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The Fallacy of Global Sustainable Development

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SUMMARY The 1992 Earth Summit in Rio de Janeiro made global “sustainable development” an international rallying cry. But after five years of international conventions, intensified scientific research, and large infusions of money, little progress has been made. Indeed, the world’s constantly growing population and insatiable appetite for food, energy, and goods continue to stress and degrade the global environment. The result is loss of agricultural land, loss of biodiversity, and growing pollution of the global atmosphere. With prospects increasingly grim, how can we best respond to a deteriorating environment? First, by acknowledging that we don’t have the knowledge or the political will to prevent many of the threats we face. Second, by diversifying our responses to the environmental crisis: relying much less on international treaties, whose “central planning” approach to the global environment is rarely effective, and focusing our resources on both nongovernmental and more localized efforts. Most importantly, we must develop our capacities to adapt to environmental changes that may be inevitable.

Thirty years ago, protecting the environment was an issue only for scientists and nature lovers. Today, national and world leaders are among the many who declare themselves friends of the environment. Their rallying cry is “sustainable development,” the concept that individuals, corporations, and nations can synchronize their economic activities with the environment to ensure that future generations will enjoy the same natural amenities (clean air and water, abundant forests and fertile farmlands, and the glories of nature) as our own generation. The goal is certainly a desirable one. But environmental and political realities make its achievement unlikely.

Supporters of the sustainable development credo range from grassroots environmental activists to scientists to international funding agencies to political leaders. Some sincerely believe in the possibility of returning to a less industrialized existence in which humans live in (frugal) harmony with nature. Others have faith that new nonpolluting technology will meet increasing human needs while still protecting the environment. Some have seen successful efforts to protect the environment in specific locales and generalize this to Earth as a whole. At least a few are profiting from the government and private money flowing into activities claimed to promote sustainable development. And some elites use the term to generate an ideological smoke screen to conceal their self-serving actions.

So pervasive has talk of “sustainable development” become that, with the decline of Marxism, it can be argued that sustainable development has become the dominant myth¹ of our time: a vision of the future that is used to mobilize public opinion to support certain courses of action and to ignore others. Its efficacy as a motivational tool is unrelated to any probability of achieving it. Indeed, it is largely immune to rational analysis, and its adherents are resentful of attempts to hold it up to the light.²

But regardless of the sincerity of its advocates, the promise of sustainable development is false: The world’s constantly growing population and our insatiable appetite for food, energy, and goods continue to stress and degrade the global environment—a state of affairs that has been little affected by recent international efforts at forging sustainable development agreements. Ministers of environment from

Asian and Pacific countries meeting in Bangkok in late 1995 concluded that no progress had been made in meeting the goals set forth in Agenda 21, the action plan adopted at the United Nations Conference on Sustainable Development (known popularly as the “Earth Summit”) in Rio de Janeiro in 1992.³ And preliminary evaluations in preparation for the June 1997 five-year anniversary of Agenda 21 are similarly discouraging.

The Birth of Sustainable Development

The concept of sustainable development entered into popular usage only in 1987, when the World Commission on Environment and Development, chaired by Gro Harlem Brundtland, defined sustainable development as: “Development that meets the needs of the present without compromising the ability of future generations to meet their own needs. . . . At a minimum, sustainable development must not endanger the natural systems that support life on Earth: the atmosphere, the water, the soils, and the living beings.”

Five years later, the goal of sustainable development was adopted by virtually all of the nations of the world at the Earth Summit. The conference produced two international treaties: the Framework Convention on Climate Change and the Convention on Biodiversity Conservation. These have since been ratified by more than 140 countries, including virtually every major developing and developed nation, and have the status of international law. (The U.S. Congress has yet to ratify the Convention on Biodiversity Conservation, however, and mechanisms for enforcement of both of the protocols remain rudimentary.)

