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CHAPTER 14

SEEING THE WORLD AS IT REALLY IS: GLOBAL STABILITY AND ENVIRONMENTAL CHANGE

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THE STATE OF THE WORLD

Over the course of the 4.5-billion-year history of this planet, including the last 500,000 years when *Homo sapiens* appeared and established itself as the dominant species, the world has been transformed in astonishing ways (Turner et al. 1990; Tolba and El-Kholy 1992; McMichael 1993; Simmons 1996). But only after the introduction of agriculture 8,000 to 10,000 years ago, and the development of increasingly sophisticated technologies, did human-driven global change and environmental impact accelerate to the point that a major proportion of the earth's biodiversity is on the cusp of an extinction event fully congruent with the five major extinction events of the geological past. And it is the only event of its kind created by the activities of a single species.

When agriculture arose, there were far fewer people in the entire world than there are in metropolitan New York today. When our ancestors built Stonehenge, the great monolithic monuments of Europe, and the great pyramids of Egypt, there were fewer people in the world than there are in New York State now. At the time of Christ, there were only 130 million or so people in the entire world, about the same number that inhabited the United States during World War II. But global numbers have since exploded to 2.5 billion in 1950 and to nearly 6 billion people now, with 80 million people being added each year. This, along with unprecedented technological change that enables more efficient and expansive exploitation of the biosphere, has created a unique situation: no time in world history has even remotely resembled our present capacity to assault the natural resources of this planet.

It is sometimes said that human societies have arrived at a good point in world history because more people are better off than they ever were in the past. The latter part of the statement is true; the former part of the statement is clearly

untrue because it fails to take into account what we call global stability. Consider several examples:

- The most telling indicator of the sheer impact we have had on the world is to point out that human beings right now, only one of 10 million or so species of eukaryotic organisms, are either using directly, wasting, or diverting more than 40 percent of the total net photosynthetic productivity on land (Vitousek et al. 1986).
- Over a billion hectares of land have been degraded because of the loss of topsoil and deformation due to erosion and abuse (Tolba and El-Kholy 1992). One result is that about 15 percent less land is available to feed a growing population. Another is that as agricultural land is taken out of production because of loss of topsoil, more and more wildlands are converted to farmland to compensate.
- Despite improvements in the livelihoods of people living in poor nations over the past several decades, the human condition in these countries is still appalling and getting worse in some instances: life expectancy in the least developed nations is 35 years less than in the most developed, more children less than 5 years old die in poor countries each year of respiratory infections and diarrhea than do all people in the world from malignant neoplasms, and in Europe and the United States adult female literacy is 97 to 99 percent, whereas in Africa it is 40 percent and Asia 60 percent (World Resources Institute 1996).
- All people aspire to a better life, yet growing inequities in wealth are likely to prevent many from attaining their goals and dreams. Half the world's people account for less than 15 percent of the world's gross domestic product, but the 15 percent wealthiest people account for over 50 percent of the world's wealth (World Resources Institute 1996). Even though economic growth in the developing world has improved dramatically, the gap between the rich and poor is widening everywhere.
- Over 80 percent of the world's forest ecosystems that existed at the dawn of agriculture have already been lost and 39 percent of what remains is under threat (World Resources Institute 1997). The vast majority of Earth's biodiversity is housed in these last remaining forest ecosystems.
- About 16 percent of the total animal protein consumed by people comes from marine ecosystems and 950 million people, largely in developing countries, depend on fish as their primary source of protein (World Resources Institute 1996). Yet the world's oceans and large marine ecosystems are being overfished and some of those ecosystems are collapsing.
- Most of the world's river systems and freshwater ecosystems have already been damned, diverted, polluted, or somehow modified by human activities, particularly by the introduction of exotic species. This has led to the widespread loss of biodiversity and ecological services.

