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**Sustainable
Development:
Linkages and
Partnerships
for the
Developing World**

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Front cover: Village children in Liberia, where nearly half the population is under 15 years of age and a quarter of the children are malnourished. Will worldwide sustainable development efforts help their prospects for the future?

Photo by Eric Poggenpohl for Folio Inc.

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From the Editors

Although the negotiations were often contentious and the skeptics were many, last year's United Nations Conference on Environment and Development laid a foundation for sound development in the Third World. As Maurice Strong, secretary-general of the conference, said recently, "We got agreement at the highest level possible on our planet to the most comprehensive and far-ranging action program ever approved by the international community."

Crucial to that action program are closer linkages between spheres that many have viewed as disparate in the past, such as environmental protection and aid programs, and environmental protection and trade policies. Also crucial are creative partnerships and more of them—partnerships such as the United Nations' new Commission on Sustainable Development and an aid program called Africa 2000, which brings together governments and grassroots organizations to fight against poverty and to work to maintain ecosystems.

A previous issue of *EPA Journal* examined domestic challenges facing the United States in working toward Rio's directives. This issue focuses on the developing world, reporting on tough questions that must be answered as linkages are developed and partnerships are formed, and on some concrete progress that has been made to help the developing world work toward sustainable development.

Postscript: With Volume 19 (1993), *EPA Journal* became a quarterly magazine. In keeping with this change, the department previously called "Newline" has been renamed "EPA Roundup."

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The U.S. Environmental Protection Agency is charged by Congress to protect the nation's land, air, and water systems. Under a mandate of national environmental laws, the Agency strives to formulate and implement actions which lead to a compatible balance between human activities and the ability of natural systems to support and nurture life.

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Presidential Earth Day Address

President Clinton announces environmental actions

On April 21, 1993, President Bill Clinton spoke at the U.S. Botanical Gardens in Washington, DC, to celebrate Earth Day. Here are excerpts from his address, which outlined principles and policy directions for reclaiming a clean environment:

“ If there is one commitment that defines our people, it is our devotion to the rich and expansive land we have inherited. From the first Americans to the present day, our people have lived in awe of the power, the majesty, and the beauty of the forest, the rivers, and the streams of America. That love of the land, which flows like a mighty current through this land and through our character, burst into service on the first Earth Day in 1970

“Just as we yearn to come together as a people, we yearn to move beyond the false choices that the last few years have imposed upon us. For too long, we have been told that we have to choose between the economy and the environment; between our jobs; between our obligations to our own people and our responsibilities to the future and to the rest of the world; between public action and private economy.

“I am here today in the hope that we can together take a different course of action, to offer a new set of challenges

to our people. Our environmental program is based on three principles. First, we think you can't have a healthy economy without a healthy environment. We need not choose between breathing clean air and bringing home secure paychecks. The fact is that our environmental problems result not from robust growth, but from reckless growth. The fact is that only a prosperous society can have the confidence and the means to protect its environment. And the fact is healthy communities and environmentally sound products and services do best in today's economic competition.

“That's why our policies must protect our environment, promote economic growth, and provide millions of new high-skill, high-wage jobs.

“Second, we want to protect the environment at home and abroad. In an era of global economics, global epidemics, and global environmental hazards, a central challenge of our time is to promote our national interest in the context of its connectedness with the rest of the world. We share our atmosphere, our planet, our destiny with all the peoples of this world. And the policies I outline today will protect all of us because that is the only way we can protect any of us.

“And, third, we must move beyond the antagonisms among business, government, and individual citizens. The policies I outline today are part of



Official White House photo.

our effort to reinvent government, to make it your partner and not your overseer, to lead by example and not by bureaucratic fiat

“Our long-term strategy invests more in pollution prevention, energy efficiency, and solar energy; in renewable energy, environmental restoration, and water treatment—all of which can be found in the five-year budget that we have presented to the Congress. These investments will create tens of thousands of new jobs, and they will save tens of thousands more. Because when we save energy and resources, we will have more to invest in creating new jobs and providing better living

standards

"I've asked the Energy Department, the Commerce Department, and EPA to assess current environmental technologies and create a strategic plan to give our companies the trade development, promotional efforts, and technical assistance they need to turn these advances into jobs here in America, as well as to help promote a better environment. America can maintain our lead in the world economy by taking the lead to preserve the world environment.

