



Environmental Sustainability: From Protecting the Environment to Preserving Ecological Systems

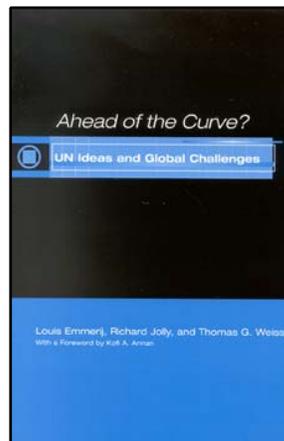
Changing ideas and thinking about the world's environment is where the UN has probably had its greatest influence. Over the six decades since the UN's founding, global awareness, thinking, concern, and global policy in relation to the environment have changed beyond recognition. As with human rights, the UN has often taken the international lead that has challenged and changed national and international priorities.

The landmarks of these changes include:

- 1962: The UN Declaration on Permanent Sovereignty over Natural Resources detailed the rights of countries to freely manage natural resources for the benefit of the population and national economic development.
- 1972: The UN Conference on the Human Environment in Stockholm pioneered the idea that issues of environment and development must be approached together, politically and operationally.
- 1982: The UN Convention of the Law of the Sea gave rise to extended resource rights for coastal states, protection of the marine environment, and an international deep-seabed regime based on the nascent principle of the common heritage of humankind. The latter principle counterbalanced rights of fishing with the *duty* to take measures of conservation.
- 1987: The Montreal Convention on Substances that Deplete the Ozone Layer is a legally binding treaty for the control of ozone depleting substances. The 2006 Montreal Protocol controls the use of ninety-six chemicals and sets forth a detailed schedule for their phase out with differing targets and deadlines for developed and developing countries.
- 1987: The report of the World Commission on Environment and Development *Our Common Future* introduced the concept of sustainable

development as ensuring that development “meets the needs of the present without compromising the ability of future generations to meet their own needs.”

- 1988: The creation of the UN Intergovernmental Panel on Climate Change (IPCC) has provided the lead for the growing international consensus on the global problems presented by climate change.
- 1992: The UN Conference on Environment and Development—known also as the Earth Summit—took stock of progress since the Stockholm conference, linked environmental protection to poverty eradication, and emphasized priorities for the least-developed and most environmentally vulnerable countries. The summit concluded by agreeing to Agenda 21 for achieving sustainable development in the twenty-first century as well as opening for signature the UN Framework Convention on Climate Change and the Convention on Biological Diversity.
- 2007: The IPCC's fourth assessment report presented a comprehensive statement of knowledge on all aspects of climate change. The report's major finding is not only that evidence for global warming and climate change is unequivocal, but that the human influence behind this change is now beyond doubt, largely the result of increases in carbon emissions.





Searching for Global Resource Management with Sustainability

In his forthcoming UNIHP volume *Development without Destruction: The UN and Global Resource Management*, Nico Schrijver has focused on the UN's role in setting the legal framework for international resource management and for responses to environmental problems of the planet. He notes that many of the UN's organizations have played a role—the General Assembly, the Economic and Social Council, the UN Environment Programme, the UN Development Programme, and the International Court of Justice, as well as specialist bodies such as the Standing Committee on Natural Resources and the IPCC. UN ideas have changed thinking and become embodied in legal frameworks that have proved increasingly effective and achieved significant impact. Examples of pioneering ideas are new concepts of global resource management, resource sovereignty, the global commons, sustainable use of natural resources, and sustainable development. In parallel, the UN played a major role in elevating population and environment problems on national agendas through its world conferences of the 1970s and 1990s.

As a leading example of successful environmental action with impact, Schrijver traces the evolution of UN-led global efforts and measures to control substances depleting the ozone layer. The first step was the Vienna Convention in 1985, which was a general commitment to take “appropriate measures.” The first of the Montreal Protocols followed in 1987. It set out legally binding commitments for a gradual phase down on global emissions, with targets that were gradually increased in coverage and scope, defining ever more fully the phase-out actions that countries were required to take. Some six revisions have followed, each tightening the commitments. The results are impressive. By 2006, 96 percent of all ozone-depleting substances (ODS) had been phased out globally and the total consumption of chlorofluorocarbons worldwide had fallen to 3.2 percent of 1986 levels. The total combined abundance of ODS is now declining, and the ozone layer shows signs of recovery. Without the Protocol it has been estimated that ozone depletion would rise to at least 50 percent in the Northern Hemisphere mid-latitudes by 2050 and

to 70 percent in the Southern Hemisphere mid-latitudes, about ten times worse than current levels. UN Secretary-General Kofi Annan described the Protocol as “perhaps the single most successful international agreement to date.”