The rapid acceptance of the idea of sustainable development is remarkable. Just 15 years ago the issue of human relations with the environment was conceived in either-or terms as “environment versus development”—it was not possible to have both. In developed countries this conception led to frequent confrontations between environmentalists on the one side and business interests (and often labor unions) on the other. Internationally, it fed deep suspicions on the part of developing countries that the West’s environmental concerns were merely a ploy to

Sustainable development has become the dominant myth of our time

Local improvements have been made at the expense of larger environments

keep them from growing. Although many of these conflicts still simmer, the issue is now more usually posed as that of “environment plus development.” Thus, under the mantle of sustainable development, government and business interests claim to be as concerned about the welfare of the environment as are environmental activists.

The most tangible result of the fervor for sustainable development is money: funding for climate change and other research, money for international environmental funds such as the World Bank-run Global Environment Facility, and loans and grants from the West to developing nations. (But it is not nearly as much money as the developing countries feel they are entitled to and much less than the developed countries had promised at Rio.) A vast apparatus in the United Nations now supports the sustainable development effort. In April 1996, the then U.S. secretary of state, Warren Christopher, declared that the environment had become *the* major concern of U.S. foreign policy.

In less than two decades a major transformation in ideology, in language, and in the presentation of ideas about environment has occurred at the official level. In the process, a subtle shift in usage has also occurred. Where Brundtland and her colleagues presented sustainable development as a goal that we should strive to reach in the future, it is increasingly spoken of as within our grasp. But this progress has occurred at the rhetorical level. What is actually happening to the environment?

Environmental Realities

The promise of sustainable development—that we can exploit the environment without causing lasting damage—is irresistible. But the reality is very different, and it begins with some hard truths.

In much of the world the environment is already in very bad condition. This is the case from the standpoint of nature, but more importantly, it is the case from the standpoint of the people who have to live in that environment. For example, air pollution both in cities and inside houses in the countryside shortens the lives of millions of Asians.⁴ Respiratory disease, often induced by smoke and other pollut-

ants, is the major cause of death of young children. In poorer rural areas, as many as half of all children die before the age of five from intestinal diseases caused by drinking polluted water. And this situation exists even after a decade-long (1980-90), UN-sponsored, effort to improve access to clean water.⁵

The condition of the environment is getting worse, not better. Though the environment is getting worse in most places, this truth is obscured by the fact that exceptions exist. Japan has greatly reduced local air pollution and has cleaned up its rivers. The Singapore environment is dramatically better than it was, thanks in part to a vigorous tree-planting campaign. But in many cases local successes are achieved not by solving environmental problems, but by exporting them. Today, Japan is one of the world’s most heavily forested countries, the result of massive reforestation efforts and very strict enforcement of conservation laws. At the same time, however, rainforests in Southeast Asia are felled to meet the huge demand of the Japanese market for wood. In its effort to reduce industrial pollution, Japanese industry uses raw materials and energy with great efficiency, thus minimizing pollution per unit of product. But Japan has also moved its most polluting industries out of Japan to other countries: first to Taiwan, then to Thailand; now Taiwan and Thailand are shifting their dirty industries to Vietnam. The environment has not improved overall; rather, local improvements have been made at the expense of the larger environment.

Key Environmental Problems

Environmental degradation is getting worse faster than ever—and on a very large scale. Though problems abound, in the hierarchy of destruction there are some clear standouts.

Loss of agricultural lands. The single most dangerous environmental problem, and the one that receives the least attention from world leaders, is the degradation of agricultural lands. More than a quarter of Asian farmland is considered moderately to severely degraded, the victim of overcultivation, soil erosion, salinization of irrigated lands, and desertifi-

cation. Degradation and outright loss of agricultural land combined with growing populations have caused the global average of the area of grain harvested per person to shrink to 0.12 hectares, down from 0.16 hectares in 1981.⁶

Contrary to the common belief that we have solved food supply problems (or that they are only a problem of poor distribution), the future of agriculture is extremely problematic. It will be difficult to meet world food supply needs, even 20 years from now. Though technological breakthroughs could occur, none are on the horizon. And as the history of the Green Revolution has demonstrated, high-tech agriculture often has high environmental costs.

