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FOREWORD

OF HERDSMEN AND NATION STATES: THE GLOBAL ENVIRONMENTAL COMMONS

Frederick R. Anderson*

This year marks the 20th anniversary of Earth Day and the start of a new decade that has already begun to challenge lawyers, policy makers, and citizens to address threats to the global environment. Earth Day 1970 was followed by a buildup of the nation's legal arsenal to attack domestic environmental disruption. Earth Day 1990 will be celebrated worldwide, summoning governments, international organizations, academic institutions, and citizens to add global environmental problems to their concerns.

The challenge is great. A rich diversity of social and political perspectives, institutional innovation, complex global scientific modeling, wrenching economic disparities, national sovereignty, and "ecopolitics" at the highest level characterize the second environmental decade of the twentieth century. The simple metaphor of the lowly herdsman adding one more animal to the communal pasture, finally overloading it, seems strained as mighty nation states exploit and pollute the global commons.¹

Technology, of course, has produced most of the economic development which causes environmental disruption, but science has played a larger and more constructive role. Technology disrupts, but science diagnoses. The science of planetary interdependence promotes a global perspective. Science has revealed with growing exactitude the degradation of the earth's air, oceans, forests, and other resources. Science, for example, has documented the complex associations between climate

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1. Hardin, *The Tragedy of the Commons*, 162 *SCIENCE* 1243 (1968).

change and fossil fuel combustion,² chloroflourocarbon release and ozone shield disruption,³ radioactive fallout and arctic bioaccumulation,⁴ pesticide use and biodiversity reduction,⁵ and oil production and seabird poisoning.⁶ Just as the growing integration of world markets causes one nation's economic policy to be felt around the globe, requiring international economic accords, effective environmental protection is now increasingly believed to require a coordinated effort on the part of all nations.

Science not only enhances our understanding, it also promises to assist in solving environmental problems.⁷ For example, wetlands restoration is a flourishing specialty.⁸ The use of satellites to detect the discharge of pollutants may play a significant role in policing the global

2. See e.g. Schneider, *The Changing Climate*, SCI. AM., Sept. 1989, at 70, 74-75 (1989) (stating that mathematical computer models using current and projected carbon dioxide emission rates project that the average surface temperature of the earth will increase by between 3.0 and 5.5 degrees Celsius between 2030 and 2080). This temperature change, unprecedented in human history, would match the five-degree warming that occurred since the last ice age over 18,000 years ago and would occur between 10 and 20 times faster. *Id.*

3. See e.g. Graedel and Crutzen, *The Changing Atmosphere*, SCI. AM., Sept. 1989, at 58 (analyzing the role of chloroflourocarbons such as CFC-11 and CFC-12 in depleting the ozone layer). Chloroflourocarbons are used extensively as refrigerants, aerosol propellants, solvents, and blowing agents. *Id.* at 63.

4. B. COMMONER, SCIENCE AND SURVIVAL 12-19 (1963). Transboundary nuclear pollution is also a problem. See CHERNOBYL: LAW AND COMMUNICATION (P. Sands ed. 1988) [hereinafter CHERNOBYL: LAW AND COMMUNICATION] (providing a detailed account of the Chernobyl nuclear accident, subsequent developments within the International Atomic Energy Agency and an overview of international law principles relevant to transboundary nuclear pollution). The book also provides the texts of a broad range of treaties, conventions and protocols applicable to transboundary nuclear pollution.

5. See BOARD OF AGRICULTURE'S COMMITTEE ON THE ROLE OF ALTERNATIVE FARMING METHODS IN MODERN AGRICULTURE, NATIONAL RESEARCH COUNCIL, ALTERNATIVE AGRICULTURE 97 (1989) (discussing problems associated with pesticide use in the United States that include immediate health threats to farmworkers, threats to animal species, particularly honey and wild bee populations, and the development of target pest resistance to pesticides over time). Vast stocks of plant and animal species offering material benefit are threatened just as science is discovering methods of exploiting genetic variability through genetic engineering. WORLD COMMISSION ON ENVIRONMENT AND DEVELOPMENT, OUR COMMON FUTURE 147 (1987) [hereinafter OUR COMMON FUTURE]. This notwithstanding the fact that roughly half of all medical prescriptions have their origins in wild organisms. *Id.* at 155.

