

# TOOLS FOR ENVIRONMENTAL PEACEBUILDERS

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## *Abstract*

Scholars and activists promoting peace and environmental values have tended to work independently of one another, even though their goals and agendas are interrelated. Inspired by Chadwick Alger's metaphor of a tool chest for peacebuilders, this article proposes twenty-four tools for environmental peacebuilding. These tools are organized into four categories (or drawers): (a) international law, (b) international governmental organizations (IGOs), (c) concepts and principles, and (d) non-governmental organizations (NGOs) and global civil society. Collectively, they can contribute to peace not only by ameliorating resource scarcities and environmental stresses that may lead to violent conflict, but also by fostering cooperative relations among IGOs, national governments, and non-governmental groups, while addressing environmental related social injustices.

## **Introduction**

Peace and ecological well-being are mutually reinforcing human aspirations. Peace advances environmental causes, while environmental stability enhances the prospects for peace. Despite the interrelatedness of peace and the environment, these values have been promoted by distinctive communities of activists and scholars, who have tended to operate independently of one another. There has, however, been a growing recognition in both movements that there is much to be gained by working together in pursuing their goals.

The rapid growth and industrialization of the world population during recent decades has raised concerns that resource scarcities and environmental stresses will trigger an increase in the frequency and intensity of violent conflict around the world (Klare, 2001). Some have questioned the extent to which history bears out the thesis that resource and environmental limits give rise to interstate wars, and have even suggested that conflicts over resources may induce additional cooperation among countries, especially democratic ones (Deudney and Matthew, 1999; Gleditsch, 1997). Case studies, however, provide a growing body of evidence that environmental scarcities and stresses contribute to social circumstances that increase the likelihood of violent conflict within countries (Homer-Dixon, 1999).

For several decades, environmentalists have drawn attention to the ecological problems caused by wars and arms races (Westing, 1990). Much of the environmental devastation of warfare has been an unintended consequence of military operations, but destruction of the environment, such as "scorched earth" operations, may also be part of a conscious strategy designed to achieve a tactical advantage. The United States was criticized during the Indochina War for engaging in "ecocide" for employing large-scale jungle clearing operations to deny cover to the insurgent forces it was fighting against (Weisberg, 1970). Preparations for war, including military training exercises and the manufacture of armaments, can also exact a very heavy toll on the environment. The production and testing of nuclear weapons has left massive amounts of radioactive waste, which will threaten human health for generations. The 1980s brought the revelation that a nuclear war between the superpowers could become humanity's

ultimate assault on the environment, as sooty pollution from explosions and fires would block out energy from the sun, thus plunging the world into an extended period of cold and darkness, described as a “nuclear winter” (Erhlich et al., 1984).

Chadwick Alger (1996, 1999) introduced the metaphor of a “tool chest” to call attention to a variety of practical approaches that could be used to further the cause of peace. Two of the twenty plus tools that he enumerated are also ecological in nature - “international ecological balance” and “governance for commons.” This article extends Alger’s tool chest metaphor to the environmental realm by identifying twenty-four tools that can be applied to the challenges of achieving ecological stability, and in doing so advance the cause of peace. These tools may be

Drawer I- International Law
Drawer II- International Governmental Organizations
Drawer III- Concepts
Drawer IV- Non-Governmental Organizations and Global Civil Society

Figure 1. A Tool Chest for Environmental Peacebuilders

looked upon as instruments for environmental peacebuilding - or environmental “peacemaking,” to borrow a concept introduced by Ken Conca, who suggests that “environmental cooperation can be an effective general catalyst for reducing tensions, broadening cooperation, fostering demilitarization, and promoting peace” (2002: 9). This list of tools is certainly not a comprehensive overview of the possibilities, but rather is suggestive of the diversity of instruments through which environmental values and thus peace can be advanced. They will be divided into four broad categories, or what Alger refers to as the drawers of the tool chest: (a) international law, (b) intergovernmental organizations, (c) concepts and principles, and (d) non-governmental organizations (NGOs) and global civil society.

### **International Law**

International law has much to offer environmental peacebuilders in that it sets forth rules that guide the behavior of states in ways that further their common interests, while providing a basis for peacefully resolving conflicts that may arise among them. While international environmental law has evolved over many centuries, especially in regard to the law of the sea, it

has developed very rapidly over the past fifty years with the adoption of numerous treaties and declarations.