The consequence of these actions is that we are increasingly losing life-sustaining biological diversity and we are threatening biodiversity at such a rate that perhaps

as much as 20 percent of it may disappear over the next 30 years. This amounts to 200 species being lost every day, if you take a conservative estimate of the number of plants, animals, fungi, and microorganisms existing now (Wilson 1992). By the end of the next century, three-quarters of the earth's species may be extinct or on the way to extinction.

Furthermore, we have increased the carbon dioxide in the atmosphere since the end of World War II by nearly 20 percent. We have injured the ozone layer—which was so critical for life's beginnings several billion years ago—to the point that malignant skin cancer at a latitude such as New York's has increased about 25 percent, a clear manifestation of the protective function of the ozone layer in maintaining life on Earth.

Far from everything being all right at present, and far from our having established a level of development from which we could spring to further greatness and prosperity, we are, in the words of Herman Daly (see Daly and Cobb 1989), using the world as if it were a business in the process of liquidation. In effect, we are in the position of someone who has torn a porch from the front of his house to burn for heat and says, "Isn't it nice? Let's go for the front walls next and then the side walls." The subsidized loss of biodiversity that many have written about and the enormous price in instability that we are paying give us the illusion that the world is going to get better, yet if current trends continue, it cannot. It will not.

As a species, we humans are operating globally as if our ancestral memory of unrestrained exploitation of resources actually was good, a strategy in which it was important to horde resources when they were available and to garner as many of them as we could around our persons, our families, our groups. We continue to operate this way, but in a world that does not even remotely resemble the times when that kind of behavior might have been adaptive.

THE STATE OF THE DEVELOPED AND DEVELOPING WORLDS

In a very real sense, the report of the World Commission on Environment and Development, the famous Bruntland Report, which was notable in that it was adopted by the United Nations and was the first coordinated world statement on the environment, is grossly misleading. It said, in effect, that the industrialized nations are well off—although they all want to be better off—and that by some magical alchemy, the poor nations of the world will develop until they too share in the global prosperity enjoyed in a country such as the United States.

The sustaining forces in the global ecosystem that would allow this to happen are simply not there. If we continue to use resources as we are, the only way that the world will develop to a higher state is not by pretending that the industrialized nations' standards will eventually be met by everyone else. The only way that the world will improve is by an acute realization of what the world is really like: one that requires a stabilization of population levels, a more rational and in-

telligent level of consumption everywhere, and the use of more appropriate technologies to support ourselves. Social justice is a necessary ingredient of sustainable development.

What of the developing world? The groups of people that make up the developing world have grown from two-thirds of the world population in 1950 to four-fifths at present and they will be 85 percent of the world's population by 2020. In other words, for every person living in the industrial countries in 1950 there were two people living elsewhere, but by 2020—just 70 years later and within a single human lifetime—there will be five people living elsewhere.

The 4.8 billion people who live in developing countries include 1.4 billion who are living in absolute poverty, unable to find adequate food, shelter, or clothing for themselves or their families on a day-to-day basis. There are 400 million malnourished people whose bodies are literally wasting away and whose brains cannot develop properly in their formative years of childhood. Four-fifths of the people in the developing countries live at a standard one-twentieth or one-thirtieth of an average citizen in the United States. They have access only to 15 percent of the world's economy, 15 percent of the its industrial energy, 15 percent of its iron and steel, 6 percent of its aluminum, and comparable percentages of any other ingredient that you could think of as contributing to one's standard of life.

Women who live in these countries—having to gather firewood, which is their only source of fuel for cooking, having to go out to find clean drinking water, which is rarely directly available to them, and having little opportunity to get an education or contribute to the welfare of the communities in which they live—are therefore unable to contribute effectively to the world's vision of sustainable development. By the same token, children who live under those conditions obtain marginal education and must engage in the same pastime, joining their mothers in the search for firewood, which in turn is typically burnt in poorly ventilated housing, thus making them susceptible to respiratory disease and other health problems.

What the developing countries do have that is of value is about 80 percent of the world's biodiversity. That 80 percent will be protected only if we begin to address ourselves seriously to some of the questions and relationships discussed earlier in this chapter.