6. Ford, Hunt, Wiems, and Heineman, *Modeling the Sensitivity of Colonial Breeding Marine Birds to Oil Spills*, 19 J. OF APPLIED ECOLOGY 1 (1982).

7. See e.g. CHERNOBYL: LAW AND COMMUNICATION, *supra* note 4, at 5 (noting that while modern technology led to the occurrence of the Chernobyl nuclear accident, satellites identified the source of the pollution for all the world).

8. See THE CONSERVATION FOUNDATION, PROTECTING AMERICA'S WETLANDS: AN ACTION AGENDA, FINAL REPORT OF THE NATIONAL WETLANDS POLICY FORUM 61 (1988) (stating that for years developers seeking to mitigate adverse impacts on wetlands arising from development activities have practiced wetlands restoration).

commons.⁹ Scientific advances have furthered our understanding of the causes and consequences of environmental degradation, facilitated the adoption of international agreements, and motivated citizens to demand stronger environmental protection worldwide.

Technology drives development, and science demonstrates the tie between economic development and environmental disruption, but contemporary worldwide democratic politics include a strong, possibly underappreciated, environmental component. Western European "green" parties¹⁰ have nascent counterparts in Eastern Europe.¹¹ Despite severe shortages of foodstuffs and consumer goods, many Russian citizens desire a political and economic restructuring in part to protect their environment from radioactivity and air and water pollution.¹² Some South American Marxist economists have long espoused an environmentalist perspective to shield natural resources from careless diminution in their economic value. Japanese national politics have, since the 1960s, included a strong ideological environmental component. Indeed, in the 1970s, the Japanese Communist party espoused a militant version of environmentalism, although Japanese national policy remained conservative on environmental issues.¹³

An international perspective permeates most of the democratic movements emerging as the second environmental decade begins. Interestingly, communications technology has played a vital role in providing

9. See *supra* note 7 (discussing the use of satellites in detecting nuclear pollution).

10. See Sallnow & Arlett, *Green Today Gone Tomorrow*, GEOGRAPHICAL, Nov. 1989, at 10 (discussing the political success of green parties throughout Western Europe, particularly in the Federal Republic of Germany, Austria, Italy, Sweden, the Netherlands, France, and Great Britain).

11. See *id.* (discussing the formation of pro-green lobbies in Poland, Hungary, and the Soviet Union); Letter from William K. Reilly, Administrator of the United States Environmental Protection Agency to Honorable James Baker, United States Secretary of State (Feb. 7, 1990) (advocating a strong environmental mandate in the charter of the new East Europe Development Bank). The Administrator stated that "[i]t was no accident that environmental groups helped lead the change in countries such as Poland, where half the rivers are so toxic that they cannot be used even in industry for fear of destroying equipment, or in Hungary, where air pollution accounts for one in 17 deaths." *Id.*

12. See *Russia's Greens*, ECONOMIST, Nov. 1989, at 27 (stating that although green groups lack a formal voice in parliament, five major groups have emerged in the Soviet Union generally advocating stricter pollution controls and a political restructuring that would permit greater attention to environmental concerns); see also Robinson, *Perestroika and Priroda: Environmental Protection in the USSR*, 5 PACE ENVTL. L. REV. 351 (1988) (discussing ecological problems in the Soviet Union and current Soviet efforts to restructure its administrative and legal systems to better address environmental problems).

13. See generally, J. GRESSER, K. FUJIKURA, & A. MORISHIMA, ENVIRONMENTAL LAW IN JAPAN (1981) (discussing the historical development of environmental law in Japan).

the information required. Television, copiers, computers, fax machines, and satellite dishes have spread worldwide and have contributed, not only to democratization,¹⁴ but to international environmental consciousness as well.