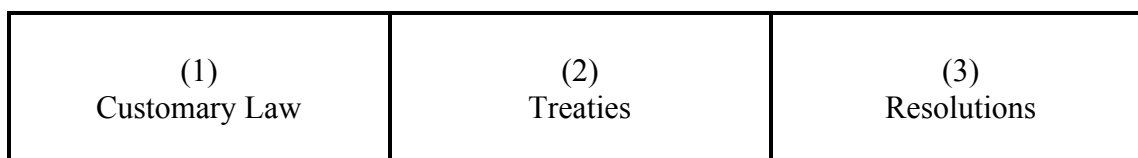


Figure 2. The International Law Drawer

The most traditional form of international law is *customary law (1)*, a legal tradition that has its origins in ancient Roman law. In the international context, customary law encompasses the norms of behavior that have been widely observed by states over time and are considered by states to be legal requirements. The precepts of customary law tend to be rather abstract and subject to varying interpretations. They are not expressed in official legal documents, but are inferred from the behavior of states. Interpretations of existing customary law can be found in international court cases and in the writings of noted legal scholars (Janus, 1999: 41-54).

Numerous principles of customary law imply expectations for states in the environmental realm, a key one being “state responsibility.” The governments of states are expected to ensure that their actions, or activities taking place within their jurisdiction, do not cause significant damages beyond the borders of their states. This principle of state responsibility was affirmed by the decision in the *Trail Smelter Case* (1941) in which the United States complained that fumes from a large smelting operation in Trail, British Columbia, were causing environmental damage across the border in the state of Washington. An international tribunal assembled to hear the case ruled in favor of the United States and called upon Canada to take steps to prevent further transboundary environmental damages from the smelter and to compensate the United States for past damages (Wirth, 1996).

Some tenets of international customary law have complicated the task of addressing environmental problems. States invoke the doctrine of sovereignty over their natural resources within their territory as they resist international efforts to restrain population growth, share water resources, preserve forests, and protect endangered species. The long-standing doctrine of the “freedom of the seas” has led to the over-harvesting of numerous marine fisheries in ways that bear out Garrett Hardin’s (1968) parable of the “tragedy of the commons.”

The abstract, unwritten principles of customary law has become increasingly inadequate as guides for state behavior as the number of sovereign states approaches two hundred, the world’s population has grown to more than six billion, and environmental stresses have become more numerous and severe. Thus, there has been an increasing use of *treaties (2)* for spelling out the legal responsibilities of states in many realms of interstate relations, including the environment. Treaties are written contracts negotiated between states, the terms of which are binding on the states that ratify them. Since 1945, approximately 300 multilateral treaties have been adopted that address environmental problems, 225 of which have been ratified by enough states to enter into force. The most significant of these multilateral treaties are conventions and protocols that all states may participate in negotiating and are encouraged to ratify. Some examples are the Convention on International Trade in Endangered Species (1973), the

Convention on the Law of the Sea (1982), the Montreal Protocol on Substances that Deplete the Ozone Layer (1987), the Framework Convention on Climate Change (1992) and the Kyoto Protocol (1997), and the Convention on Biological Diversity (1992). Other multilateral treaties are targeted at groups of countries, such as the agreements designed to limit pollution of the Mediterranean and Baltic Seas. In addition, there are an estimated 1,000 environmental treaties involving pairs of states, including those the United States has signed with Canada and Mexico on subjects such as water and air pollution (Barrett, 2003: 134-138).

Treaties have become the principal type of international legal instrument for establishing rules and responsibilities for states to ameliorate environmental problems and to resolve disputes that may arise between them on these matters. Some are proving to be quite effective in achieving their goals, the Montreal Protocol that addresses depletion of the ozone layer being a notable example. Treaty negotiations can, however, be painfully slow, dragging on for years and even decades, especially when they involve a large number of states with conflicting interests. Moreover, the outcomes of the treaty negotiations tend to reflect a rather low common denominator of mutual interest. Even then, states may be reluctant to ratify treaties that have been negotiated, and thus to avoid making a commitment to the rules and responsibilities that they contain (Janus, 1999: 9-41).

**Resolutions (3)**, which are adopted by a majority vote in many international bodies, such as the United Nations General Assembly, offer a less time-consuming alternative to the cumbersome process of negotiating treaties. Numerous resolutions, some of which are labeled declarations, statements of principles, codes of conduct, or action plans, offer guidelines for the behavior of states. However, unlike the customary and treaty forms of international law which are binding on states, resolutions and declarations are generally regarded not to be obligatory, even for the states that vote for them. Thus, resolutions are often referred to as “soft law.” In some cases, a resolution or declaration sets forth principles that later become the basis for negotiations on a treaty. A few such documents that are widely embraced, a notable example being the Universal Declaration of Human Rights of 1948, may even be viewed as expressions of principles of customary law (Janus, 1999: 50-53).

Numerous resolutions and other non-binding documents address environmental issues. Examples include the Declaration of Principles Governing the Seabed (1970), the Stockholm Declaration adopted at the United Nations Conference on the Human Environment (1972), the World Conservation Strategy (1980), *Agenda 21* and the Statement of Forest Principles adopted at the Earth Summit (1992), and the United Nations Food and Agriculture Organization’s Code of Conduct for Responsible Fishing (1996). A case could be made that the frequently cited Principle 21 of the Stockholm Declaration, which provides that states have “the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction” could be considered an expression of international customary law (United Nations Conference on the Human Environment, 1972).