"Last year, the nations of the world came together at the Earth Summit in Rio to try to find a way to protect the miraculous diversity of plant and animal life all across the planet. The Biodiversity Treaty which resulted had some flaws, and we all knew that. But instead of fixing them, the United States walked away from the treaty. That left us out of a treaty that is critically important not only to our future, but to the future of the world. And not only because of what it will do to preserve species, but because of opportunities it offers for cutting-edge companies whose research creates new medicines, new products, and new jobs

"Our administration has worked with business and environmental groups toward an agreement that protects both American interests and the world environment. Today, I am proud to announce the United States' intention to sign the Biodiversity Treaty.

"This is an example of what you can do by bringing business and environmentalists together, instead of pitting them against each other. We can move forward to protect critical natural resources and critical technologies. I'm also directing the State Department to move ahead with our talks with other countries which have signed the convention so that the United States can move as quickly as possible toward ratification.

"To learn more about where we stand in protecting all our biological resources here at home, I'm asking the Interior Department to create a national biological survey to help us protect endangered species and, just as importantly, to help the agricultural and

biotechnical industries of our country identify new sources of food, fiber, and medication.

"We also must take the lead in addressing the challenge of global warming that could make our planet and its climate more hostile to human life. Today, I announce our nation's commitment to reducing our emissions of greenhouse gases to their 1990 levels by the year 2000

"I am proud that yesterday the U.S. Army announced its plan to clean up a large number of sites where we learned recently that chemical weapons materials may be buried Working with EPA, the Army will clean up this problem safely and in an environmentally sound manner Now, we are taking steps to defend our people and our environment and the environment of the world. In that same spirit, I plan to sign an executive order requiring federal facilities that manufacture, process, or use toxic chemicals to comply with the federal right-to-know laws, and publicly report what they are doing

"It is time that the U. S. government begins to live under the laws it makes for other people. With this executive order, I ask all federal facilities to set a voluntary goal to reduce their release of toxic pollutants by 50 percent by 1999. This will reduce toxic releases, control costs associated with cleanups, and promote clean technologies. And it will help make our government what it should be—a positive example for the rest of the country.

"Poor neighborhoods in our cities suffer most often from toxic pollution. Cleaning up the toxic wastes will create new jobs in those neighborhoods and make them safer places to live, to work, and to do business.

"Today, I am also signing an executive order that directs federal agencies to make preliminary changes in their purchasing policies, to use fewer substances harmful to the ozone layer. Here, too, we must put our actions where our values are. Our government is a leading purchaser of goods and services. And it's time to stop not only the waste of taxpayers' money but the waste of our natural resources.

"Today, I am signing an executive order which commits the federal government to buy thousands more American-made vehicles, using clean, domestic fuels such as natural gas, ethanol, methanol, and electric power. This will reduce our demand for foreign oil, reduce air pollution, promote promising technologies, promote American companies, create American jobs, and save American tax dollars

"In that same spirit, I plan to sign an executive order committing every agency of the national government to do more than ever to buy and use recycled products. This will provide a market for new technologies, make better use of recycled materials, and encourage the creation of new products that can be offered to the government, to private companies, and to consumers. And again, it will create jobs through the recycling process.