Key to the Protocol's success has been ever more convincing scientific evidence—though the Protocol was first adopted when the evidence and science was still uncertain—detailed reporting requirements, innovative trade measures, non-compliance procedures, and differing obligations for developing and developed countries (the latter being responsible for the bulk of total emissions). As Schrijver notes, many of the UN organs have played an important role in this success.

Another area of UN influence has been management of the Earth's marine resources, involving a thorough revision of the traditional law of the sea. The Third UN Conference on the Law of the Sea (1973–82) not only gave rise to exclusive sovereign rights of coastal states over an extended continental shelf and a 200 nautical mile-Exclusive Economic Zone, but also introduced an international deep-seabed regime based on the nascent principle of “common heritage of humankind,” as opposed to awarding rights of ownership to the country or company claiming “first discovery.”

Over the years, the focus of resource management has totally changed, shifting fundamentally from national rights to a much wider range of environmental problems that have an impact far beyond national borders, including trans-boundary air pollution, the atmosphere, and climate change. Legal principles governing the activities of states have even been extended to the exploration and use of outer space and celestial bodies (including the Moon), which should be conducted in the interests of all countries and not subject to claims of national sovereignty because it is in the province of all humankind.

Environment and Development

In 1972, the UN organized the Conference on the Human Environment, the first of the global conferences of the 1970s. Maurice Strong was appointed secretary-general of the conference, which became a path-breaking event, politically and conceptually. Although there was growing



awareness of environmental problems in some industrial countries, and rising fears that scarcities of raw materials would, in the words of the first report to the Club of Rome, set “limits to growth,” the UN’s spotlight on the *global* deterioration of the natural environment represented a quantum leap forward. Nonetheless, plans for the UN conference initially met with massive criticism from several industrial countries and strong skepticism from many developing countries.

Common ground in preparation for the conference was found by shifting the emphasis from environment alone to the need for a new strategy that combined priorities for environment *and* development, nationally and internationally. The Stockholm conference declaration called for the elimination of mass poverty *and* the creation of a decent and human environment. As Ignacy Sachs, who was present, said in his UNIHP interview, “The Stockholm conference emphasized the idea that development and environment management are complementary. To those who claimed that to protect the environment it was necessary to stop growth, the conference replied that there was an alternative, namely to change the pattern of growth and the use of its benefits.” Some environmental problems would inevitably arise as a consequence of industrialization, but they could be minimized through appropriate policies. This was a major advance in thinking and political agreement and has been one of the UN’s fundamental contributions to the topic.

To carry the ideas of Stockholm forward, the conference agreed to the establishment of a new international body, the UN Environment Programme. Some fifteen years later, the UN Secretary-General established the World Commission on Environment and Development—or the Brundtland Commission—to explore a more integrated approach to this issue. Building on an earlier notion of sustainable use of natural resources, the commission’s report defined sustainable development as “development which meets the needs of the present without compromising the ability of future generations to meet their own needs.”

The 1992 Earth Summit in Rio de Janeiro, also under the chairmanship of Maurice Strong, reviewed progress and produced the Rio Declaration on Environment and Development. By this time, environmental concerns had shifted

from absolute scarcity of certain non-renewable resources—as the environmental problem had been seen in the 1970s—to the pollution or destruction of *renewable* resources, especially water and air, soil and forests. But the focus soon shifted again. As more evidence of climate change emerged, global warming became one of the most recognized and most serious environmental problems. Until the 1990s, environmental problems had been seen as how to survive in a global fishbowl. In 1997, the UN conference in Kyoto introduced the problem of what to do when the fishbowl is put into a microwave.