### **International Governmental Organizations**

International governmental organizations (IGOs) provide a broad variety of tools for pursuing environmental goals (Haas, Keohane, and Levy, 1993; Werksman, 1996; Soroos,

1999). Among these institutions are United Nations bodies such as the General Assembly, Economic and Social Council (ECOSOC), United Nations Environment Program (UNEP), Global Environment Facility (GEF), and Commission on Sustainable Development (CSD). Several of the specialized agencies affiliated with the United Nations have assumed environmental roles, such as the Food and Agriculture Organization (FAO), International Maritime Organization (IMO), World Health Organization (WHO), World Meteorological Organization (WMO), and United Nations Educational, Scientific, and Cultural Organization (UNESCO). The European Union (EU) and the African Union (formerly the Organization of African Unity) are among the many regional IGOs that address environmental issues. The International Joint Commission (IJC) is a bilateral institution that addresses environmental issues pertaining to the rivers and lakes shared by Canada and the United States.

(4) Monitoring and Research	(5) Information and Education	(6) Rule Making	(7) Guidelines and Standards
(8) Dispute Settlement	(9) Assistance Programs	(10) World Conferences	(11) Independent Commissions

Figure 3. The International Governmental Organization Drawer

**Monitoring and research (4)** are among the more important environmental tools of IGOs. Knowledge of environmental trends and a scientific understanding of natural systems is a prerequisite to effective international cooperation to address ecological problems. Many environmental problems, such as the thinning of the ozone layer, are not readily observable and would go undetected were it not for scientific monitoring and research. In recent decades there has been an impressive increase in the accumulated scientific knowledge of the natural systems of the planet and the extent of human impact upon them. UNEP coordinates the United Nations System-wide Earthwatch that harmonizes and catalyzes environmental observation activities among all United Nations agencies. These efforts are being channeled into separate observing systems developed for the global climate, oceans, and terrestrial regions that involve the international scientific community and national governments. The WMO coordinates the Global Observing System, a component of which is the World Weather Watch (WWW) that collects and compiles atmospheric data from thousands of stations on land, at sea, and in the skies. The United Nations Economic Commission for Europe oversees the EMEP network that monitors emissions of acid-forming air pollutants and their deposition throughout the European region. The data gathered by EMEP has informed the negotiation of treaties addressing the problem of transboundary pollution. The International Council for the Exploration of the Sea (ICES), which was established in 1902, has promoted and coordinated international research on marine environments and fish stocks.

IGOs also play important roles in the **dissemination of information and environmental education (5)**. If scientific knowledge is to inform efforts to address environmental problems, it is important that it be presented to national and international decision makers in a form that is understandable and policy relevant. Moreover, little action can be expected of national and international policy makers unless the broader publics to which they answer are educated on the nature and impact of environmental problems. Toward these ends, UNEP issues its *Global Environmental Outlook* (GEO) reports, which offer a comprehensive overview of the global state of the environment as it has evolved over the past three decades (United Nations Environment Program, 2002). UNEP's Division of Early Warning and Assessment (DEWA) analyzes the state of the global environment and assesses global and regional environmental trends to inform governments of impending environmental threats and offers scientific and technical advice on how to address them. UNEP and WHO jointly sponsor the Intergovernmental Panel on Climate Change (IPCC) that systematically assesses the state of scientific research on global change and issues reports at five-year intervals that are designed to inform negotiators, policy makers, and other interested parties involved in efforts how to address the problem (see IPCC website). WHO publishes information on the diseases to which international travelers may be exposed in countries they visit.

IGOs are instrumental in **international rule making (6)** including, but not limited to, treaties and resolutions mentioned above. Such rules are the essential mechanisms that IGOs have for influencing the behaviors of states in directions that are less environmentally disruptive. The United Nations General Assembly has adopted numerous resolutions and declarations that address environmental problems and established treaty negotiating committees that have drawn up binding agreements on topics such as the law of the sea, climate change, and biological diversity. UNEP has overseen the negotiations on the international agreements that address the problems of depletion of the ozone layer and persistent organic pollutants. International fishery commissions, such as the Northwest Atlantic Fisheries Organization (NAFO), have established numerous rules designed to conserve fish stocks, including regulations on equipment, closed seasons, and quotas that limit catches. The International Whaling Commission (IWC) enacted a moratorium on the commercial harvesting of whales that took effect in 1986. The European Union has adopted several hundred environmental regulations, directives, and decisions that oblige its member states to harmonize their environmental laws and policies on matters such as ambient air quality, auto emission standards, water pollution, and off-shore fishing (Barrett, 2003: 137; Axelrod and Vig, 1999).