THE STATE OF THE UNITED STATES

If the world's environmental problems are to be addressed effectively and sincerely, then the United States must have a more realistic and honest view of the world and a renewed sense of stewardship of the earth's natural resources, not their opportunistic exploitation. Citizens of the United States must attain a deeper understanding of their actual and potential contribution to global stability. We must ask,

What are our belief system and values toward the remainder of the world's countries, their environments, and their people?

Some basic observations are in order. The United States has about 4.5 percent of the world's population, a proportion that has remained steady for over a century. During that period, we have captured about 25 percent of the world's economic activity—in other words, a mere 4.5 percent of the world's people, represented by the United States, have for the past 125 years or so been able to support their standard of living by using about 25 percent of the world economy. At the same time, more and more acutely with each passing year, the United States has been producing about 25 to 30 percent of the world's pollution.

The fact that the citizens of the United States are an amalgam of cultures from all over the world and the fact that this country has used the lion's share of the world's resources for its sole benefit ought to make the United States the most internationally oriented country that has ever existed. But just the opposite seems to be the case. Indeed, the United States may be one of the least internationally oriented countries that has ever existed. Since the end of the nineteenth century, we have believed and acted as if this global economic hegemony were our birthright: it supports us, so never mind that it results in the persistent erosion of resources around the world that might be better used to contribute to a condition of overall global stability.

What expectations do political and economic institutions appear to have in the United States? To listen to many of today's policymakers, they expect to revisit an era similar to the 1950s, when, because of dislocation caused by World War II, the United States temporarily controlled about 40 percent of the world's economy. But what is the reality of the world today? The United States will never again control 40 percent of the world's economy, as it did in the 1950s. The world economy has a different dynamic now and cannot be expected to work as in the past, despite what politicians might promise.

In the United States, a very basic fact is forgotten, or conveniently disregarded: we are the richest nation that has ever existed on the face of the earth. We are not merely the richest nation that exists on the earth now; we are the richest that has ever existed. Our standard of living in the United States is 20 to 30 times the standard of living of most people in the world, yet we indulge ourselves by pretending that we are constantly suffering economic hardship or do not have the monetary resources to address important problems in effective ways.

Again, what is the reality? Citizens of the United States think—largely because political leaders keep promoting the view—that we are grossly overtaxed, when in fact we pay the lowest rate of taxes per capita of any industrialized country. The economy of the United States is organized in such a way as to allow an enormous amount of individual and corporate initiative, more than in any other industrialized country. Yet at this low level of taxation, we still fool ourselves into thinking we are so highly taxed that if that burden were only reduced further, the economy

would spring forward to a new higher level of productivity and prosperity. There is little reality to this expectation, and it is often forgotten that this experiment was undertaken in the 1980s, in the process running up another trillion and a half dollars worth of deficit.

Although we are the richest nation in the world and therefore have the most to gain by promoting global stability and sustainability, our national actions do not acknowledge that fact. The United States is the lowest donor per capita of foreign development assistance of any industrialized country. Other than the special cases of Israel and Egypt, generated by the Camp David accords, and Russia, we gave $6.2 billion annually in foreign development assistance at the beginning of the Clinton Administration. This amount was then cut to $4 billion, and now we find sympathy among our policymakers to cut our foreign development assistance still further. Because we have the most to lose if the world is not stable and sustainable, why do we allow politicians to hoodwink us into supposing that, with our $1.7-trillion budget and the $200- to $300-billion annual deficit, if we adjust our foreign development assistance to $4 billion, it will bring us back into register?