Loss of biodiversity. The term “biodiversity” refers to the varieties of different plants and animals in the world. Scientists have so far identified 1.7 million species. How many species exist isn’t known, but the best guess is 14 million. Between 1 percent and 11 percent of species are being lost every 10 years. The principal cause is the destruction of habitats: the cutting of forests, the expansion of cities, the pollution of water. Another important cause is over-exploitation. For example, as a result of severe over-fishing, the populations of desirable ocean food fish are declining everywhere. Some, such as the North Atlantic cod, whose supply once seemed inexhaustible, have probably collapsed beyond the point of recovery. If overfishing is not quickly reduced, most ocean fisheries will suffer declining yields within the next 10 to 15 years. The implications of this for food supply, particularly for poorer people in Asia who depend on fish for cheap protein, are very serious.

Pollution of the global atmosphere. Though global air pollution is one of the gravest threats we face, oddly enough the best news on the global environment has to do with the atmosphere: Faced with incontrovertible evidence that the ozone layer was thinning and that public health was threatened, most of the world’s countries signed the Montreal Protocol in 1987 to protect the ozone layer. The signatory countries agreed to reduce and then eliminate the production of chloroflourocarbons, or CFCs, the principal cause of ozone depletion. (These are the

gases used in refrigerators, air conditioners, and formerly in spray paint.) The developing countries received a 10-year grace period, but the developed countries ceased production virtually overnight. As a result, the ozone layer has started to regenerate, though it will be 2100 before it is fully restored. This is a major, successful case of international regulation of the environment.

That was the good news. The rest of the news on the global atmosphere is bad, particularly with regard to greenhouse gases believed to cause global warming. Of these, carbon dioxide, a byproduct of burning fossil fuels, is the most important. Under the Framework Convention on Climate Change, countries made a commitment to reduce emissions of carbon dioxide to levels that would not significantly damage the climate system—but these levels were not numerically defined. Countries subsequently agreed to stabilize emissions at the 1990 level. Even that target has been impossible to meet. CO₂ emissions are now expected to increase by 30 percent to 40 percent by the year 2010. The United States is the biggest emitter, at 4.9 billion metric tons per year. But much of the expected increase in emissions will occur in Asia. China, the second biggest emitter of CO₂ in the world, releases 2.7 billion metric tons of CO₂ each year and is expected to match the U.S. level within 25 years.⁷

No environmental issue has provoked more scientific debate than that of greenhouse gases and global warming. Though scientists agree that the amount of CO₂ in the atmosphere is increasing, they disagree about the impact of the increase. According to theoretical models, increased amounts of CO₂ should increase temperatures from 1.5 degrees to 4.0 degrees Celsius. Sea levels are projected to rise between 6 inches and 36 inches.⁸ But at least one recent study found that temperatures in the lower atmosphere have actually been decreasing over the past 20 years. Though there is no question that greenhouse gases are affecting the global climate system, we cannot confidently predict the result.

A key problem with trying to control emissions of carbon dioxide is that CO₂ is so unlike

Asia will generate much of the expected increase in greenhouse gas emissions

Population in Asia will increase more than 40% by 2025

CFCs. CFCs were produced in a small number of large plants, a good substitute was available, and there was no question that they were damaging the ozone layer and thereby affecting public health. Carbon dioxide, by contrast, is produced in billions of places—some we're only just becoming aware of. For example, a study of farm villages estimates that as much as 5 percent of all greenhouse gases come from people burning sticks, charcoal, and other fuels in their cook stoves.⁹ The diffuse sources of CO₂, our incomplete understanding of its effect on the atmosphere, and the central role of fossil fuels in the world's economies make responding to the CO₂ threat tremendously difficult.