"We must keep finding new ways to be a force for positive change. For example, the federal government is the largest purchaser of computer equipment in the world, and computers are the fastest-growing area of electricity use. That's why I am also signing an executive order today requiring the federal government to purchase energy-efficient computers. We're going to expand the market for a technology which America pioneered and still leads the world, and we'll save energy, save the taxpayers \$40 million a year, and set an example for our country and for the world

"On a colder day in the middle of winter, just three months ago, a poet asked us to celebrate not only the marvelous diversity of our people, but the miraculous bounty of our land. 'Here on the pulse of this new day,' Maya Angelou challenged us to look at 'the rock, the river, the tree, your country.' Now, it is a season of new hope and new beginnings. And as we look anew at our neighbors, our children, and our own communities, as well as the world around us, we must seize the possibilities inherent in this exhilarating moment; to face our challenges, to exercise our responsibilities, and to rejoice in them." ■

Carol Browner on EPA's Priorities

On Tuesday, April 13, 1993, EPA Administrator Carol Browner held an All-Hands meeting for EPA employees at Waterside Mall. Vice-President Al Gore spoke at the meeting, as did Administrator Browner. Following are excerpts from their remarks.

“In the election last November, the American people were given a choice: the status quo or change. And they selected change. The only way that we will deliver that change is by working together, by tearing down the barriers that exist between programs and across media and between headquarters and the regions; by tearing down the barriers that exist between states and EPA, between local governments and EPA.

“I have four priorities for the Agency. First, pollution prevention. Everybody talks about pollution prevention, and we have a pollution prevention office that does great work. We have got to move to the next generation: to integrate pollution prevention into every single thing that we do We must look for opportunities in permits, in rulemaking, and in enforcement, to bring pollution prevention ideas into every single thing that we do. Pollution prevention is our best hope for the future of environmental protection; not just environmental regulation, but environmental protection.

“A second priority: Why do we do the work that we do? To protect ecosystems. Unfortunately, however, the laws that we are responsible for implementing are media-specific. The challenge for us is to reach across those media-specific programs, to bring them together in a coordinated ecosystem protection

manner. If we fail at that, those across the country who are arguing that environmental regulation is too costly will prevail, and we will lose ground in the work that we have done

“The third priority is building partnerships. There is a tremendous wealth of resources outside of this Agency to help us do the job that we want to do. We must build those partnerships with state and local government, nonprofit organizations, the business community. It is in numbers that we will find strength, unlike the strength we can never have alone

“The final area of importance to me

and this Administration is to incorporate equity into our mission and programs. We must make sure that our programs are fair and protective for all, and we must do a better job of ensuring that the EPA work force is representative of this country.

“I look forward to helping all of you in the work that you do to make sure that we integrate these missions and this vision. In four years we want to look back and point to things all across this country where the public is protected and the environment has been restored.” ■

Al Gore on Healing Our Relationship with the Earth

“We are living in a time when the relationship between human civilization and the ecological system of the Earth is undergoing dramatic, radical change. Three factors have combined to produce this radical change: population growth, which is now adding the equivalent of one China's worth of people every 10 years; new technologies, which vastly magnify the impact that human beings have on the Earth, bringing us great blessings but also often bringing us adverse consequences that we did not anticipate and are not really prepared to deal with; and third—most important of all—a way of thinking about our relationship to the Earth which has convinced all too many that we simply do not have to take responsibility for what we do; that we can act with impunity.

These three factors together have

combined to cause a new destructive relationship which absolutely must be healed in our generation and in our lifetimes. Unless we heal this relationship now, we run the risk of crossing a point of no return, beyond which the ability to repair the damage will be much diminished.

“I am filled with hope because I see tremendous signs of progress and change. But all of us know very well that the only way that change will come is if the United States of America leads the way This is a turning point. These next several years are years that President Clinton, Carol Browner, and I want to be the most exciting years of your lives. We want you to be a part of a team that changes the way that we protect and preserve the environment and changes the way we as Americans think about and fulfill our obligations of stewardship.”