Perhaps the international impact of domestic democratizing and upheaval in Eastern Europe, China, and South America helps account for the sudden rise of environmental concerns to the top ranks of the international community's agenda. Some such explanation is warranted, because pollution of the sea by medical waste and oil spills, acid deposition in lakes and forests, ozone shield reduction, and climate change have been well modeled and publicized for almost a quarter century. In the summer of 1970, I helped prepare and edit the first annual report of the newly created Council on Environmental Quality within the executive office of the President. Council member and geophysicist Gordon MacDonald drafted a carefully documented chapter with the title "Man's Inadvertent Modification of Weather and Climate." The result, accessible in this twenty year old report, shows that climate modification was relatively well understood in the 1960s.¹⁵ In the 1970s, acid deposition had matured to an officially recognized international concern and stimulated high-level governmental and private attention in Europe¹⁶ and between the United States and Canada.¹⁷

Global environmental problems in the emerging era of democratization and (hopefully) peace may present the single greatest threat to human survival and well being—enough of a reason in itself, perhaps, to have environmental concerns rise to the top of the public agenda. For example, as Durwood Zaelke and James Cameron subsequently make clear in this symposium, climate change may shift the world's foodbelt of grain production and may cause the irreversible loss of coastal resources that cannot adjust to the rate of sea level change. Low-lying islands may disappear entirely, and some lesser developed nations may be forced to bear the consequences of rising sea levels ulti-

14. Talbott, *Glued to the Tube*, TIME, Jan. 8, 1990, at 46.

15. COUNCIL ON ENVIRONMENTAL QUALITY, FIRST ANNUAL REPORT 93-104 (1970) (chap. V).

16. For efforts for which the author was in part responsible, see STANDING COMM. ON ENVTL. LAW, A. B. A., AIR POLLUTION CONTROL: NATIONAL AND INTERNATIONAL PERSPECTIVES (1980) (providing a collection of papers prepared for and following the International Conference on Air Pollution Control, convened in April 1979 in Berlin, West Germany under the joint auspices of the Aspen Institute and the American Bar Association's Standing Committee on Environmental Law).

17. See ENVTL. LAW SECTION OF THE CANADIAN BAR ASS'N AND STANDING COMM. ON ENVTL. LAW OF THE A.B.A., COMMON BOUNDARY/Common Problems: THE ENVIRONMENTAL CONSEQUENCES OF ENERGY PRODUCTION (1982) (providing the proceedings of a conference held at Banff, Alberta Canada, Mar. 19-21, 1981).

mately caused by pollution for which they bear little or no responsibility. Vast expanses of forest lands continue to be lost to agricultural uses.¹⁸ Rain forests that serve as the lungs of the planet are destroyed at a rate of a twenty to forty hectares a minute, the pace often hastened by poorly planned government subsidies for industry and short term economic interests.¹⁹ In other parts of the world, agricultural and range lands continue to recede with the advance of deserts, straining both food production and wildlife populations.²⁰ Acid rain continues to destroy forests and acidify lakes across national frontiers.²¹ The safe shipping and disposal of hazardous wastes challenges the international community to develop a coordinated regulatory system which takes into account differences in cultures, legal systems, and government resources.²² Perhaps most significantly, unrestrained population growth now confronts growing limitations on food and energy resources.²³

Some of the earth's common resources are now seriously threatened with irreversible depletion. Foremost is the possible collapse of entire animal populations and ecosystems.²⁴ Modern advances in resource ex-

18. See generally, J. GRADWOHL & R. GREENBERG, *SAVING THE TROPICAL FORESTS* (1988) [hereinafter *SAVING THE TROPICAL FORESTS*] (discussing the causes and rates of deforestation with attention to particular case studies).

