

Development for a Sustainable Future

The session was chaired by J. Gustave Speth, president of the World Resources Institute. Panelists included Russell Mittermeier, president of Conservation International; Al Binger of the Rockefeller Foundation; Jared Diamond, professor of physiology at UCLA Medical School; and Alvaro Umaña, former Minister of Natural Resources, Energy, and Mines, Costa Rica.

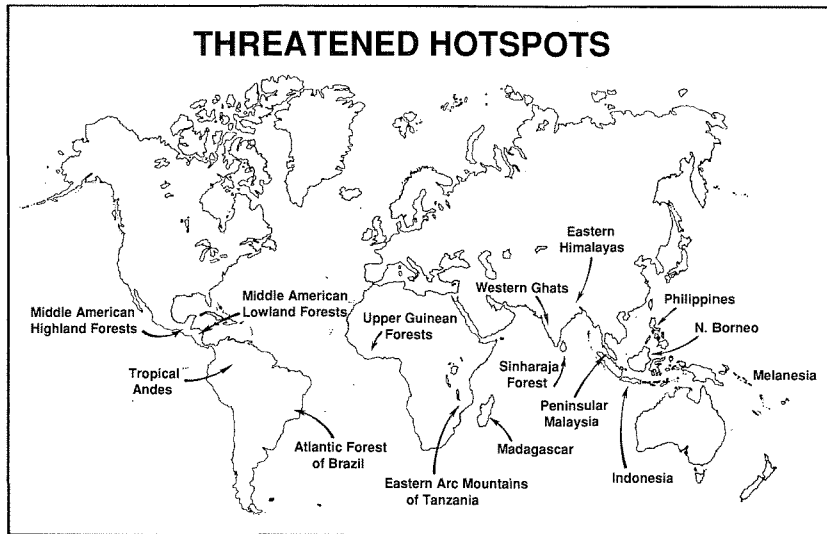
In the main, the panel agreed with Gustave Speth's opening summation: "The battle for the planet will be won or lost in the developing world. Sustainable development is going to require a much stronger commitment to equity and social justice than we now are able to muster. A sustainable society requires a social transition to a more equitable sharing of environmental and economic benefits, both within countries and among countries. The wealthy consume inordinate quantities of the world's natural resources, while the poor have little choice but to overtax the resource base." Jared Diamond dissented: "'Sustainable development' is an oxymoron, like 'full-length bikini.' My own vision of a sustainable world is one in which the notion of 'sustainable development' is recognized to be a fiction, and in which the human population and its impact on the environment are no longer increasing."

Russell Mittermeier spoke of "ecosecurity" as the complex relationship between geopolitical stability, environment, and development. "With the end of the Cold War, I hope we will shift our attention to the temperate-tropical dilemma. Very soon more than 80 percent of the world's population and 18 of the 21 largest cities will be found in the tropics. The most environmentally degraded countries in the world—places like Haiti, El Salvador, and Ethiopia—are often the most unstable." Remarked Al Binger, "In 1962, Haiti had 65 percent forest cover. Today you need a good statistician and a *very* good economist to come up with even 2 percent, because you have to manipulate the numbers so immensely. Haiti's ability to develop from its natural resource

base is gone forever."

Several panelists called for new money dedicated to sustainable development, accompanied by a reordering of spending priorities for existing aid. Education came high on the list. Binger noted that the developing countries have 75 percent of the world's population and around 15 percent of the scientists and engineers, and observed, "I find it ironic that the generation given the responsibility of solving problems that our generation and many before have created, is receiving substantially less education than most previous generations." Providing environmentally sustainable jobs for burgeoning populations, raising women's status, reforming land tenure, strengthening non-governmental organizations, nurturing emerging democracies, promoting demilitarization, and stemming corruption all made the wish list. Several speakers noted that hundreds of billions of dollars have been spent to little avail. Binger faulted the development agencies. "The World Bank in particular invests in quantity instead of quality. If a loan officer comes to my country and identifies two portfolios of energy aid, one for 500 million dollars for two years with an internal rate of return of 20 percent, and another for 200 million with a return of 80 percent, he'd be penalized for proposing the latter because he's supposed to be moving money. But everybody keeps telling me that there's no money, so how can the system reward moving money when there's no money to be moved? These institutions were created to close the gap between the haves and the have-nots. I would figure that the have-nots would be in charge, because they're

