

Globalization and the Environment

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*Globalization is usually thought of as an economic phenomenon of global movements of capital and trade in goods and services. However there are environmental dimensions of globalization that are equally important both for the future of the life support system of the planet and for their impacts on human society.

As the human population has grown and the leverage provided by technology has increased, our impacts on the environment have reached the global scale. We have released enough carbon dioxide and other greenhouse gases to have a measurable effect on global climate, while chlorofluorocarbons and other man-made gases have attacked and depleted the stratospheric ozone layer. A number of pesticides and other persistent organic pollutants are now distributed globally, and may threaten hormonal balances and the immune system in man and other animals. Some toxic chemicals used in the tropics evaporate in the heat and are transported in the air to the poles, where they condense out in the cold and accumulate in the food chain, in a global distillation process. The globalization of trade puts pressure on natural resources around the world, helping to drive the rapid depletion of tropical forests, the collapse of many ocean fisheries, and even the global impoverishment of biological diversity. We travel so much that we are becoming more vulnerable to epidemics, helped along by the global spread of antibiotic resistance. Global movements of invasive introduced species have had major biological and economic impacts on the Mediterranean, the Black Sea, the Great Lakes, grazing lands, forests, and other resources. As yet, little attention has been paid to the synergies and interactions between environmental problems, and between them and social and economic systems, that may, in fact, represent some of the biggest future problems and surprises. While it has always been possible to escape from environmental limits at a local or national scale, the planet is a closed system (except for solar energy) and there is no escape from planetary limits.

A number of recent studies have developed scenarios of possible futures in a globalizing world, some of them quite undesirable. They present the challenge of solidarity or exclusion at a planetary scale. For example, there is an increasing risk of major flows of environmental refugees. One underlying cause of the Rwandan tragedy was high population growth that overshot the carrying capacity of the limited land area. In many places, water shortage, resource depletion, climate change, or sea level rise could displace large numbers of people. Another nuclear accident like Chernobyl, or the release of biological warfare agents like anthrax, perhaps by terrorists, could contaminate large areas and make them uninhabitable. Where will all these people go? If climate change drives farmers off the land in some regions and makes Siberia cultivable, can the displaced farmers move to the newly opened lands? The movement of capital has been globalized and free trade in goods and services is the aim of governments through the World Trade Organization. Yet no one wants to address the politically-sensitive subject of the global movement of people. Why should one be able to move and not the other? From an ecological perspective, allowing the free movement of people to live and work where they wished would be a true balancing factor in the world system, working against unjust extremes of wealth and poverty. People do not usually like to leave their homes unless they have to. There would be a strong global motivation to redistribute wealth so that most people would prefer to stay at home. This issue is highly complex and controversial, but it raises fundamental ethical questions that cannot be ignored in a discussion of globalization. We may postpone thinking about it, but it will be thrust upon us by future environmental changes.

This does not mean that everything is negative about globalization and the environment. Studies do suggest that the world can be transformed into a stable and productive global society, but that this will

require fundamental changes. Space does not permit reviewing all of them here. For example, it appears technically possible to increase the efficiency of the use of energy and resources by a factor of 10 in highly-developed societies, with little reduction in living standards, thus releasing the resources necessary for the poor and the developing countries to make major advances.

Environmental globalization does not mean that the same solutions should be applied everywhere. The planetary environment is highly diverse, and human responses and adaptations to it need to be similarly diverse. One challenge in a globalizing society is to empower people and institutions everywhere to respond effectively to their local environmental situations while maintaining at the same time a global perspective on their environmental impacts. The science needed to manage the environment should no longer be the preserve of an intellectual elite, but a set of rational tools available to everyone. In many traditional societies, each family had its store of environmental knowledge related to farming, fishing, hunting and the use of available materials, built up by close observation over generations, and passed down within the family. If this traditional equivalent of science was so widespread before, it could easily be again.