19. *Id.* See Comment, *Deforestation in Brazil: Domestic Political Imperative—Global Ecological Disaster*, 18 ENVTL. L. 537 (1988) (discussing the loss of rain forests in Brazil); Lynch & Talbot, *Legal Responses to the Philippine Deforestation Crisis*, 20 N.Y.U. J. INT'L L. & POL. 697 (1988) (discussing the loss of rain forests in the Philippines). Annually, Philippine deforestation averages up to 220,000 hectares. *Id.* at 79. If deforestation continues at current rates, the Philippines will be practically deforested by the turn of the century. *Id.*

20. Crosson & Rosenberg, *Strategies for Agriculture*, SCI. AM., Sept. 1989, at 128.

21. See Garland, *Acid Rain Over the United States and Canada: The D.C. Circuit Fails to Provide Shelter Under Section 115 of the Clean Air Act While State Action Provides a Temporary Umbrella*, 16 B.C. ENVTL. AFF. L. REV. 1 (1988) (reviewing the acid rain problem in North America and the role of the Clean Air Act in regulating acid rain emissions); Note, *On Doubting Thomas: Judicial Compulsion and Other Controls of Transboundary Acid Rain*, 2 AM. U.J. INT'L L. & POL'Y 361 (1987) (discussing the problem of acid rain and analyzing national and international controls in context with the United States Court of Appeals decision in *New York v. Thomas* concerning control of acid rain emissions under the Clean Air Act).

22. Hackett, *An Assessment of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal*, 5 AM. U.J. INT'L L. & POL'Y 291 (1990); Bromm, *Creating a Hazardous Waste Management Program in a Developing Country*, 5 AM. U.J. INT'L L. & POL'Y 325 (1990); Comment, *International Law and the Transboundary Shipment of Hazardous Waste to the Third World: Will the Basel Convention Make a Difference?*, 5 AM. U.J. INT'L L. & POL'Y 393 (1990).

23. See OUR COMMON FUTURE, *supra* note 5, at 95 (noting that in 1985 the world's population increased by some 80 million people, while natural resources for sustaining the world's 4.8 billion people remained constant).

24. See Kindt, *International Environmental Law and Policy: An Overview of Transboundary Pollution*, 23 SAN DIEGO L. REV. 583, 585 (1986) (noting that al-

plotation, such as drift net fishing in the Pacific in which roughly 20,500 miles of drift netting is set nightly, indiscriminately stripping life from the sea, illustrate the need to protect the global commons.²⁵ Similarly, nations and industries have continued to view the air and sea as receptacles for pollutants that allow costs associated with industry to be borne by the entire world community. This is truly the dilemma of the herdsmen ruining the commons writ large.

The reversal of the current destruction of our global commons will require a restructuring of our traditional notions of sovereignty, national security, and international law. To this end, the gathering of world leaders at the United Nations Conference on the Environment and Development in Brazil in 1992 will undoubtedly provide a historic forum for discussing needed change.²⁶ New international organizations must be developed and the roles of existing ones redefined. Successful efforts may require the creation of an international trustee for the world's shared resources.²⁷ The international community may develop a new mission for the United Nations Trusteeship Council that includes guardianship of the global commons.²⁸ Other solutions may include the creation of an international environmental protection agency or an expanded role for non-governmental organizations (NGOs) which would allow them access to international legal fora to protect shared resources, although international law to date has limited NGOs to observer or advisory status. Presently, organizations such as the World Wildlife Fund, Greenpeace, and the new Centre for International Environmental Law have combined staff and funding that far exceeds those of United Nations Environment Programme (UNEP).

though environmental "backlashes" are predictable, the timing and magnitude of such events is uncertain). The author cites the example of Lake Erie in the United States which, despite monitoring and scientific predictions of gradual degradation from pollution, suddenly collapsed into a dead lake. *Id.*

25. Fjelstad, *The Ghosts of Fishing Nets Past: A Proposal for Regulating Derelict Synthetic Fishing Nets*, 63 WASH. L. REV. 677, 678-81 (1988).

26. See *United Nations Conference on Environment and Development*, G.A. Res. 228, 44 U.N. GAOR Supp. (No. 49) at 500, U.N. Doc. A/44/49 (1989) (deciding to convene a two week United Nations Conference on Environment and Development at the highest level of participation).