The 1992 Rio conference, in addition to the conventions on climate change, bio-diversity, and desertification, also led to the creation of the Global Environment Facility (GEF). The GEF’s mandate is to provide funding and technical assistance for shifting the locus of support from projects to the preservation of bio-diversity, the protection of forests, and the improvement of soils. Ten years later, in 2002, the World Summit on Sustainable Development in Johannesburg was held to take stock of the implementation of the measures agreed upon at the Earth Summit.

Climate Change

The transformation of awareness and understanding of climate change and recognition that it is to a large extent a human-made phenomenon is one of the most dramatic changes in ideas and perceptions of the last two or three decades. Though many scientists have contributed to this understanding, and a small and decreasing minority still raise doubts, the UN’s Intergovernmental Panel on Climate Change provided much of the scientific authority for these findings and given them global legitimacy and outreach. The IPCC, with more than one thousand scientific members drawn from countries around the world, has reviewed the data, analyzed its implications, made projections, and created a global consensus about the seriousness of the issues and the urgent need for action.

The average temperature increase globally during the twentieth century was close to one degree Celsius and the average rise in sea level has been more than 15 centimeters. An increase in the frequency and intensity of extreme



precipitation events, floods, and droughts accompanied these changes. If no decisive action is taken, the temperature could increase over this century by between 2 and 4 degrees Celsius. And it is now confirmed that human influences on global warming have been five times greater than those caused by solar variations.

Some examples show the severe consequences for the future, especially for the world's poorer regions, if nothing is done:

- By 2020, agricultural yields in some countries could be reduced by up to 50 percent. In subtropical and tropical regions, a temperature increase of 1.5 to 2.5 Celsius could lead to a decline in productivity of crops such as maize and wheat. Climate change is already affecting rainfall, and drought-affected areas in Sub-Saharan Africa could increase by 60 to 90 million hectares.
- In Asia, mega-deltas such as Kolkata, Dhaka, Irrawaddy, and Shanghai are at risk of coastal flooding, as are other cities in the world that are located in coastal areas.
- An important proportion of plant and animal species is at risk of extinction if increases in global annual temperatures exceed 1.5 to 2.5 degrees Celsius.
- It is estimated that by 2080 an additional 1.8 billion people could be living in a water-scarce environment. Climate change could also increase the number of persons affected by malnutrition by 600 million.

The IPCC has issued a call for action, emphasizing that it is not too late to forestall catastrophic climate change. It has elaborated specific recommendations for international cooperation and multilateralism to effectively address climate change and avert the significant negative consequences for human development today and for future generations. Action, however, will have to be faster, more comprehensive, more serious, and more effective than that which followed previous UN debates and commitments.

The Kyoto Protocol, Moving beyond Bali

The Kyoto Protocol was first adopted in 1997 and entered into force in 2005. The protocol is annexed to the international UN Framework Convention on Climate Change, and its main objective is to reduce greenhouse gases that cause climate change and strengthen sink capacity. It builds on the evidence, much from the IPCC, that climate change results from human actions, mainly the ever-increasing amount of carbon emissions.

The Kyoto Protocol was limited and heavily flawed from the very beginning, reflecting the politics of reaching some agreement rather than equity in burden sharing. Huge emitters such as the United States, China, and India are not in the pact because they do not see it as in their best interests. The objective of the protocol, namely the reduction of average global temperature, is not yet within sight. Indeed, twenty-three of the twenty-four warmest years since recordkeeping began in 1850 have occurred since 1980. Sea levels have risen by an average of 3.1 millimeters per year over the period 1993 to 2003, a rate of increase that is almost twice the historic average. The incidence of major floods, the number of wildfires, average wind speeds, and the frequency of cyclones have all risen in the past two decades. Emissions of greenhouse gases continue to rise. In the face of these facts, a global consensus has now emerged on the need to curb carbon emissions. However, there is no consensus yet on how to share the burden of such a policy among countries.