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These 15 tropical areas cover just 0.64 percent of Earth's land area, yet are thought to contain 30 to 40 percent of the world's biological diversity. Without dramatic changes in mankind's behavior, 90 percent of these habitats—and the species within them—could be destroyed by the year 2000. (Modified from Myers, 1988.)

supposed to benefit. Instead, the haves run things. How do they know what the have-nots really need?"

Mittermeier provided a scorecard of international aid's successes and failures since World War II, then suggested that there are three areas requiring fundamental change. First: "Development has economic growth as one of its inherent assumptions. But planet Earth is a closed system with finite resources. We need to redefine development as enhanced quality of life instead." Alvaro Umaña added, "It is only after people have reached a certain basic standard of living that population tends to stabilize." Second: "Development has not provided economic pluralism—the distribution of economic and other benefits to all sectors of society. Most of the benefits accrue to the bureaucracies and technocracies that handle the loans, and relatively little actually reaches the poor." Third: "Development has not taken environmental issues into account. We act as if resolving the health, literacy, and other developmental issues would remove us from environmental constraints." Aid generally consists of technology or short-term donations that don't take into account local knowledge, which is usually much more appropriate to the ecosystems in which the poor live, Mittermeier averred. Loss of traditional culture and dependence on imported technology often follows. Many biodiversity problems result from inappropriate energy technology such as burning forests for charcoal, or the huge hydroelectric power schemes in the Amazon, as well as from the timber cutting, cattle ranching, and slash-and-burn agriculture usually invoked.

Environmental considerations have to become the foundation for all future development programs.

Mittermeier singled out conserving biological diversity as the key to sustainable development. "This is our biological capital in the global bank, and though we almost invariably take it for granted, it is absolutely critical to our own survival. Earth is still the only place in the universe where we know with certainty that life exists." Added Binger, "If biodiversity is our Fort Knox, I would draw the comparison that the soldiers guarding the real Fort Knox are well fed and well educated. The people guarding our biodiversity are usually barefooted, poverty-stricken, and their children seldom go to school." Diamond noted that the extinction rate is worst in the tropics, especially for insects and plants, up to 90 percent of which have yet to be described and named and whose extinction would thus pass unnoticed.

"I estimate that about half of the world's species will be extinct or doomed by the time my sons reach my present age. Even if all humans on Earth dropped dead tomorrow, current high extinction rates would persist for centuries" as the last survivors die off, and other species dependent on them vanish in turn. "Species are connected together like dominoes," Diamond continued. "Exterminating 50 percent of the world's species is like removing 50 percent of the parts of an airplane and then trying to fly it, with the difference that we know which parts of an airplane are essential."

Mittermeier recommended a very strong emphasis on setting priorities, focusing today's limited resources on the "hot spots" where only three to five years remain before an ecosystem vanishes. Umaña added that soil, energy, and nutrient-cycling management—biomass management—are going to become critical. "The surface of the earth is going to look a lot different in 50 to 100 years, and we will have to learn to revegetate the planet, and to manage that surface, in a very different way than we do today." Both agreed on the need for protecting core areas of biodiversity. Less than five percent of the globe's land surface is protected today. An integrated worldwide system of protected areas will have to be developed in the near term, followed by restoration of the degraded land surrounding them in the long term. This, of course, means aid designed to make self-sufficient those countries within whose territories these protected areas lie, so that they no longer have to draw down their biological capital to survive.

Umaña added another dimension. "We must recognize the rights of indigenous peoples wherever nation-states took their land from them—all



The tropics' economic salvation may be in its plant life.