Secondhand Smoke Designated a Known Human Carcinogen

In its final assessment of the respiratory health effects of passive smoking, EPA has concluded that environmental tobacco smoke (ETS), also known as secondhand smoke, is a human lung carcinogen, responsible for approximately 3,000 lung cancer deaths annually among U.S. non-smokers. The Agency has also concluded that passive smoking results in serious respiratory problems for infants and young children. EPA's Science Advisory Board (SAB) has fully endorsed the risk assessment, including the conclusion that ETS should be classified a "Group A" carcinogen, EPA's category of greatest scientific certainty for known or suspected carcinogens. The SAB is the Agency's independent panel of outside scientific advisors that routinely reviews draft reports.

According to *The Washington Post*: "... Health advocates praised the report, saying that it was certain to lead to greater restrictions on smoking in public places. The tobacco industry said that scientific evidence does not support the EPA's conclusions Among the report's findings:

- Secondhand cigarette smoke is a human carcinogen, killing about 3,000 U.S. nonsmokers because of lung cancer annually.
- Cigarette smoke is responsible for 150,000 to 300,000 cases of bronchitis and pneumonia and other lower respiratory infections in children up to 18 months of age.

- Cigarette smoke increases frequency and severity of symptoms in 200,000 to 1 million children with asthma and increases the risk of new cases of asthma.

- Tobacco smoke also causes build up of fluid in the middle ear, a condition that can lead to ear infections "

The Los Angeles Times commented: "... By formally declaring that secondary smoke is a potent carcinogen in a class with radon, asbestos and other established cancer-causing agents, the report is likely to provide impetus for efforts to further restrict smoking in the workplace and elsewhere—renewing the debate over the rights of smokers versus those of nonsmokers The most bitter resistance to the EPA's move to link secondary smoke and lung cancer has been waged by Philip Morris USA, a leading cigarette manufacturer, and by the Tobacco Institute, the industry's chief lobbying organization. Some 30 years after the landmark surgeon general's report on smoking and health, the industry continues to argue that there is no scientific proof of a link between cancer and smoking. Health groups—among them the American Heart Assn., the American Cancer Society and the American Lung Assn.—said that they are hopeful the EPA report will spur government action to curtail smoking in public places Although the EPA has the authority to classify secondary smoke as a carcinogen, it cannot itself impose restrictions that would protect nonsmokers. That role



could fall to the Occupational Health and Safety Administration. Action on Smoking and Health, which for more than two decades has carried on anti-smoking crusades, has sued OSHA in an attempt to force sharp restrictions or bans on smoking in the work place "

The Wall Street Journal said: "... As a result of the EPA's report linking 'passive' tobacco smoke to lung cancer and other ailments, a new wave of tobacco-related lawsuits is likely, legal specialists say. These are expected to include:

- Workers' compensation claims by nonsmokers who say they became ill in a smoke-filled workplace.
- Suits against tobacco companies by nonsmokers who have been exposed, anywhere, to cigarette smoke.
- Damage suits by customers who experience adverse reactions, such as respiratory problems, at restaurants, bars and other facilities that permit

smoking.

While all these lawsuits have been attempted before, usually unsuccessfully, the EPA report is expected to be cited as compelling evidence of the perils of passive smoke. And it could aid plaintiffs even in cases in which exposure to the smoke preceded by many years the issuance of the report. As in all such cases, though, the plaintiff will still have to prove that the presence of the smoke caused his or her illness In part because of the political complexity of pushing through regulations or legislation on such controversial matters, the government has often encouraged private lawyers to bring lawsuits that might help bring about the same results as legislation. In the past, civil rights and the environment have been among the areas in which lawyers in the private sector, sometimes viewed as 'private attorneys general,' have promoted a public policy through litigation "

ENFORCEMENT

Stores Penalized for Selling Ozone Depleters

EPA's Boston office has proposed \$161,000 in penalties against 10 retail stores in Massachusetts and one each in New Hampshire and Rhode Island for selling auto air conditioning refrigerants containing ozone depleters to the general public. Under the Clean Air Act, small containers (less than 20 pounds) of such refrigerants may be sold only to technicians certified to operate refrigerant recycling equipment. The violations occurred during a series of unannounced calls on auto parts and hardware stores in which EPA inspectors posed as customers. The penalties range from \$7,000 to \$30,000, depending on the number of violations, the size of the store, and the amount of refrigerant sold. The stores have 30 days to request a hearing with the Agency. These are the first enforcement actions taken by EPA under the Clean Air Act requirement, which went into effect last November. Anyone

knowing of the illegal sale of ozone depleting refrigerants is urged to call EPA's Stratospheric Ozone Protection hotline at 800-296-1996.