International agencies also perform the role of providing environmental **guidelines and standards (7)** that offer countries benchmarks for environmental performance. The WHO has, for example, established health guidelines for human exposure to air pollutants, such as sulfur dioxide, nitrogen oxides, carbon monoxide, ozone, lead, and suspended particulate matter. The WHO and FAO jointly sponsor the Codex Alimentarius Commission which sets international standards for food safety designed to protect the health of consumers and to facilitate fair trade in agricultural products. The International Atomic Energy Agency (IAEA) has established standards for the safety of nuclear power plants to prevent the release of ionizing radiation into the environment, as occurred on a large scale following the 1986 accident at the Chernobyl facility in what is now Ukraine.

Some international institutions provide mechanisms for **dispute settlement (8)**. Conflicts inevitably arise between states on environmental matters, as they do on a wide range of other international issues, such as human rights and trade. Foremost among institutions that provide a

venue for resolving conflicts is the International Court of Justice (ICJ), which has heard a number of environmentally related cases during its fifty-year history. Among these are complaints by New Zealand and Australia in 1972 regarding nuclear tests by France in the South Pacific, the challenges of the United Kingdom and Germany in 1974 to Iceland's unilateral extension of its territorial waters to conserve fisheries off its coasts, and the dispute that arose in the 1980s between Canada and the United States over maritime boundaries in the Gulf of Maine. In 1994 the ICJ rendered a judgment on a conflict between Hungary and Slovakia over completion of the Gabčíkovo-Nagymaros water project on the Danube River (International Court of Justice). The more recently established International Tribunal for the Law of the Sea has begun hearing cases involving interpretations of the 1982 Convention on the Law of the Sea, an example being a dispute between Chile and the European Union over the conservation of swordfish stocks in the southeastern Pacific Ocean.

IGOs also oversee numerous *economic and technical assistance programs (9)* for developing countries (Keohane and Levy, 1996). Many developing countries simply lack the resources to address their environmental problems. Moreover, the immediate imperatives of reducing poverty and economic development will understandably have a stronger claim on their limited capacities than addressing global environmental problems of concern to the highly developed countries. The Global Environment Facility (GEF), which is administered jointly by UNEP, the United Nations Development Programme (UNDP), and the World Bank, was established in 1991 to enable developing countries to participate in international efforts to address global environmental problems. Initially, UNEP directed its grant program exclusively to projects related to biological diversity, climate change, international waters, and depletion of the ozone layer, but recently has added land degradation and persistent organic pollutants (POPs) to its mission (Streck, 2001). The World Bank, which in the past has been strongly criticized for funding major infrastructure projects with little regard for their severe environmental impacts, has gradually increased the number of environmental projects in its loan portfolio (Rich, 1994).

IGOs have held *world conferences (10)* to advance their environmental agendas by convening representatives from national governments, international agencies, NGOs, and the media for intensive discussions on emerging problems. In recent decades the United Nations General Assembly has sponsored many such conferences to focus more attention on specific problems than would be possible during its annual fall sessions, given the crowded agendas. On the environment generally, the General Assembly convened the United Nations Conference on the Human Environment in Stockholm in 1972, the United Nations Conference on Environment and Development (Earth Summit) in Rio de Janeiro in 1992, and the 2002 World Summit on Sustainable Development in Johannesburg in 2003 (Wapner, 2003). Other international conferences have taken up more specific topics, most notably population, food, water, energy, climate, and human settlements. These conferences, which are normally preceded by an extensive series of preparatory meetings, usually adopt several documents, such as a statement of principles, plans of action, and treaties. Activists and representatives of NGOs present their views on the problem at hand at informal forums that are organized to parallel the official meetings. Follow-up conferences are occasionally held five years later to review the progress that has been made in implementing the recommendations of the original meetings. Nevertheless, questions inevitably arise about the impact of the world conferences and whether so many have been held that the international community suffers from "conference fatigue."

International organizations have on occasion appointed special *independent commissions (11)* comprised of internationally respected figures to investigate problems and make

recommendations on how to address them. In 1977, the World Bank established the International Commission on International Development Issues, chaired by former German Chancellor Willy Brandt, to explore ways to break the impasse between developed and less developed countries on economic development and reforming the international economic order. About the same time, Swedish Prime Minister Olof Palme was invited to chair an Independent Commission on Disarmament and Security Issues, which submitted a report entitled *Common Security: Blueprint for Survival* (1982). The 21-member World Commission on Environment and Development, chaired by Gro Harlem Brundtland of Norway, is especially noteworthy for its influential report *Our Common Future* (1987), which explored strategies for achieving sustainable development and provided the intellectual groundwork for the 1992 Earth Summit.

### Concepts and Principles

Ideas in the form of concepts and principles may also be looked upon as tools for advancing environmental values, as they can have a profound impact on the long-term direction of international public policy. Such concepts and principles tend to be quite abstract and subject to a variety of interpretations. It is their general nature, however, that has made them so useful and widely applicable.