27. Weiss, *The Planetary Trust: Conservation and Intragenerational Equity*, 11 *ECOLOGY L.Q.* 495 (1984); See generally the symposium issue, *Environmental Law and Policy in Developing Countries*, 12 *ECOLOGY L.Q.* 675-1106 (1985) (providing a collection of articles addressing environmental problems in developing countries).

28. See Address by Maurice F. Strong, President of the World Federation of United Nations Associations, National Conference on "Peace making and Peace Keeping: Canada and the United Nations," Dalhousie University, Halifax, Nova Scotia, June 5, 1988 (on file at the office of the American University Journal of International Law and Policy) (proposing the revitalization of the United Nations Trusteeship Council to act as trustee for the global commons).

International fora for dispute resolution such as the International Court of Justice will have to embrace new theories of state responsibility. The creation of an entirely new environmental court of justice with power to enforce international environmental controls may be necessary to address problems of transboundary pollution and destruction of global commons. As Garrett Hardin noted more than twenty years ago in his seminal article "The Tragedy of the Commons," "[t]he law, always behind the times, requires elaborate stitching and fitting to adapt it to this newly perceived aspect of the commons."²⁹

The realization that many environmental problems affecting the health and long term prosperity of nations require global solutions has caused governments, international organizations, and academic institutions to begin rethinking traditional notions of state sovereignty, security, and the role of international law. The students of *The American University Journal of International Law and Policy* have labored for nearly a year to provide legal writers in the United States and elsewhere with a prominent forum for addressing legal issues related to international environmental law. As a result of their efforts, the international legal community now has available in this issue an outstanding collection of speeches, articles, and legal materials that provide rigorous legal analysis of a number of pressing international environmental problems. The publication of international legal materials relating to the development of a global convention on climate change may represent the most comprehensive collection of national policy statements on global warming to date. Perhaps more significantly, the symposium issue offers valuable insights into the negotiating process that leads to the creation of conventions and protocols concerning international environmental law.

This symposium embraces diverse issues ranging from climate change, through hazardous waste disposal, to vessel source pollution at sea. Important common themes emerge concerning the role of science in the international environmental negotiating process, recognition by the international community of the importance of securing the participation of less-developed nations while recognizing their cultural distinctions and limited enforcement resources, and assimilation of economic incentives and principles of sustainable development into international environmental law. Challenges to the traditional role of international organizations and principles of international law are also found throughout the issue.

In the symposium's opening speech, Ambassador Richard Benedick

29. Hardin, *supra* note 1, at 1245.

elaborates on the fundamental role of science in the adoption of the Montreal Protocol. Ambassador Benedick, who served as chief United States negotiator for the Montreal Protocol, notes that scientific consensus provided the foundation for the negotiations that followed and greatly facilitated the adoption of the Protocol. The theme of developing a scientific foundation as a prerequisite to binding international environmental controls is echoed and expanded in Carol Annette Peterson's article on recent developments within the United Nations Environment Programme. Ms. Peterson, a former attorney with UNEP's Law Unit in Nairobi, Kenya, details UNEP's approach to the creation of international environmental law through the establishment of nonbinding guidelines that often lead to binding environmental conventions and protocols. In addition to reviewing UNEP's current efforts in the field, Ms. Peterson proposes a model of UNEP's approach that should include a greater role for economic compliance incentives and sustainable development for states and people dependent on protected or regulated resources.

The response of the World Bank to a broad range of environmental problems, including population growth and poverty, is detailed by the Bank's President, Barber B. Conable, in a speech delivered last year before the Tokyo Conference on the Global Environmental and Human Response Toward Sustainable Development. He advocates the need for a coordinated effort on the part of the World Bank and developed nations in addressing the related problems of poverty, population growth, energy production and conservation, the generation of greenhouse gases, and natural resource management in less developed nations. Durwood Zaelke and James Cameron, co-founders of the Centre for International Environmental Law (CIEL), discuss strategies for developing nations to participate more effectively in the international response to global warming and sea-level rise. The authors note that global warming and consequent sea-level rise may destroy low-lying states, such as the Maldives Islands and Kiribati Islands. Fora such as the United Nations Intergovernmental Panel on Climate Change and the International Court of Justice will struggle to address issues of prevention, compensation for lost territory, and the responsibility of environmental refugees. Against a backdrop of emerging scientific evidence on the potential impact of global warming and sea-level rise, the authors argue for greater participation by less developed and low-lying states in the international legal process. The authors also propose an expanded role for NGOs such as public interest groups, corporations, law firms, and foundations in assisting these states as the most effective means of ensuring their participation. The authors also recommend ex-