Texaco, U.S. Oil to Pay \$14.7 Million for Oil Spills

Under consent decrees proposed to the U.S. District Court in Seattle, Texaco Refining and Marketing Inc., and U.S. Oil & Refining Co., will pay a total of \$14.7 million in penalties and clean-up costs for two separate oil spills in Washington state. The actions, announced by EPA, the Department of Justice, and the U.S. Coast Guard, were the first to be brought under the Oil Pollution Act of 1990, enacted following the Exxon Valdez spill.

Texaco spilled approximately 5,000 barrels of oil near Fidalgo Bay when a pump exploded at its refinery near Anacortes. The company will pay about \$8 million to complete cleanup



Rob Stapleton photo. Wide World.

of the spill, will install spill prevention equipment at a cost of about \$800,000, pay the government's removal costs of \$125,000, and pay a civil penalty of \$480,000 to the United States in addition to a \$20,000 penalty already paid to Washington state.

U.S. Oil spilled more than 14,000 barrels of oil at Tacoma when an underground pipe burst during unloading of a tanker. Some

of the oil entered Commencement Bay, a part of Puget Sound. The company will pay about \$4 million to complete cleanup, will install spill prevention equipment at a cost of about \$800,000, pay the government's removal costs of almost \$60,000, and pay a civil penalty of \$425,000 to the United States in addition to a \$45,000 penalty paid to Washington state.

Standards to Be Strengthened for Disposal of Radioactive Wastes

EPA has proposed more rigorous standards for protecting public health and the environment from the management, storage, and disposal of spent nuclear fuel, high-level, and transuranic radioactive wastes. Specifically, waste disposal systems would have to limit exposure of individuals to no more than 15 millirems per year—

roughly equivalent to two X-rays. Also, releases of radioactive material could not cause ground water to exceed standards set under the Safe Drinking Water Act. The new standards would amend those established in 1985 under the Atomic Energy Act; EPA will develop criteria for certifying compliance with them.

Radioactive wastes result from government and com-

mercial uses of nuclear fuel. Sources of spent nuclear fuel include nuclear power plants and nuclear defense production reactors. High-level waste is created when spent fuel is processed to recover uranium and plutonium that is used in weapon programs. Most transuranic wastes consist of rags, equipment, tools, and sludges that have become contaminated in the produc-

tion of nuclear weapons.

The standards and criteria will apply to the Department of Energy (DOE) Waste Isolation Pilot Plant (WIPP) near Carlsbad, New Mexico, a deep geologic repository for defense transuranic wastes. Before disposing of wastes at the WIPP site, DOE must demonstrate that operations there will comply with the EPA standards.

EPA "Energy Star" Expands to Computer Printers

In a major expansion of EPA's Energy Star program, which awards Energy Star logos to energy-conserving personal computers, (see July/August 1992 *EPA Journal*), companies accounting for 80 percent of the laser printers sold in the United States have committed to introducing printers that can automatically reduce power consumption when inactive. Studies show that computer equipment is inactive the vast majority of time it is turned on. EPA estimates that Energy Star printers will save 6 billion kilowatt-hours of electricity each year, reducing air pollution from power plants and saving consumers \$450 million in electric bills. Administrator Carol Browner said: "Today's announcement reflects President Clinton's vision of reinventing

government to encourage pollution prevention and voluntary corporate environmentalism. The companies joining the Energy Star printer program should be applauded for being at the forefront of a worldwide movement toward creating consumer products that incorporate environmental protection and energy-saving criteria."