Most importantly, the leading industrial country in the world, the United States, has not shown the political will to act decisively on this issue. Indeed, despite the fact that U.S. taxes on gasoline are the lowest of any industrialized country, the U.S. Congress last year reduced them further, which will increase both consumption and emissions. Although the Clinton Administration recently offered to agree to a treaty by which the United States would reduce CO₂ emissions 15 percent to 20 percent in the next 10 years, leaders in industry and government are arguing that the economic costs of reducing CO₂ are simply too high. Given the current economic belt-tightening in America, it is unrealistic to expect that politicians will legislate, or that people will tolerate, any significant expenditures to lower rates of CO₂ emissions.

The Underlying Causes of Destruction

Degradation of agricultural land, loss of biodiversity, and pollution of the global atmosphere have a variety of causes. But ultimately, they, like all environmental deterioration, are the result of two interacting phenomena. The first is population growth. The second is economic growth and the resulting increased consumption of food, energy, and other goods and services.

More people all the time. The success of some Asian countries, notably China, Thailand, and

Indonesia, in lowering their population growth rates has led many to assume that the problem of population growth is solved. While it is true that the time it takes for the world's population to double has been extended from 15 or 20 years to nearly 50 years, this is no long-term solution.¹⁰

Asia is now home to 3.5 billion people. By 2025, it is projected to have 5 billion people—a more than 40 percent increase.¹¹ The increase represents almost as many people as lived in the entire world in 1950. But population growth is not just a problem of the developing world. The U.S. growth rate is .6 percent per year, not including in-migration.¹² That doesn't sound like very much, but it means 1.6 million additional Americans every year. China's growth rate is down to 1.1 percent, but that means 13 million more Chinese every year. In the developing country of Laos, the population growth rate is much higher—2.9 percent per year. But because Laos is a small country that only adds an additional 145,000 people per year—significant for Laos but not especially so for the world. And because Laos is very poor, each additional Lao generates much less pollution than each additional American or Chinese.

Exploding consumption. Population growth may account for as much as 50 percent of the environmental degradation in Western countries (the only place the link has been studied). When population growth is linked to rapid economic growth—which in Asia has been very high, with China running at 9 percent a year, Thailand at 8.8 percent, and even India at 5 percent—the result is much increased consumption of energy and resources.¹³ As people become wealthier, diets shift from vegetable to animal products. Renewable sources of energy such as wood and manure are replaced by fossil fuels. In the countryside, newly affluent farmers construct larger houses, consuming large quantities of timber and other resources and taking scarce farm land out of production. People also tend to move from rural to urban settings where individual consumption of resources and generation of pollutants tend to be higher. Asia is now the most rapidly urbanizing part of the world. All of these shifts place greater stress on the environment.

Conflicts over resources will increase

The Real Future

Conflicts over environmental issues will increase. Sometimes these conflicts will be between countries. Japan, for example, is upset about sulfur dioxide pollution caused by factories in China and Korea. A conflict between Bangladesh and India over the share of water in the Ganges that Bangladesh is entitled to has only recently been resolved (at least in the short-term). Conflicts over resources will also occur within a single country. In China, farmers whose depleted lands no longer support them are leaving home and following millions of other migrants into the already over-crowded cities. There, they both contribute to and suffer from urban pollution. Wherever they go, they compete with others for food, jobs, housing, and other scarce resources. Some even join the stream of migrants into the developed countries, and may be harbingers of much larger waves of “environmental refugees.”

As things deteriorate, countries and individuals who have wealth and power will find ways to protect themselves. Those who don't have the money and the power will live worse and worse lives. But they will survive and continue to compete for scarcer and scarcer resources.

This vision of the future may be unacceptably grim to some, but others would simply call it realistic. Our challenge is to confront it honestly and in a way that best prepares us to respond.

If Not Sustainable Development, Then What?

