be found. This marked a major shift in policy for the United States, which under the Reagan administration had endorsed only a 50 percent reduction in CFCs by 1999 under the terms of the Montreal Protocol of 1987.

At the 124-nation environmental conference in London in March 1989, the USSR was reluctant to endorse a global ban on CFCs and halons, arguing that more scientific evidence was needed to demonstrate that it was necessary. China and India voiced misgivings and argued that the developed nations should bear the greatest burden as the major producers and consumers of CFCs. The United States is estimated to produce 30–34 percent, and the EC 35–37 percent of the world's total. Neither China nor India has signed the Montreal Protocol, and in fact they were not present at Montreal. However, other large developing nations such as Nigeria and Brazil were now ready to accede to the Protocol. The London conference produced no time-table for a global ban on the production and use of CFCs and halons. However, Britain and the United States pledged to assist the developing countries acquire new technologies to replace the chemicals (*San Francisco Chronicle*, 7 and 8 March, 1989: A-17, A-21).

At the conference of Montreal Protocol signatories in early May 1989 in Helsinki—sponsored by UNEP—80 nations, including China, India, and Brazil unanimously adopted the Helsinki Declaration, which provided for the phasing out of many CFCs not later than the year 2000, and halon gases and other substances as soon as feasible; finding alternative chemicals, products, and technologies to replace the CFCs; and financially helping developing countries and giving them access to information and technology for switching to alternative chemicals. The Montreal Protocol signatories were to meet again in 1990 to discuss amendments to the Protocol. At the end of the conference, the delegates pledged to end by the year 2000 the production and use of chemicals that are rapidly destroying the ozone layer (*New York Times*, 3 May, 1989: A-14 Z; *San Francisco Chronicle*, 3 May, 1989: A-17; and 6 May, 1989: A-7).

As the evidence became more conclusive that the "greenhouse effect" is accelerating and may already be beyond human correction, Britain proposed at the United Nations that a world conference be held to develop an international convention on global warming, along with a call for enlarging the role of the Security Council in order to monitor environmental trends that could threaten world peace, such as droughts, inundation of coastal cities, and more frequent and intense storms, hurricanes, and floods (*San Francisco Chronicle*, 9 May, 1989: A-1, A-19; 10 May, 1989: A-15). The United States wavered in seizing the initiative, due to interagency differences within the American bureaucracy, at the intergovernmental Panel on Climate Change at Geneva chaired by the US.

Turning to a different set of global issues, UNEP has been consulting with governments and industry to promote international agreement on notification of industrial accidents and on mutual assistance in case of such accidents. It has also sought to promote international rules and procedures on the export of drugs, pesticides, and hazardous or toxic wastes, particularly to Third World countries. Within the UN system, the concept of shared responsibility for exporting and importing countries, as well as stronger measures to discourage the export of banned products and toxic wastes, have gained ground. The role of UNEP has been central in

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developing the Provisional Notification Scheme for Banned and Severely Restricted Chemicals in 1984 thus leading to the UN Secretary General's issuance of a revised consolidated list of products whose consumption and/or sale have been banned, withdrawn, or severely restricted or, in the case of pharmaceuticals, not approved by governments. UNEP's IRPTC assists in the information exchange related to the Provisional Notification Scheme. In addressing this problem, the impetus for global environmental policy has come from the INGOs as well as from IGOs, such as the FAO, which have called for an international code of conduct for the multinational corporations on the export of toxic substances (see Scherr, 1987: 139–148; and UNEP, 1987: 51, 56).

UNEP again successfully facilitated negotiations, lasting 18 months, which resulted in the first international treaty in March 1989 seeking to control toxic waste exports, and to limit their dumping in Third World countries. The treaty, titled the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, was adopted by a unanimous vote (105 of the 117 delegations having endorsed it earlier); and 34 nations signed it. It will take effect 90 days after 20 signatories have ratified it, which UNEP hopes will occur by mid-1990. The convention is a compromise between the position of developing nations which had wanted an outright ban on cross-border transfers and that of industrial nations (particularly the United States and West Germany, among others) which opposed a total ban. Under the treaty, waste-exporting countries are required to notify and obtain a permit from the importing countries before shipping the waste. It also requires exporting and importing countries to ensure that the waste is ultimately disposed of in an environmentally sound manner. The convention does not include radioactive waste, which is to be the subject of an agreement to be worked out under IAEA auspices. However, it does include wastes from hospitals and pharmaceutical factories, polychlorinated biphenyls (PCBs), compounds containing mercury or lead, and wastes from the production or use of dyes, paints, and wood-preserving chemicals. The treaty calls upon nations to minimize the generation and export of hazardous waste; and requires them to prohibit shipments of hazardous waste to nations that have banned waste imports. Bilateral agreements for waste exports outside the terms of the treaty are permitted as long as they are not environmentally less sound than those permitted under this convention (see *Washington Post* and *New York Times*, 23 March, 1989: p. A-1 in each case).