The *New York Times* commented: "... The secret to energy conservation, according to the Environmental Protection Agency, is not always doing more with less. Sometimes it means doing nothing with less. Specifically, the agency wants electronic equipment to draw less electricity while it is switched on but waiting for something to do. So last week, the agency announced that seven leading

makers of computer printers, representing 80 percent of the laser-printer market, had agreed to redesign their machines to use less power when they are on standby. For many printers, that's nearly all day long ... Manufacturers that meet the standards will get an 'Energy Star' seal to put on the box. A similar program was announced for computers last year At Lexmark International, the company that produces printers for I.B.M., Virgil Boler, a product assurance manager, said the company's laser printers typically drew about 300 watts when they were running and 68 watts when they were doing nothing. Much of the 68 watts powers a bulb for heating the drum that is used to fuse the ink to the page; some of the electricity also runs a fan to carry off excess heat. The

redesigned model will draw only 18 to 19 watts, he said. But it may take 30 seconds to warm up after a long idle period, compared with about 10 seconds for the current models. At Bull H.N. Italia, which makes printers under the Compuprint brand, Ralph Levey, a manager, said the main 'bells and whistles' that sell computers are factors like the number of dots in an inch and how many kinds of type the printer can produce. But eventually customers will seek out machines that use less power, he said. "It may very well be that you'll see bids from the Government that the printers must meet E.P.A. guidelines," he said. "It's an idea that has long been appropriate"

On Board Computers to Watch Over Auto Emission Controls

Under a final rule issued by EPA, on board diagnostic computers will be installed on passenger cars and light trucks to monitor the operation of emission control systems commencing with the 1994 model year. Information on malfunctions will be stored in a memory bank, which can then be accessed by technicians.

According to the Agency, many problems with emission control systems do not affect a car's performance, and drivers are not aware of them. Also, the complexities of modern day controls often require examination of the entire system to discover a problem. The on board computer

will not only identify the problem but will alert the driver with a dashboard light. Repairs of malfunctions discovered early on are usually less complicated and can frequently be accomplished under manufacturer's warranty.

On issuing the rule, Administrator Carol Browner commented: "Proper vehicle maintenance prolongs the life of vehicles, improves fuel economy, and ensures return on the \$50 billion that motorists have invested in auto pollution controls. I also expect this new program to benefit many of the areas currently exceeding federal ozone and carbon monoxide air quality