panding the role of the International Court of Justice in enforcing environmental standards. The authors advance a restructuring of the international legal system which includes conferral of standing on NGOs to enforce international environmental rules.

David Hackett provides an assessment of UNEP's most recent accomplishment, the international adoption of the Basel Convention on the Transboundary Movements of Hazardous Wastes and Their Disposal. The Convention establishes a global framework for ensuring the safe shipment and disposal of hazardous wastes across national boundaries. Although ratification was a significant step toward securing expanded regulation of transboundary shipments of hazardous wastes, Mr. Hackett explains that UNEP faces considerable difficulties in implementing the Convention. For example, the author notes that the failure to establish a universal definition of hazardous waste and differing national regulatory programs inhibit enforcement. Further, the absence of a formal forum for deciding disputes arising under the Basel Convention, and the lack of any international enforcement body, limits the effectiveness of the Convention. A total ban on the transboundary shipment of hazardous waste is advocated in Marguerite Cusack's Comment which also analyses the Basel Convention. Ms. Cusack also emphasizes the need for developed countries to minimize hazardous waste generation and to develop recycling technologies in response to the growing problem of hazardous waste disposal.

Broader treatment of the problems confronting developing states in handling hazardous waste is found in a proposed framework for maximizing developing countries' limited resources for hazardous waste management in an article by Susan Bromm, the Director of Resource Conservation and Recovery Act Enforcement for the United States Environmental Protection Agency. Again, the role of science and technology in accurately and efficiently assessing environmental hazards assumes a prominent role. The paper arises in part from the author's participation in an international conference on adapting hazardous waste management programs to the needs of developing countries. Both the conferees and the author stress the need for adaptable environmental standards that can respond to unique cultural, political, and economic exigencies within developing countries.

The use of the world's oceans as dumping grounds for ship wastes and the problems associated with transboundary plastics pollution are graphically displayed in a Comment authored by Paul Hagen, who reviews the recent adoption of Annex V to the International Convention for the Prevention of Pollution from Ships (MARPOL). Each year plastics in marine waters cause the deaths of tens of thousands of

marine sea birds, mammals, turtles, and fish. The comment focuses on the limited enforcement mechanisms available to ensure the proper disposal of ship wastes and discusses economic incentives that may lead to increased at-sea incineration of ship wastes and consequent threats to the marine environment from ash disposal at sea. Also, recommendations for multilateral and unilateral action for reducing plastics pollution of the world's oceans are proposed in response to the growing plastics pollution of the earth's marine commons.

This symposium issue also stands as a forerunner to a new LL.M. track in international environmental law which will begin this fall at the Washington College of Law. The first of its kind, the new masters program draws upon the unique international and environmental expertise of practitioners and scholars in international, governmental, and environmental organizations in Washington, D.C. The *Journal's* publication of this special issue and the law school's responsiveness to the growing need for international environmental lawyers both stand as significant achievements for a school with a long list of firsts.

This issue of *The American University Journal of International Law and Policy* provides timely insight into a number of significant international environmental problems. The collection defines basic themes, such as the need for institutional change; consideration of cultural, legal, and economic differences between nations; and effective protection of the global commons which are certain to play prominently in the evolution of international environmental law. Although this collection of speeches, articles, and legal materials broadens and deepens the debate on international environmental law, the great environmental and institutional challenges facing the international community will require revisiting in the future. I expect that our student editors will once again be in the vanguard when the need arises.