Significant policy responses have also emerged with regard to marine pollution. The IMO and UNEP have been instrumental in the emergence of conventions and programs designed to protect the oceans and seas from pollution. Unfortunately, the ratification of conventions is lagging and ships flying "flags of convenience" continue to violate the norms. At the regional level, with the prodding by UNEP through its Regional Seas Program, several groups of states have signed regional conventions and adopted action plans to preserve the environment of shared seas. In coastal areas, however, the marine environment continues to be degraded drastically as the coming into effect of the UN Convention on the Law of the Sea (UNCLOS III) of 1982 is delayed due to insufficient ratifications (see Caldwell, 1984; Soroos, 1986; and UNEP, 1987a).

Continuing extensive desertification portends a "global disaster" according to UNEP's 1984 report. Chronic inadequacy of funding, in the context of a monumental challenge, has thwarted possible efforts in containing the onward march of deserts. According to scientists, not a single nation has been able to reverse successfully the process of desertification. (See Tessitore and Woolfson, 1988; UNEP, 1987a).

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An estimated 5–7 million hectares of cultivated land (0.3 to 0.5 percent of the total) is lost every year to soil degradation and competing land uses such as housing and industrial development and roads. Roughly the same number of hectares of new land are being brought under cultivation. The FAO has recommended that soil and water conservation measures be extended to one-fourth of all farmland by the year 2000. However, UNEP's World Soils Policy and the related Plan of Action has not become operational due to lack of financial support (see UNEP 1987a).

Since 1970, the World Bank (IBRD) had taken a generally positive but cautious position in relation to environmental aspects of development. In the face of mounting criticism that it lends money for projects that destroy forests, farmlands, watersheds, and other natural systems, the bank sharply changed its policy in May 1987 in order to protect the environment in developing countries. It moved the environmental concerns from the periphery to the center of the bank's development policies by creating a top-level environment department with 100 full-time staff members, which is to take the lead in integrating environmental considerations into all of the bank's lending policies. In addition, environmental offices are to be created within each of the four regional departments to function "both as environmental watchdogs over bank-supported projects and as scouts and advocates for promising advances in resource management." The World Bank is undertaking several other new environmental initiatives: an urgent country-by-country assessment of the most severely threatened environments in 30 developing countries; a program across Africa to slow the spread of deserts and the destruction of forests; a global program to promote the preservation of tropical forests; and participation in a long-term, cooperative effort by the countries of the Mediterranean basin to protect that sea and its coasts from environmental degradation (see Caldwell, 1984; *New York Times*, 6 May, 1987: A-14; Brown et al, 1988: 21).

On deforestation, no clear global policy stance has emerged due to the assertion of sovereignty by major developing nations such as Brazil, Mexico, and India and the rejection by them of the "conditionality" associated with the lending policies of international financial organizations such as the World Bank. Limited afforestation programs undertaken so far are unlikely to reduce the massive deforestation occurring across the globe, particularly in the developing nations. The issue of deforestation has prompted international responses from the INGOs such as CARE, Oxfam, the Nature Conservancy, and the WWF, the last two having been very active in the innovative "debt for nature" swaps.

The FAO, World Resources Institute (WRI), United Nations Development Programme (UNDP), and the World Bank have jointly sponsored a strategy for action called the Tropical Forestry Action Plan, which calls for accelerated investment of $8 billion over 5 years to arrest deforestation and support tree planting projects. The funding is to come from development assistance organizations, national governments, and the private sector (see Postel and Heise, 1988: 99). Given the rejection by major developing nations of "conditionality" (i.e., the application of environmental criteria) in the lending policies of financial institutions, it is questionable whether this initial global effort will be sufficient to stop and reverse the continuing deforestation (for Brazil's case, see *Insight*, 6 February, 1989: 44–45).

UNEP plays a critical role in administering the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) of 1975, which has 101 signatories and, along with the IUCN and the WWF promotes and updates the World Conservation Strategy. The acuteness of the crisis is symbolized by the distinct possibility of the African elephant being classified as an endangered species under the

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CITES convention by the member nations, thus making illegal the commercial sale of all elephant products in nations which are parties to the treaty. Only a global ban on trade in African ivory holds out a promise for averting the extinction of the African elephant in its native habitat (see Wolf, 1988; and UNEP, 1987a). The IUCN, an INGO with a federative structure involving governments or governmental agencies, as well as scientific, professional, and conservation organizations, has been the most consistently and comprehensively concerned with wilderness areas and endangered species. It has developed a system of categorization for threatened species: *endangered* due to near term threats, *vulnerable* because populations are declining in numbers or in geographical distribution, and *rare* because their total population is small or restricted in area. The IUCN's Conservation Monitoring Center maintains data bases on globally threatened species; and it periodically publishes and updates the *Red Data Books* on major groups of plants and animals. The IUCN and OECD data indicate that more than 30 percent of species of mammals, birds, and reptiles as well as amphibians are threatened in Europe. In developing regions, particularly Africa, and in the tropical rainforests all across the globe, extinction of species is occurring at an unprecedented rate (see UNEP 1987a, p. 32).