(12) Sustainable Development	(13) Precautionary Principle	(14) Common Heritage Principle
(15) Ecological Security	(16) Environmental Justice and Rights	(17) Intergenerational Equity

Figure 4. The Concepts Drawer

Perhaps the most influential and widely used of these concepts over the past two decades is *sustainable development* (12). While this terminology has been subjected to numerous definitions, the most commonly cited is from the report of the Brundtland Commission (mentioned in the previous section) - development that “meets the needs of the present without compromising the ability of future generations to meet their own needs” (World Commission on Environment and Development, 1987: 8). Sustainable development has become the overarching vision that seeks to reconcile the aspirations of the peoples for economic development in ways that do not significantly degrade the natural environment upon which human civilizations depend. Sustainable development was the central guiding vision for the world summits in Rio de Janeiro in 1992 and Johannesburg in 2002, and is being promoted by the United Nations Commission on Sustainable Development. While most discussions on the topic of sustainable



development focus on developing countries, the concept also has applicability to the more highly developed countries, whose intensity of resource use, consumption, and pollution are not sustainable indefinitely. Skeptics argue that the terminology sustainable development has become a convenient and overused buzzword that is devoid of specific meaning and obscures competing goals that are envisioned in fundamentally incompatible ways (Esty, 2001). Such reservations aside, sustainable development offers a vision that offers humanity a sense of direction and a challenge to devise new strategies of development that harmonize economic and environmental goals.

The *precautionary principle (13)* is another precept that has been embraced widely in international environmental policy. It is a response to a growing recognition that prompt international action is often needed to effectively address emerging threats to the environment. As expressed in Article 15 of the Rio Declaration on Environment and Development adopted at the 1992 Earth Summit, the precautionary principle provides that “where there are threats of serious or irreversible damage, lack of full scientific uncertainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation” (United Nations Conference on Environment and Development, 1992). Over the past two decades, the principle has been written into numerous international declarations and treaties that address a broad range of environmental issues, such as climate change, biodiversity, international fisheries management, and persistent organic pollutants. While few would challenge the principle in the abstract, differences of opinion inevitably arise over whether any given threat is sufficiently documented to trigger immediate action to prevent or ameliorate it. The European Union has invoked the precautionary principle as justification for restricting trade in genetically modified organisms, a position that is being challenged by the United States in the World Trade Organization. The significance of the principle is that it encourages an anticipatory, rather than a reactive, approach to dealing with environmental problems (Harremoës et al., 2002).

Arvid Pardo, the United Nations Ambassador from Malta, introduced the *common heritage principle (14)* in a speech on the future of ocean law that he delivered to the General Assembly in 1967. At a time of growing interest in mining mineral-rich nodules lying on the floor of the deep seas, Pardo argued that the seabed should be treated as the “common heritage of mankind” (Anand, 1983: 195-197). Under the common heritage designation, the seabed would belong to humanity as whole, and no part of it, beyond previously recognized coastal zones, could be appropriated by any state. Only peaceful activities would be allowed on the seabed. Moreover, the seabed would be subject to international management in which all states, including landlocked ones, would be entitled to participate. All states would share in the profits derived from exploiting the resources of the seabed, with particular regard for the needs of poor countries. The 1982 Convention on the Law of the Sea declared the seabed to be a common heritage of mankind. Likewise, a 1979 treaty applies the principle to the moon and other celestial bodies. The common heritage principle has not been applied explicitly to other domains beyond national jurisdiction, but the treaties governing uses of Antarctica and outer space incorporate some elements on the common heritage principle. Developing countries have rallied behind the principle out of concern that the wealth derived from the exploitation of the resources of the seabed and outer space would go exclusively to the technologically advanced countries.

The language of common heritage has also been applied to archeological treasures and natural features of extraordinary beauty and uniqueness, such as the Grand Canyon and the Taj Mahal, that are located within the boundaries of individual states. As of June 2003, UNESCO had identified 754 such sites in 129 countries that are parties to the Convention Concerning the

Protection of the World Cultural and Natural Heritage of 1972 (see UNESCO website). In the language of the treaty, these sites comprise a “World Heritage that belongs to all mankind,” but control over them is not transferred to any international body. The states in which these sites are located are responsible for preserving them, with international assistance if needed. There have also been proposals that biological diversity should be looked upon as a common heritage of humanity (Myers, 1979).