Predicting and managing global environmental change is likely to be even less successful than was central planning of the economy of the former Soviet Union, and for much the same reason. An economic system, even a relatively primitive one like that of the USSR, is so complex and dynamic that planners can never have sufficient information to accurately anticipate its behavior. The global ecosystem is orders of magnitude more complex than even the simplest economic system, and involves multiple interactions among almost countless components, many of which haven't yet been identified, let alone analyzed. The continuing controversies about the impacts of greenhouse gases on climate change illus-

trate the problems that such uncertainties pose for policymaking. By the time scientists resolve this issue it will be too late to implement measures to solve the problem. But to act before we have adequate understanding can result in immensely expensive mistakes that produce no results or even the wrong results.

Adaptive development. In the midst of a global environmental crisis, the continued quality of human life depends on the adequacy of our response. But if the promise of sustainable development is false, what is the alternative? The alternative is to stop wasting so many resources on major international efforts to stop change in the global environment. Instead, we should devote these resources to improving our capability to cope with inevitable but largely unpredictable changes. This approach might be called “adaptive development.”

Adaptive development starts from the assumption that change, usually unanticipated, is an inherent aspect of human relations with the environment. Environmental change has recurred throughout history. We have survived by changing our behavior to meet new conditions, not by trying to keep the environment stable. Many archaeologists argue, for example, that the Agricultural Revolution occurred not because people saw farming as superior to hunting and gathering but because growing populations had so depleted wild resources that survival depended on adopting a less desirable way of life.¹⁴

The failure of central planning. Successful adaptation is rarely, if ever, planned from the top. It is unlikely to be the product of an interagency committee or an international conference. Instead, it will evolve out of a multitude of experiments, most of which fail but a few of which offer new pathways to the future. Our goal should be to create the conditions which facilitate such experimentation. To do so we must take seriously some of the buzzwords of current development rhetoric—diversity, local initiative, empowerment of stakeholders, human resource development.

Adaptive development would rely less on government-to-government agreements—central planning—and more on a diversity of local initiatives by

a variety of players. The recognition by the international development assistance agencies over the past decade of the critical role played by nongovernmental organizations (NGOs) in the economic development process foreshadows this strategy.¹⁵ In many situations (e.g., urban slums in Bangkok or Manila, deforested rural areas in Thailand or Nepal) NGOs more effectively mobilize local people to solve environmental problems than do the officially responsible government agencies. Spurred on by the efforts of NGO organizers, community-based resource management has achieved considerable success in stemming environmental degradation, at least at a local level. This has been especially the case in efforts to halt or reverse loss of forests in Indonesia, the Philippines, and Thailand.¹⁶

But NGOs are no panacea; indeed the key point about adaptive development is that there is no magic bullet. Thus, the private sector can also play an important role in promoting new mechanisms for protecting the environment. One that offers considerable promise is called ISO 14000, a series of environmental management standards being developed under the auspices of the International Organization for Standardization in Geneva. Under ISO, standards for doing business and standards for product quality have already been developed and voluntarily adopted by companies around the world who find that the “leveled playing field” facilitates trade. This type of mechanism—where there is a clear and positive stake in participating—holds more promise for change than the traditional top-down political approaches we have seen.

To argue in favor of diversity and local initiative is not to let national governments and the international community off the hook. Nor is it to suggest that fewer resources be expended to meet the environmental challenge. We probably need to spend more rather than less if we are to increase our adaptive capabilities. Governments, international funders, the private sector, and community organizations will all have key roles to play. But we also need to invest resources more wisely, targeting them in ways that promote the ability of individuals and communities to creatively respond to change.

Finally, we must recognize that the best solution to an environmental problem may not always be a

direct assault on that problem. For example, over the past three decades the Vietnamese government has expended great efforts to reforest barren hills. But with lands under communal control, no one felt responsible for the forests and few trees actually survived. Starting in 1989, successful greening was achieved not by throwing more money at reforestation projects but by changes in the system in land tenure. Given a direct stake in the outcome of tree planting, farmers were quick to adopt the best available technologies for reforesting lands.¹⁷

But Vietnamese farmers’ high literacy levels and ability to use technological innovations are not typical of the world’s population, particularly the masses of rural poor, and similar programs of resource management might enjoy much less success. One of the best responses to global environmental change is to invest in education, particularly that of poor rural women.¹⁸ There is strong evidence that raising female education levels leads to reduced birthrates, and hence lessens population pressure on the environment. Education may also lead women, who in many rural societies are responsible for critical decisions about management of resources, especially farm land, to adopt better land-use methods. A dollar spent on female literacy in India is likely to pay far higher environmental dividends than the same dollar spent on efforts to directly reduce CO₂ emissions in the United States.