Above: Methanol extracted from sugarcane could be the motor-vehicle fuel of the future.

Below: A Malagasy pharmacy. Who knows what wonder drugs lie undiscovered in these roots?



“Madagascar’s rosy periwinkle led to a very powerful and useful drug against leukemia, primarily in children. Western companies reaped big profits, but not a single cent went back to Madagascar.”

over the American continent and in many areas of Asia and Africa as well. The knowledge that indigenous people have is absolutely critical to understanding how to use natural ecosystems.”

Proposing solutions is easier than paying for them. Mittermeier pointed out that biodiversity conservation can be good business. Harvesting nontimber forest products pays better than clear-cutting the forest for pasture or timber extraction. Ecotourism—going into natural areas and looking at wildlife—is on the rise. And debt-for-nature swaps—arrangements in which a third-world country is allowed to write off some part of its foreign debt in exchange for agreeing to preserve, undeveloped, some parcel of land—make a very large contribution to conservation without costing much. Umaña agreed. “There has to be a recycling of debt through debt-for-nature swaps, because we cannot continue the present trend where the developing countries are net exporters of capital to the developed world. Latin America exports more capital each year than it spends on education.

“We have to recognize the economic value of carbon storage,” Umaña continued, referring to the need to counterbalance mankind’s growing emissions of carbon dioxide—primarily from burning fuels—into the atmosphere. (Carbon dioxide traps heat, potentially making parts of the planet unlivable through a runaway “greenhouse effect.”) “The industrial countries will have to pay for it. Carbon-dioxide abatement policies should be based on present emission rates, but responsibility has to be based on cumulative emissions, because CO₂ stays in the atmo-

sphere for a very long time. And unless the developed countries recognize that when I plant a tree and store several tons of carbon in it, I’m providing a service to the global environment, there’s very little chance that revegetation will take place in sufficient quantities to make a difference. When an economist walks into a forest all he sees is the timber and the land. Everything else is valued at zero. That’s the most prominent force behind the destruction of the forests.”

Umaña pointed out that “the developing countries see biodiversity preservation as a burden, not as an opportunity for development. The wealth isn’t quantified, or else it’s appropriated. Madagascar’s rosy periwinkle led to a very powerful and useful drug against leukemia, primarily in children. Western companies reaped big profits, but not a single cent went back to Madagascar. We have to strike a bargain between the biodiverse countries and the biodiversity users. As an example, the National Biodiversity Institute of Costa Rica recently signed an agreement with Merck & Co., Inc., the world’s largest pharmaceutical company, which paid \$1 million for the right to explore Costa Rica’s biodiversity more systematically. And if any products of this exploration lead to commercially useful drugs, the royalties would be divided.

Binger and Umaña blasted agricultural subsidies as enormously destructive to the environment, and called for their immediate end. Binger was blunt: “There’s no reason why Japan should be allowed to pay its farmers 76 cents a pound in subsidies and keep the Filipino, Indonesian, or Thai rice farmer out. I don’t care if Japanese rice has spirits associated with it. It is ethically wrong.” Said Umaña: “According to the International Monetary Fund, agricultural subsidies cost the developing world \$50 billion a year in foregone foreign exchange—more than the sum of the industrial nations’ aid programs to the developing nations.” Binger, recalling his Jamaican upbringing, remarked, “about 15 years ago, my little village produced sugarcane. We had a decent quality of life. But in the early 1970s, the U.S. and the other OECD [Organization for Economic Cooperation and Development] countries started agricultural subsidies—about 250 billion dollars a year paid to farmers who use unsound technologies (the French and Germans use 700 pounds of fertilizer per acre) to provide products that their own society doesn’t need. This surplus goes on the world market, where it further depresses prices paid to tropical farmers, and what can’t be gotten rid of that way is distributed as humanitarian aid. In short, the North has effectively displaced the southern farmer—about half

of the world's population. When you lose your market you can't transform man-hours into production, and you have no choice but to withdraw capital from the natural-resource base to survive. In my village, we've withdrawn so much capital that there are no timber species left. They've all gone to the sawmill. The little creeks we used to swim in are now rivers which run dry most of the year, then flood. Three major floods in Jamaica over the last five years have cost over 260 billion dollars in damage. The fisheries are choked with silt from the denuded mountains, so our fishing industry is in collapse.