The concept *ecological security (15)* has been adopted in many circles to lend a sense of urgency to the threats that environmental degradation pose to human communities and humanity as a whole. Invoking the term security invites comparisons of the seriousness of environmental threats with other types of perils, including military ones that have traditionally been the focus of security studies. The ecological security perspective can be traced to Richard Falk’s (1972) path-breaking book *This Endangered Planet* and to a proposal by the Soviet leaders Mikhail Gorbachev and Eduard Shevardnadze to the United Nations General Assembly for an “international regime for ecological security” (Timoshenko, 1992). The concept has been interpreted in two distinctive ways. The first is that resource scarcities and environmental stresses increase the likelihood of tensions that may lead to armed conflict either within or between states. Thus, environmental degradation becomes a threat to military security. Alternatively, environmental changes may be looked upon as a direct threat to human health and well-being. For example, a thinning of the stratospheric ozone layer caused by chlorofluorocarbons and other synthetic chemical compounds may expose human populations to increased doses of health threatening ultraviolet radiation. Some of the small island states of the South Pacific are especially vulnerable to rising sea levels caused by global warming attributable to human emissions of greenhouse gases. Environmental security can be enhanced either by reducing human impacts on the environment or by enhancing the capacity of states and communities to adapt or cope with environmental changes (Soroos, 1994; 1997). It is noteworthy that a recently leaked Pentagon report argues that “climate change should be elevated beyond a scientific debate to a US national security concern,” which eclipses the threats to global security posed by terrorism. The report warns that abrupt climate changes within the next twenty years could bring trigger nuclear conflict, mega-droughts, famine, and widespread rioting across the world (Townsend and Harris, 2004).

Another of the important conceptual tools are the principles of *environmental justice and human rights (16)*, which have become the subject of active political movements in the United States and elsewhere. These concepts call attention to how lower income and working-class people, as well as racial minorities, have borne a disproportionate share of harms resulting from pollution and other forms of environmental degradation. Internationally, the high consumption life styles of the industrial countries cast what Peter Dauvergne (1997) refers to as “ecological shadows” on the environments of developing countries through activities such as resource extraction and international trade in toxic wastes. One case that has drawn international attention is the plight of the Ogoni people of Nigeria, whose homeland in the Niger Delta has been ravaged by the drilling activities of Royal Dutch Shell. The issue of environmental justice was also highlighted by an industrial disaster in Bhopal, India in 1984, which released a cloud of highly toxic gases from a chemical plant owned by a subsidiary of the Union Carbide corporation. The accident killed as many as 8,000 people within the first few days, and eventually an estimated 20,000 to 30,000 people (Lapierre and Moro, 2002). In the past, the developing countries have been the recipients of large quantities of dangerous industrial wastes exported from the industrial nations, a problem that was addressed by the 1989 Geneva

Convention on the Transboundary Movement of Hazardous Wastes and Their Disposal and by the Bamako Convention adopted by the Organization of African Unity in 1991. The principle of environmental justice is closely related to a growing recognition that people have environmental rights because a polluted and degraded environment jeopardizes the enjoyment of other human rights, such as the right to health, and accordingly to life itself, one of the most fundamental of all human rights (Trinidad, 1992).

The principle of *intergenerational equity* (17) is a logical extension of the concepts of sustainable development, the precautionary principle, and environmental justice. Some time ago, this author introduced the concept “intergenerational peace” to call attention to the ways that conflicts can arise between generations and the ethical responsibilities that they have to one another (Soroos, 1976). Edith Brown Weiss (1989) has adopted the concept of intergenerational equity in her writings on international environmental law. In the past, it was generally assumed that each generation left an enriched legacy for future generations due to technological advancements and economic development. The rapid growth and industrialization of the world’s population over the past several generations raises the prospect that future generations will inherit an environmentally compromised planet characterized by depleted resources, toxic waste contamination, decimated forests, degraded agricultural land, collapsed fisheries, diminished biodiversity, and an altered climate. Increasingly, international agreements acknowledge the imperative of conserving the environment for future generations, including those that are not yet able to speak up for their interests.

### Non-Governmental Organizations and the Global Civil Society

The last group of tools for achieving environmental peace and sustainability are drawn from what has been referred to as global civil society, which encompasses upwards of 100,000 international and national groups outside of governments that seek to advance environmental causes (Wapner, 1996: 2). While the terminology civil society was initially used primarily to refer to organized public involvement in the political system within countries, non-governmental activity has become a major force at the international level as technologies have facilitated inexpensive global communication.

(18) Environmental NGOs	(19) Scientific Community	(20) Green Parties	(21) Corporate Coalitions
(22) Conservation Theology	(23) Women’s Groups and Ecofeminism	(24) People’s Movements	

Figure 5. The Non-Governmental Organization and Global Civil Society Drawer

Numerous *environmental NGOs (18)* have sought to promote environmental values both within countries and internationally. Among the better known ones are the World Conservation Union (known by the acronym IUCN), World Wide Fund for Nature, Greenpeace, League of Conservation Voters, Sierra Club, Environmental Defense, Natural Resources Defense Council, Union of Concerned Scientists, National Audubon Society, Oceana, Pesticide Action Network, Rainforest Action Network, and Nature Conservancy. Environmental NGOs advance their causes in a variety of ways, such as: launching campaigns to increase public awareness of environmental threats, proposing environmental laws and policies, lobbying lawmakers and government officials, mobilizing voters, monitoring violations of environmental regulations, filing court cases against violators and government agencies, purchasing environmentally sensitive lands, and organizing consumer boycotts. Some NGOs have been granted consultative status with various United Nations bodies and agencies, which provides the NGOs opportunities to participate in their work (Princen and Finger, 1994; Runyan, 1999).