An Unsustainable Situation

Faced with population growth of 40 percent in 30 years and a quadrupling of consumption—along with the increasing momentum of biodiversity loss, damage to the global atmosphere, and degradation of farmlands—it is clear that global development cannot be “sustainable,” cannot avoid, in the words of the Brundtland report, “compromising the ability of future generations to meet their needs.”

Talking about sustainable development as if it were within our grasp raises unrealistic hopes and keeps governments and people from doing what they can to prepare for the future. It is better to ask “How can we change *any* of this?”—because there are areas that can be improved—than to say “We have sustainable development, everything is under

We will have to spend more, not less, if we are to increase our ability to adapt

Educating poor, rural women may be our best investment in the environment

control." The real job ahead is to slow environmental degradation where we can and to improve our capabilities to adapt to the changes that we can't prevent.

NOTES

¹ Georges Sorel. 1941. *Essays in Socialism & Philosophy, Vol. I*, ed. and tr. by John L. Stanley. Transaction Pubs: 22.

² Richard Carpenter. 1995. "Limitations in Measuring Sustainability." Chapter 27 in Munasinge, M. and W. Shearer, eds. *Defining and Measuring Sustainability: the Biogeophysical Foundations*. The United Nations University and The World Bank, Washington. Efforts to measure the sustainability of ecological systems have not been very successful. A recent review of dozens of studies found none that had convincingly demonstrated that any specific ecosystem, even relatively simple managed systems, was in fact sustainable.

³ *Asia-Pacific Environment*, Vol. 1, no. 4. 1995. Economic and Social Commission for Asia and the Pacific [United Nations].

⁴ Kirk R. Smith. 1993. "Fuel Combustion, Air Pollution Exposure, and Health: The Situation in Developing Countries," *Annual Review of Energy and Environment* 18: 529-566.

⁵ P. Najlis and A. Edwards. 1991. "The International Drinking Water Supply and Sanitation Decade in retrospect and implications for the future." *Natural Resources Forum* 1(2): 110-117.

⁶ Lester R. Brown et al. 1997. *State of the World 1997: A Worldwatch Institute Report on Progress Toward a Sustainable Society*. New York/London: W.W. Norton & Company.

⁷ World Resources Institute. *World Resources, 1996-97*. Oxford: Oxford University Press. Emission figures in this paragraph.

⁸ Ibid. Temperature and sea-level rise figures in this paragraph.

⁹ Kirk R. Smith. 1994. "Health, energy, and greenhouse-gas impacts of biomass combustion in household stoves." *Energy for Sustainable Development* 1(4):23-29.

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¹² Population Reference Bureau. *Op. cit.*

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¹⁴ Marshall Sahlins. 1972. "The Original Affluent Society," *Stone Age Economics*. Chicago: Aldine Atherton, pp. 1-39.

¹⁵ Yok-shiu F. Lee. September 1995. "Privatization of Urban Environmental Infrastructure and Services in Asia." East-West Center Working Paper, Environment Series no. 46. Honolulu: East-West Center.

¹⁶ Jefferson Fox, ed. 1993. *Legal Frameworks for Forest Management in Asia: Case Studies of Community/State Relations*. Occasional Papers of the Program on Environment, no. 16. Honolulu: East-West Center.

¹⁷ Le Trong Cuc et al. 1996. *Red Books, Green Hills*. Honolulu: East-West Center.

¹⁸ Kirk R. Smith. 1994. *The Most Important Chart in the World*. United Nations University Lectures no. 6. Tokyo: United Nations University.

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