IV. Conclusion: Implications for Global Policy

The Stockholm Conference of 1972 ushered in a new era of environmental consciousness and activity in the international community. The creation of UNEP provided an institutional framework for dealing with the environmental problems in the world. The coordinative and catalytic role of UNEP has proved valuable in orchestrating policy responses at various levels—national, regional, international, and global—in relation to continuing and emergent environmental challenges. Unfortunately, the voluntary contributions by governments to UNEP's Environmental Fund have been woefully short of what is needed to make an impact on a rapidly deteriorating situation. An adequate program of reforestation alone is likely to cost an estimated $60 billion between 1989 and 2000 (Brown and Wolf, 1988: 173–176; WCED, 1987: ch. 12). Hence, generating financial support is one of the most critical challenges confronting the global environmental policy.

The Montreal Protocol may have established an operative principle of global policy: that an equitable distribution of the economic/opportunity costs of environmental regulation of the commons is imperative for generating global response. In regard to the "greenhouse" issue, there appears to be no policy choice available now which can help avert the warming of the planet during the next century. The cumulative damage has already been done; and it cannot be undone "quickly." Several other lessons from the global environmental policy experience may be posited briefly:

–nations will agree to act collectively only when their perception of threat/risk from an impending or actual global environmental catastrophe is acute and direct;
–nations will give higher priority to economic/developmental factors in cases of moderate or low perceptions of threat/risk from environmental crises, especially when there is a conflict between economic and environmental considerations;
–the long-established habits of doing "business-as-usual" at the international level are likely to change very slowly if no impetus is available to transform them in desirable ways;
–the necessary impetus is likely to come from the IGOs, such as UNEP or other

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agencies in the United Nations system, INGOs such as IUCN or WWF, from some of the environmentally enlightened national leaders such as Prime Minister Brundtland of Norway, or from the environmental movements at the grassroots level within and among nations, such as the Chipko movement in India, or the Greens in Europe;
–as the pressures on the global eco-system increase, and crises unfold, more global policy responses are likely to be forthcoming, and the scope of policy making is likely to widen—thus encompassing more issue areas. However, lack of adequate funding and/or political will to take appropriate action in time will act as severe constraints on global environmental policy and corresponding action within national jurisdictions.

The implications of these observations for global environmental policy may also be stated rather tersely. The move toward a sustainable society globally will require drastic changes in the lifestyles of the affluent cultures in the developed nations. Technology is a two-edged instrument; it will have to be harnessed wisely and appropriately. The developing nations will have to commit themselves to a substantial curbing of their population growth in the near future. As the economic problems of a large number of developing nations become more intractable, their already weak commitment to environmental protection and restoration is likely to slacken further. Immense financial resources will have to be generated and made available globally on very reasonable terms to address the twin challenges of environmental preservation as well as promoting sustainable development.

UNEP may have to coordinate more intensively global policy responses and their effective implementation. That, however, requires more stable and vastly increased funding, and raising the status of that organization. Already there are proposals in the UN for involving the Security Council in the peace-related aspects of environmental degradation. It may well be that the UN could be made more effective in its environmental role if the Trusteeship Council, whose work is almost done, were to be replaced with an Environmental Council with the same status as the Economic and Social Council. Then, UNEP could become the coordinative arm of the Environmental Council. Putting into effect the UNCLOS III Convention of 1982, and releasing its potential as a funding source, may also help anchor the fragile environmental policy framework. In some cases, global environmental policy responses have already turned out to be "too little, too late." Diversion of excessive expenditures from thermonuclear weapons systems to environmental preservation may help the world community avoid the global catastrophe of a "nuclear winter." And, even in the conventional arms area, there is immense scope for disarmament and thus for the reallocation of funds to global environmental tasks. In other areas, nations do not seem to be "learning" from experience so far. A convention permitting regulated development of oil and mineral resources of all of Antarctica, initialled by 33 nations in Wellington, New Zealand, in June 1988 frustrates efforts to have Antarctica declared a World Conservation Area in order to protect the unspoilt nature of this integral component of the global eco-system. The convention is to take effect as soon as 16 of the 20 voting members of the Antarctic Treaty of 1959 ratify the agreement. Thus, it would seem that the economic calculation of nations is about to prevail, with potentially disastrous consequences for the global eco-system. An informed and wise global policy requires "anticipatory" thinking as well as concerted and timely actions undertaken with a sense of urgency which has characterized recent policy developments with regard to ozone depletion. In the short run, policies of

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reducing further environmental degradation may be tolerable. In the long run, the challenge is to restore the planet. Environmental logic demands broad-based international cooperation and coordination of policies, and requires the international community to evolve effective global environmental policies. Given the magnitude of the problems, and their profound implications, there is no place for exclusive national responses in addressing most of these challenges. The fate of the Earth, as well as our own, depends on what we choose to do.

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Biographical Note

MUKUND G. UNTAWALE is associate professor of international relations at San Francisco State University, San Francisco. His articles have appeared in the *International and Comparative Law Quarterly, Asian Survey*, and the *Yearbook on International Communist Affairs*. He is currently researching the problems and prospects of regional cooperation in South Asia, including possible cooperation relating to the regional environment. ADDRESS: Department of International Relations, S.F. State University, 1600 Holloway Ave., San Francisco, CA 94132, USA.

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