Follow-up talks about Kyoto, held in Bali late in 2007, focused on setting up a framework after 2012 when the present phase of the Kyoto Protocol comes to an end. Major elements of such a framework would include: the establishment of an agreed-upon threshold at which dangerous climate change would begin, say at 2 degrees Celsius above pre-industrial levels; an agreement to a global sustainable emissions pathway aimed at 50 percent reductions of greenhouse gas emissions (from 1990 levels) by 2050; the implementation by developed countries of targets under the current Kyoto commitment period (until 2012); and the reduction of greenhouse gas emissions by at



least 80 percent by 2050 and 30 percent by 2020. Finally, major emitters in developing countries would need to aim at an emissions trajectory that peaks in 2020, with 20 percent cuts by 2050. These cuts would start in 2020, and they would be supported through international cooperation in the areas of finance and low-carbon technology transfer.

The UN Conference on Climate Change in Bali once again put the spotlight on the limits of ideas in the face of power. After the deadline for an agreement had been reached, 187 states present (including China and the United States) unexpectedly resumed talks on the global effort to rescue the planet from climate change. This culminated, at the last minute, in the so-called Bali roadmap—a two-year negotiation process to guide the establishment of a new treaty by 2009. While countries agreed to “green” technology transfer, funding for poorer countries, and “deep cuts” in greenhouse gas emissions, no clear goals or timetables were set.

Pessimism about this outcome, however, should be tempered by the changes in scientific and public reactions that have already taken place in only a few years. The importance of actions by individuals, groups, and committees should not be underestimated. The election of Barack Obama as president of the United States is of crucial importance in this context.

Moreover, global understandings and perceptions of environmental issues have changed remarkably and rapidly over the longer run. At the 1972 Stockholm conference environmental matters were mainly concerned with questions concerning scarcity and the relationship between environment and underdevelopment. Over the next twenty years or so, the international environmental agenda has expanded to include pollution, desertification, deforestation, and sustainable development. Gradually the planetary challenges of survival and sustainability, arising from problems like climate change, have received more and more attention.

Other Continuing Environmental Challenges

Although the “new” problems of climate change and global warming now garner considerable attention, the “old” environmental problems—

some of which have direct links with the “new” problems—are still present and often are getting worse. This is the case with acid rain, air pollution, rainforest destruction, desertification, and overpopulation.

Other examples are related to consumption and life styles and their implications for such trends as the rapid expansion of car use globally. This is further stimulated by the production of inexpensive cars—India is now producing cars that sell for \$ 2,500. The implications for air pollution and carbon dioxide emissions of such looming consumption entail huge environmental costs.

In spite of declining birth rates, the world’s population will continue to increase over the coming decades. Together with rising incomes, this will create additional pressures on the global environment. Mobilizing action to tackle global warming should be combined with continuing efforts to improve national and international resource management if the challenge of sustainable development is to be politically acceptable and sensitive to human needs.

Conclusion

Global resource management, which was introduced in the UN in the 1960s, is still the broader concept within which environmental and global warming problems should be situated. It is a tribute to UN pioneers that such an idea was promoted fifty years before it was popularly accepted.

The UN has had and continues to have an important role in influencing trends in natural resource management and innovations. This was the case when the concept of resource sovereignty was introduced and for which rights and duties were twin elements. As Schrijver argues, there was not only a sovereign right to national resources but also a sovereign duty to use these resources for national economic development and the well-being of the entire population, to grant foreign investors fair treatment, and to conserve the environment. The latter element evolved into the concept of sustainable development, of which curbing climate change has become a major component.

The notion of the “common concern of humankind” underlies the conventions on



climate change, biological diversity, and anti-desertification. It failed to create all the conditions necessary to establish an international regime, yet it still conveyed the global scope of the problem at hand and took some account of the rights of future generations.

The stakes are large. Barbara Ward, in her book, *Progress for a Small Planet*, put the issues with remarkable foresight in the 1970s:

Precisely those areas where immensity and distance have seemed to reign—climates, oceans, atmosphere—are beginning to be seen as profoundly interdependent systems in which the cumulative behaviour of the inhabitants of the planet, the various activities of each seemingly separate community, can become the common destiny of all....If we can learn from the growing...risk in our present practices to determine that the next phase of development shall respect and sustain and even enhance the environment, we can look to a human future....

The only fundamentally unresolved problem...is whether the rich and fortunate are imaginative enough and the resentful and underprivileged poor patient enough to begin to establish a true foundation of better sharing, fuller cooperation, and joint planetary work (1988, 253–4, 265).

Richard Jolly and Louis Emmerij