Some elements of a constructive response to achieve this empowerment include:

- A nested set of environmental information systems from the global to the local levels should be developed that can provide all stakeholders with scientific information on the status and limits of natural resources as a basis for their sustainable management. Global observing systems for climate, the land and the oceans are gradually being put in place, and new technologies are steadily increasing our ability to collect environmental information. However we are falling behind in our ability to analyze and assess the information now becoming available.
- More participation should be encouraged at all levels in environmental observing, assessment and management. The principle of subsidiarity applies to environmental management. With much wider access of all people to science as a guide to human behaviour and decision-making, local people can observe their own environment, assess the consequences, and adjust their actions accordingly.
- Everyone must learn to recognize that human systems are part of natural systems and all must be viewed in an integrated and dynamic perspective. The Western intellectual tradition tends to classify things in static compartments, yet the natural world and human society are constantly changing and interacting, requiring more holistic systems thinking. This will have to include the internalization in the economic system of environmental and social dimensions that are presently treated as externalities.
- New sets of indicators are needed, beyond GNP, that can help to guide society to maximize not only economic capital, but human and environmental capital as well. Present measures of development and success are narrowly economic and miss major characteristics of society. Adopting more balanced sets of indicators including individual well-being, social progress, effective community life and governance, and even cultural, scientific and spiritual dimensions of development would help to steer us in the right direction.

Natural ecosystems like coral reef and tropical rain forests provide interesting models for human society. They demonstrate that highly rich and productive communities can survive in impoverished environments if they maximize the contributions of every component species, use materials frugally with extensive recycling and little waste, decentralize responsibility and decision-making (or their ecological equivalents) to each individual, and build high levels of interaction and symbiosis that are the natural equivalent of human solidarity.

Ultimately, at the most fundamental level, a successful response to globalization will require fundamental changes in human values, both as individuals, and as incorporated in the governmental, corporate and economic structures of society. Human values determine how people relate to each other. They are the social equivalent of the genetic code and instincts at lower biological levels. A positive mutation in the basic instructions can change the whole course of evolution.

If the productive economic institutions of society are only accountable for making a profit, then it is normal for them to do that well at the expense of everything else. This is a fundamental structural problem related to the values incorporated in our institutions; businesses are only responsible for business, and all the social and environmental problems are left to government. If we do not like the result, then we need to change the values inherent in our institutional structures and frameworks. The problem is aggravated by phenomena of rapid economic globalization, while the counterbalancing political structures have not kept pace and are losing their power over a globalizing world. Mechanisms for social services, for wealth redistribution through taxation, and for environmental regulation, do not now exist at the global level where multinational corporations and institutional investors are most active and an increasing amount of wealth creation is taking place.

One basic change to consider is in our units of account for development. At present we use money, but all those aspects of a developed society, like its laws, science, culture and values, that are not traded in the market, escape this system of valuation. An alternative to consider would be units of human potential realized (say person/years of service). A society that measures its success by its effectiveness in using and developing all the human potential within it, rather than just in the growth of economic activity, would evolve in a wholly new direction, one in which spiritual and material values would be in better balance. Such a society would be closer to the long-term sustainability demonstrated by natural ecological systems.

In closing, this seminar has stimulated some personal reflections on the project on globalization launched here. One encouraging recent trend has been the growing recognition that politics, economics and science are not enough. The spiritual or religious dimension of society, that deals with human values and motivations, cannot be neglected in addressing current problems linked to globalization, and this will be addressed in another phase of the project. Around the world there is a growing dialogue between religions, scientists and the environmental movement in an attempt to bridge our understanding of environmental problems and the changes in values, motivation and lifestyles needed to solve them. The environment and religion are two pressures for more global thinking and acting that are being drawn into partnership. For example, Bahá'u'lláh, founder of the Bahá'í Faith, already addressed globalization and the need for moderation in material civilization explicitly in the mid-nineteenth century, and other religious thinkers have also pioneered in this area. High-level meetings of all the major religions on environment and conservation have been taking place for some time. This is an area where the moral principles of all religions converge, and where constructive initiatives like this international seminar are pushing for positive action.