Why cannot we acknowledge that our fate is inextricably tied with the fate of Mexico? Or with any other country? Why did there have to be a national debate about bailing out Mexico? Whether there was a NAFTA or not, this continent is a partnership of the United States, Canada, and Mexico. These countries are so intertwined in terms of stability, whether it be ecological, financial, employment, or scientific, that it ought to have been a matter of national shame when Congress was unwilling to face the necessity of aiding Mexico, when so much here depends on it, when our futures are bound so closely together? What do we think we are—an island floating isolated in the sky, totally independent of all of these influences? Are the tens of billions of dollars in exports to Mexico and the 500,000 to 2 million people who enter the United States illegally every year negligible with respect to regional and global stability? Is it all right to pretend that we have no economic or other relationships with them at all?

We also belie our dependence on global stability by the moral and ethical choices we sometimes make in our economic activities with our global partners. For example, we blithely export substances banned in the United States, such as DDT and other chemicals, which cause untold environmental and health damage; we attempt to expand markets for items such as cigarettes, thereby creating exorbitant social costs for those countries in the future; and most of all, we have the dubious status of the largest arms exporter in the world, with sales of about $40 billion a year (compared to $4 billion in foreign assistance). Can the United States assume a stewardship role for the global environment and for global stability without a change in our ethics toward the global economy?

Most Americans do not know how the majority of people in the world live, and most do not appear to want to know. They are very content to worry about problems at home. At the same time, citizens of the United States consume resources

avidly by being, so to speak, too kind to themselves. Consider two examples. Although most would agree that true health care also includes environmental health, sustainability, and ecological stability, the United States has an inadequate health system and spends one-sixth of its gross national product on health care. A sizable portion of that is spent on health care in the last year of life. Few people question whether prolonging life by 3 months is more important than prolonging the productive life of this planet so that it could be a place where our children and grandchildren will live with something like the privileges and opportunities that are found here.

Second, in the United States gasoline is sold at a price that is one-third less than was charged for gasoline in 1945, using constant dollars. In constant dollars, gasoline in 1945 was 21 cents a gallon, but now, using the same measure, it is about 14 cents a gallon. Still, politicians and citizens alike posture as if the world were coming to an end at the thought of a 5-cent tax increase on a gallon of gasoline. This strategy will not work in the long run. If the world were a balloon filled with petroleum and if that were being used at its present rate, the entire balloon would be deflated in 600 years. Of course, the world is not like this imaginary balloon, so petroleum reserves will have a much shorter life span. A $250-billion subsidy on gasoline prices is just another way of lowering still further what are already the lowest tax rates of any industrialized country.

While we use twice as much energy per capita as many other industrialized nations use, the growth in United States population from about 135 million at the time of World War II to about 270 million at present has caused us to look abroad for sources of petroleum and to be deeply preoccupied with the Middle East, Mexico, and Venezuela. It causes us to drill around our shores, to threaten our wildlife refuges, and to turn to nuclear energy. The United States gains little, if anything, compared with Sweden, Switzerland, or Germany by using twice as much energy per capita because these countries live about as well as we do, if not better. Furthermore, because our living standards are some 30 times those of many people in developing countries, the ecological impact of the 135 million of us added since World War II is equivalent to 4 *billion* people in certain parts of the developing world.

SOLUTIONS

What are the solutions? Saving biodiversity is not an academic exercise, nor can it be seen in isolation from the social contexts that underlie the use of biodiversity or the values human societies place on the natural world. As Norman Myers pointed out so eloquently in the past and in this volume, saving biodiversity can be accomplished only by arriving at a condition of global stability (Myers 1993). If a condition of global stability cannot be achieved, biodiversity will not be saved. It does

not matter how elaborate our schemes are; it does not matter how well-thought-out they might be; it does not matter how much we understand about them. We still will not be able to save biodiversity without achieving global stability.

At the same time—and here is the tragedy and irony of the situation—if a substantial portion of biodiversity is not saved, we will not have the organisms around that will enable us to restore the earth and build sustainable communities.

We need a new way of thinking. The old ways of thinking will not do because the questions and problems are too profound. If we, in our utter fascination with our own welfare and the welfare of our communities and our nations, continue to operate under the delusion that being extremely self-serving and self-sufficient will save the world's biological diversity, then we will probably lose it.