Environmental NGOs have become increasingly active participants at the major United Nations conferences on environmentally related problems. The 1992 Earth Summit in Rio de Janeiro and the 1994 International Conference on Population and Development in Cairo are examples where NGOs participated in the official meetings and especially in the unofficial forums that are held simultaneously. The global civil society is also much in evidence at the non-governmental forums that are held in tandem with most of the United Nations sponsored world conferences. The international NGO community has received some criticism for focusing almost exclusively on environmental goals without being sufficiently sensitive to the development needs of the peoples of poorer countries.

The *international scientific community (19)* has played an important role in calling attention to the seriousness of environmental problems and in identifying potential responses to them. Thousands of scientists from many countries and disciplines have participated in the influential assessments of the state of climate change research conducted through the Intergovernmental Panel on Climate Change, which was mentioned in describing tool #5 (dissemination of information and environmental education) above. The International Council for Science (known by the acronym ICSU) is a non-governmental umbrella organization for 27 international scientific unions and 73 national scientific associations that has advised international policy makers on numerous environmental problems. In an effort to ease Cold War tensions, ICSU organized the International Geophysical Year (1957-58) that engaged the world's scientists in a coordinated effort to expand knowledge about the frontiers of the planet, namely outer space, the polar regions, the deep seas, and the depths of the earth (Atwood, 1959). In 1986 ICSU organized the International Geosphere-Biosphere Programme (IGBP) to investigate problems related to "global change," terminology that refers to the ways in which human activity may be irreversibly altering the basic processes of the Earth system (Malone, 1986). Headquartered at the Royal Swedish Academy of Science, the IGBP has facilitated a continuing multidisciplinary international research effort to increase scientific knowledge of the relationships between the basic components of the Earth system - the atmosphere, oceans, biosphere, and lithosphere. The International Social Science Council sponsors a complementary research effort by social scientists known as the International Human Dimensions Programme on Global Environmental Change (IHDP), which is based in Bonn, Germany.

*Green parties (20)* have been organized in numerous countries with democratic systems since the first green party was formed in New Zealand in 1972. Contrary to the popular perception, green parties do not focus exclusively on environmental issues, but are also

committed to furthering grassroots democracy, social justice, and peace (Talshir, 2002). Representatives from 70 countries attended the first Global Gathering of Green Parties in Canberra in 2001, which laid the groundwork for facilitating communication and cooperation among green parties worldwide (see Global Green Network website). Green parties have enjoyed the most success at the polls in countries with parliamentary systems that award seats based on the proportion of the votes they receive in electoral districts. While green parties rarely receive more than ten percent of the vote in national elections, their presence may compel the major parties to address environmental concerns in order to prevent a loss of votes to green parties. Furthermore, even with a relatively small minority of parliamentary seats, green parties can become partners in ruling coalitions. An example is the Green Party in Germany, which with 6.7 percent of the vote and 47 seats in the Bundestag was invited to join the Social Democratic Party in forming the national government under Chancellor Gerhard Schroeder. Third parties have had greater difficulty achieving a political foothold in winner-take-all electoral districts, as in the United States. Green parties have been prone to internal conflict between those who are willing to compromise on issues to increase their participation within governments and parliaments and those who insist on maintaining the ideological purity of the movement.

There has been a widespread perception that the corporate and business communities pose intransigent obstacles to the achievement of environmental sustainability. It is encouraging, however, that *coalitions for corporate responsibility (21)* have been formed whose members are major firms that look upon “greening” their operations as not only an ethical imperative, but also as a strategy for enhancing their profitability and corporate image. The World Business Council for Sustainable Development (WBCSD) was organized by 50 business leaders in 1991 during the run up to the Earth Summit to encourage corporations around the world to modify their operations to be less damaging to the environment (Schmidheiny, 1992; Holliday et al., 2002). The membership of the WBCSD has grown to 160 major international corporations based in 30 countries and representing 20 industrial sectors, such as transportation, electric utilities, mining and minerals, forest products, and cement (see WBCSD website). The Pew Center on Global Climate Change has established the Business Environmental Leadership Council, which draws together 38 major companies, including Alcoa, Boeing, DuPont, Intel, Royal Dutch Shell, and Toyota, that recognize the threats posed by climate change and are taking steps to address it by reducing emissions or utilizing new, more efficient products, practices, and technologies (see Pew Center on Global Climate Change website). Three hundred corporations that are leaders in promoting environmental values are listed in the Dow Jones Sustainability World Index, which, in 2002, outperformed the mainstream market.