"The Jamaican economy is now the most indebted in the world per capita—1.3 million people with an average income of less than \$800 a year owing in excess of 4.5 billion dollars," Binger continued. "We pay 50 cents on every dollar for debt service, and then by the time we pay for petroleum, the Ministry of Finance has three cents of every dollar left in disposable income. Three cents to protect the environment, to educate the young, to provide transportation, to provide work. Without development that returns more than three cents on the dollar, we cannot invest in environmental problems."

Binger laid much of the blame on sectorial planning, wherein "the agricultural people make a plan—Chapter 1. The energy people make a plan—Chapter 2. The housing people make a plan—Chapter 3. And the only thing that goes from beginning to end is the binder. This isn't planning—it's compilation. The Agricultural Commissioner came to our village and said, 'I'm here to talk about agriculture. I don't want to talk about water. I don't want to talk about transport. You're going to close your sugar industry and plant root crops instead.' So we pulled out the sugarcane, which is a perennial that carpets the hillsides—holding the erosion rate to perhaps five tons of soil per acre per year—and we replaced it with yams and casaba. Now our erosion rate is 50 to 100 tons per acre per year. For every pound of yams that we sell in New York, we put 50 tons of soil into the Atlantic Ocean. We'll lose six feet of topsoil in 60 years. I asked the farmers, 'Why don't you farm over there?' They said, 'Only rocks grow on that part.' They don't make the connection that the soil is eroding, just that the rocks are becoming more prominent."

The developing countries will have to create hundreds of millions of jobs in the next century or face even worse unemployment than already exists, Binger reminded the audience. "My vision is that the majority of those jobs will be in rural areas, based on renewable natural resources—

what some of you affectionately call biomass." An energy-from-biomass economy would generate those jobs in sufficient numbers, and provide the economic incentive necessary for sound resource management. Binger recommended redirecting aid programs toward developing the technology to extract energy from sugarcane—the chief renewable resource of many tropical countries like his own Jamaica—and away from systematically dismantling the tropics' sugar industry. "We would have the best of all worlds. We would have a way for farmers to earn a living without destroying the environment, we would have sources of energy that would have no net carbon dioxide contribution, and we would have technology-driven development that could absorb our excess labor force. One might argue that sugar was a slavery crop, that sugar is hard work. I can't think of any developing-country person spending his day under a tree who wouldn't prefer a hard day's work to no day's work."

All the panelists were guardedly optimistic that the problems could be solved. Even Diamond thought things—at least in Indonesia, where he does his field work—were "difficult but not hopeless." Umaña offered this summary: "I think the human population will stabilize, more or less, in 50 to 80 years. We're going to pass through a very difficult period during the next few decades. We'll see some nasty stresses and some disasters, especially in places like sub-Saharan Africa. We're starting to see them already. But if we can fight a holding action, using whatever arguments work, we can make sure that a significant portion of biological diversity, and human cultural diversity with its attached knowledge, will survive." Binger summarized the developing countries' plight. "The poor don't need high-volume consumer goods—what they need are the basic necessities of life: food, shelter, clothing. [I think we can deliver those] if we understand how to focus aid, and commit ourselves to technology development that isn't market-driven, but people-driven." And Mittermeier invoked the memory of Konstantinos Doxiadis, who hypothesized that by the latter part of the next century we would have an ecumenopolis—a global human settlement linked by many different communication and transportation networks. "The real challenge will be to integrate core areas for conservation of biodiversity and maintenance of cultural diversity, and land for agriculture, forestry, and fisheries, into this scenario so that we don't wind up with a horror like some gigantic Mexico City, São Paulo, or Calcutta, but rather with something that's actually better than what we have today." □

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