Because the basic conditions for biological sustainability will not change, we must change. We must define a new set of values. If we are to live in peace, tranquility, and stability in the world, and if this condition is to be passed on to our children, then we need a new covenant with the world and all its peoples—a new commitment to understanding and a new commitment to action.

For the United States: Seeing the World as it Really Is

When we talk about a confrontation between the environment and economics or development, we forget that the environment is the context in which all economics must take place. It is not a simple tradeoff between a set of environmental laws and a set of economic laws. The environment is all that we have on this planet, and within that environment, all hopes, dreams, and aspirations, including our economic and financial hopes, dreams, and aspirations, must be forged.

Although economists, working mainly in Europe and the United States over the past 200 years, have invented a series of financial equivalencies and so-called laws, which are believed to govern the way the world operates, they do not, in fact, govern the way the world operates. No single economic law or principle will make this planet increase in size by 1 centimeter or will make it more resilient or more able to operate into the future. The environment is all that we have; we must understand and cherish it because it is the only thing that supports us.

The point at which the world population finally stabilizes will depend on whether the community of nations will act on the excellent recommendations of the Population Conference in Cairo in September 1994 and, as a matter of urgent priority for all of our security, supply modern contraceptives to the estimated 300 million women in the world who would like to have them but do not and address the social conditions that underlie fertility rates. If that were to happen, the world population might stabilize between 7.8 and 8.5 billion people. If that does not happen, the world population will not stabilize until it reaches perhaps 14 billion people at the middle of the next century, 20 billion people at the end of the next century, or something really unspeakable. But even those figures do not tell the full story.

For the world to stabilize at the level of 14 billion, 20 billion, or any number, we will have to be devoted to the cause of population stabilization around the world as well as to the problems associated with it. In the United States and the rest of the industrialized world, no future figure of world population will just happen by chance. That future depends on our choices and our actions.

Social Justice, Global Discrimination, and Sustainability

One of the ways in which developed countries must change is in the attention they give to social justice. Social justice is now considered by some to be an old-fashioned concept. Congress often does not seem to worry much about social justice, especially in the developing world and especially as it relates here and abroad to issues of the environment. What this form of social justice means is that all people have the opportunity, capacity, and freedom to express their humanity by caring for one another and caring for their environment. Others have pointed out that there is no possibility of caring for nature, either in an ethical sense, a spiritual sense, or a factual sense, if we do not first pause to care for one another. As Richard Leaky has noted, "Saving the environment is not possible without one square meal a day."

Anyone who professes to gain strength from religious teachings ought to be deeply troubled by the fact that the developed world draws a standard of living from the world environment that is 20 to 30 times higher than the condition that most people find themselves in, unless at the same time we accept some obligation to help to improve the world and to use our energies and institutions to enhance social justice for others.

If we want to embrace all peoples and benefit from their philosophical and cultural diversity for the betterment of the world and the development of a sustainable global society, the industrial world must explicitly discard the idea of getting as much as possible as soon as possible, regardless of how adaptive that notion might have been in the past. People everywhere must be taught to recognize that the earth is our single planetary home and must embrace human diversity and empower its potential. But people must learn that this is possible only in the context of a healthy environment.

It has already been mentioned that internationalism is not popular in the United States, although internationalism is fundamental for creating the conditions for global sustainability. If each of us does not find ways for ourselves, our children, and our fellow citizens to understand the conditions in which a great majority of the people in the world are living, we will not find the wherewithal—emotional, financial, intellectual, or any other kind—to truly contribute to a common view of the world and to the attainment of global stability. This point is critical. Building a blueprint for global sustainability based on the maintenance of biological diversity will not emerge from decisionmakers in Gland, New York, or Washington about how the world ought to make choices about conservation. Ultimately it must de-

rive from social empowerment set within a broad consensus and value system of societies that recognizes the mutual interdependence of the global community (Raven 1990).