The recent debate over “what would Jesus drive?” calls attention to another encouraging and potentially powerful trend, the emergence of **conservation theology (22)**, which encourages people of faith to be responsible stewards of the life-sustaining natural environment. In 1990, Pope John Paul II issued a statement entitled “The Ecological Crisis: A Common Responsibility” that called attention to how the earth’s natural resources and environment had been plundered and to the common duty that Christians have to take steps to preserve what is left for future generations. As negotiations approached a climax on final revisions to the Kyoto Protocol, the United States Conference of Catholic Bishops issued a statement calling “for prudent and constructive action to protect God’s precious gift of the earth’s atmosphere with a sense of genuine solidarity and justice for all God’s children” (2001: 10). A year earlier, the World Council of Churches (2000) adopted a statement that recognized the atmosphere as a global

commons, noted the disproportionate share of the greenhouse gases emitted by the developed countries, and called for the continuing negotiations on the Kyoto Protocol to address issues of equity between the developed and developing countries. The Interfaith Center on Corporate Responsibility is a coalition of 275 faith-based institutional investors with a combined portfolio of an estimated \$100 billion that are committed to making investment decisions that further social values, including economic justice and stewardship of the earth, in particular reversing global climate change (see Interfaith Center on Corporate Responsibility website). In the past, environment and religious groups have kept their distance, but increasingly they are working together to address their common environmental concerns (Gardner, 2003).

**Women's groups and ecofeminism (23)** have offered distinctive perspectives on ecological issues along with energetic activism in arenas ranging from local communities to world conferences. Ecofeminism is both a philosophical perspective and a diverse movement of academics and activists based on two broad propositions. First, women tend to have an outlook on the environment that is less oriented to exploiting natural resources for wealth and power, while being more inclined toward respecting and conserving the environment, sometimes referred to as "Mother Earth." Second, women, by virtue of the societal roles that they play, especially in developed countries, such as collecting water and fuel wood, growing subsistence crops, preparing food, and bearing and nurturing children, have a generally disproportionate exposure to environmental problems such as water scarcity, deforestation, herbicides, and pollutants (Warren, 2000).

The opportunities for women to voice their concerns and to participate at all levels of policymaking have grown remarkably in recent decades. The status of women has been promoted internationally by the United Nations Decade for Women from 1975 to 1985 and the three world conferences held in conjunction with it, the adoption of the Convention on the Elimination of All Forms of Discrimination against Women in 1979, and, more recently, by the World Conference on Women in Beijing in 1995. Increasing numbers of women's NGOs have influenced the agendas and recommendations of United Nations conferences, such as the Earth Summit in 1992 and the World Conference on Population and Development in Cairo in 1994 (Kirschten, 1994).

In a world increasingly dominated by global economic forces, numerous grassroots **people's movements (24)** have sprung up among the people of local communities whose lives are directly impacted by environmentally destructive practices and policies. Some of these movements have been able to mount surprisingly effective resistance to assaults on their environments and livelihoods (Peet and Watts, 1996; Kalland and Persoon, 1998). Perhaps the best known example is the Chipko movement in India, which emerged spontaneously in 1973 as a small-scale protest by village residents against a single logging operation using Gandhian methods of satyagraha, or non-violent resistance. The movement spread rapidly to other parts of India where local people, especially women, used the tactic of "tree hugging" to save their nearby forests and to put pressure on governments to adopt policies that gave greater weight to conserving forests and protecting ecosystems. In the Mexican state of Chiapas, indigenous peoples formed the Ejército Zapatista de Liberación Nacional (Zapatista Army of National Liberation) to try to keep the region's natural resources from being appropriated by outside developers, a cause that has attracted the support of numerous international environmental and human rights NGOs. In Brazil, the killing of Chico Mendes in 1988 drew worldwide attention to his courageous efforts to halt wide-scale destruction of the Amazon basin rainforests from mining and ranching operations, which were threatening the traditional livelihoods of the

region's indigenous peoples, including rubber tappers who for many generations had been making sustainable use of the forest resources.

### Conclusion

The principal thesis of this article is that progress in addressing environmental problems advances the cause of peace. Toward this end, it identifies an array of twenty-four tools for environmental peacemaking that offer possibilities for limiting, if not averting, resource scarcities and ecological strains that may trigger violent conflict within or between nations. These tools also facilitate cooperative problem-solving activities that contribute to stable, peaceful relationships across national and societal lines involving IGOs, governments, and non-governmental groups. Several of the tools advance the cause of peace by addressing social injustices that arise from scarcities and environmentally destructive practices.

The combined potential of these tools is indeed great, and they have already had a major impact in restraining humanity's assault on the earth's natural systems and the furthering of peace. The challenges for the future are also immense, however, in a world in which population growth continues, albeit not as rapidly as in recent decades, and human progress is measured primarily in terms of economic growth and consumption in a globalizing world. It remains to be seen whether the tools highlighted in this article will be sufficient to turn the tide toward sustainable development and ecological stability, but they do offer hope that such a vision is possible if there is the commitment to use them.

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