Science as a Form and Mechanism of Empowerment

Six percent of the world's scientists and engineers live in the developing world. In other words, 80 percent of the people in the world, with 80 percent of its biodiversity, have to make do with just 6 percent of the world's scientists. One of the worthiest aims of U.S. international assistance programs is to provide training and opportunities for people in developing countries. INBio in Costa Rica and the analogous bodies in Mexico, Taiwan, and elsewhere are organizations in which economic use, proper management, education, conservation, and academic study come together in such a way that people will pursue the preservation of biodiversity because they understand it to be in their own self-interest. This is another way of saying they are pursuing regional stability.

Going a step further, not only do just 6 percent of the world's scientists and engineers live in developing countries, but most of that small number are concentrated in a few countries such as China, India, Mexico, Brazil, Colombia, and Venezuela. Immediately one can see that for over half the countries in the world, there is virtually no scientific or technical expertise.

Imagine what it might mean to live in a country without any scientific or technical expertise and then imagine one had to decide whether to agree to an international convention or to try to get together with other nations to achieve common objectives. There would be no way to assess those objectives, based on a critical evaluation. Nothing could be more in the interests of the United States and other industrial countries than to build this kind of self-confident, informed, and empowered desire for sustainability in every country of the world. The industrialized world cannot afford isolationist thinking that involves reducing foreign development assistance. On the contrary, these countries should be expanding programs that serve the aims of people everywhere and empower them to become partners in building sustainable and stable societies.

A major part of this effort is fostering institutions dedicated to expanding knowledge of biodiversity: museums, botanical gardens, research stations, and universities (Cracraft 1995). One cannot save intelligently or efficiently what one does not know. All knowledge about biodiversity that can be shared globally—whether through science, poetry, art, or something else—will be essential if we are to preserve biodiversity for its productivity, its restoration, its collective economic use, and its beauty.

One of the most cynical points of view commonly driving policy decisions in the United States is the belief we cannot do anything abroad until we settle matters domestically. Yet this desire itself is misguided, not only because all societies are intricately linked economically, culturally, and ethically to one another, but

also because of its irony: to any observer it would appear as if we in the United States have little political will even to deal with our own domestic environmental agenda effectively.

One of the most telling examples of this is polls taken at election time that survey citizens' priorities for our domestic policy agenda. The environment regularly appears far down the list. Instead, Americans tell their candidates something quite different: we want more money (make the economy grow), we want lower taxes, or we want crime eliminated.

There are many dedicated and intelligent people at all levels of government who would love to hear that preserving the environment is a high priority. But if all we can tell them is that we want more economic expansion, lower taxes, more jails, and better military preparedness, rather than a better environment, better education, more economic and social justice, no poverty, or the promotion of human development around the world, why is the general indifference of politicians toward these goals so surprising or disappointing? Never in U.S. history has the president or any politician been free to devote large amounts of money and effort to environmentalism or any other thing that he or she might have wanted to devote money and effort to, unless it was backed up strongly and politically by the people.

The simple fact is that we are not going to have long-term positive results on the environment by demonizing anyone; instead, it will happen only by saying what we want, and saying it often, to those who represent us. Citizens must tell their elected representatives that the long-term health of our country and of the world, and of those who live in it, depends not on the voracious consumption of everything we can imagine, but on forging a stable relationship with the earth.

Human beings have always been able to change for the better, given the right kinds of values, and they can change very rapidly. If we truly control our own destiny, then we cannot continue business as usual. We not only can change, we must change. The world remains finite; that fact does not disappear, even in the face of our individual preoccupations and agendas. Because the earth is finite, we must forge a peaceful relationship with it. To succeed in this goal, each individual must make a personal commitment and not excuses. Everyone is confused, at some level, about what ought to be done in the face of the current environmental crisis. However, it is time to stop using confusion as an excuse for inaction and begin devoting ourselves to building a world in which future generations can be healthy and prosperous.

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