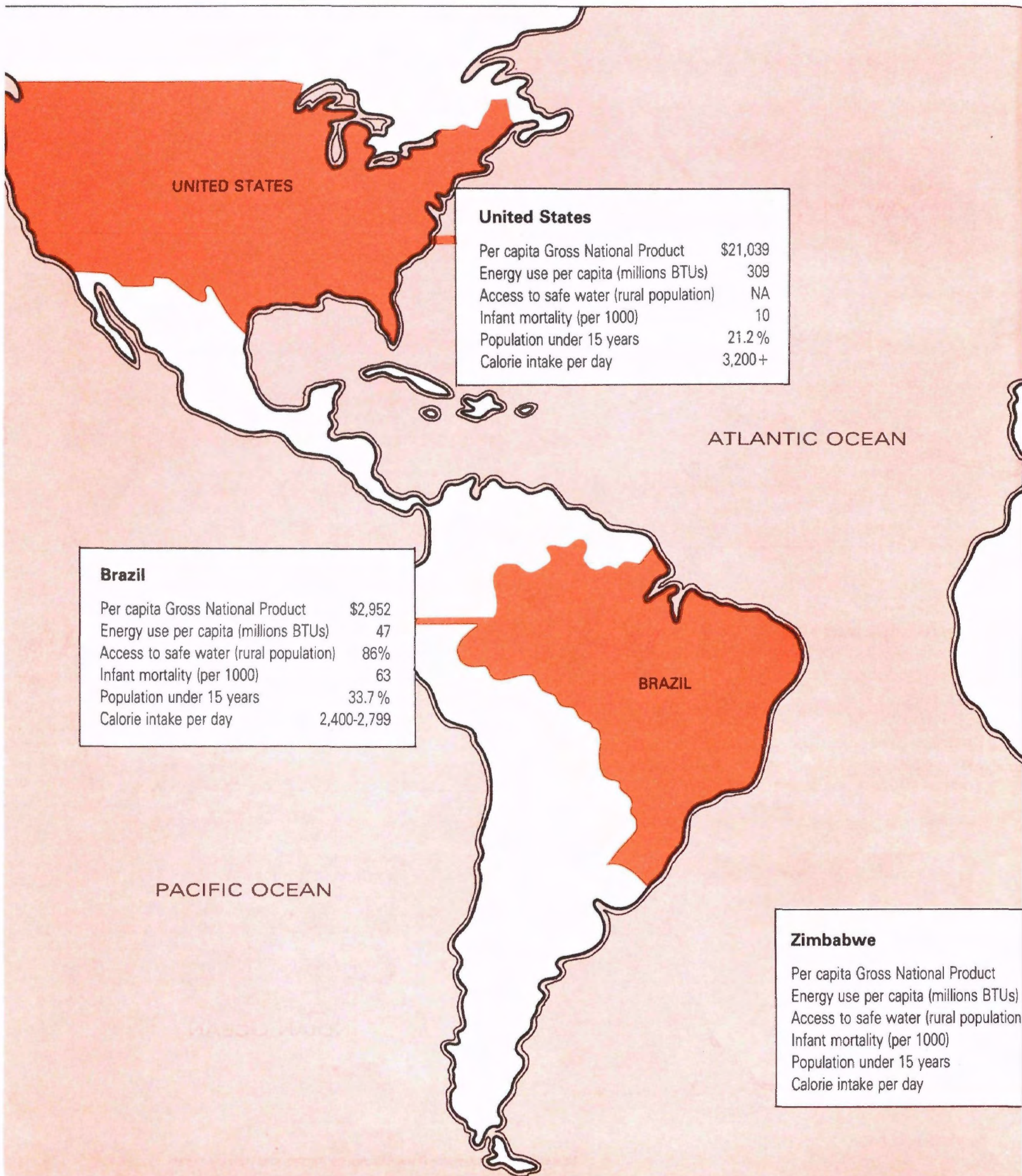
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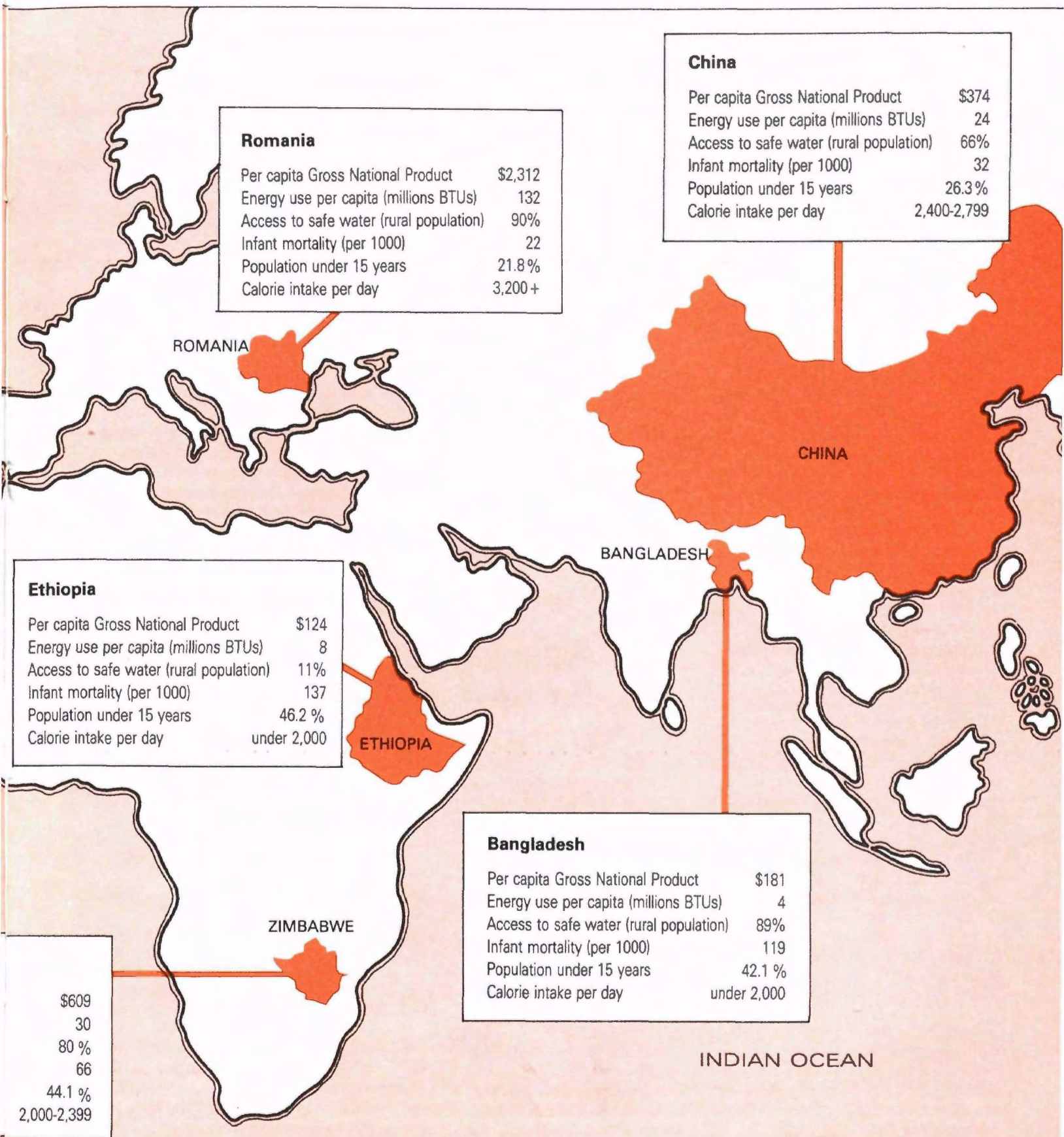
The *Wall Street Journal* reported: "... The Environmental Protection Agency ordered that new passenger cars and light trucks include diagnostic computer systems that check for malfunctions in emission-control components The diagnostic-systems regulation applies to new cars and light trucks starting with the 1994 model year. Under the regulation, which stems from the 1990 Clean Air Act, auto makers will have to install devices that check emission-control systems at least once

each time a vehicle is driven. If a system is functioning improperly, a dashboard light will alert drivers to the problem. The systems also will record where problems, which often are difficult to find, are occurring. California already requires similar diagnostic systems for vehicles sold in that state. According to the EPA, the new systems required by the federal government will add about \$65 to the cost of each new car or light truck, an expense that largely will be offset by fuel savings and reduced repair costs "

Resource Rich and Poor

The world's inequitable distribution of wealth and consumption





Romania

Per capita Gross National Product	\$2,312
Energy use per capita (millions BTUs)	132
Access to safe water (rural population)	90%
Infant mortality (per 1000)	22
Population under 15 years	21.8%
Calorie intake per day	3,200+

China

Per capita Gross National Product	\$374
Energy use per capita (millions BTUs)	24
Access to safe water (rural population)	66%
Infant mortality (per 1000)	32
Population under 15 years	26.3%
Calorie intake per day	2,400-2,799

Ethiopia

Per capita Gross National Product	\$124
Energy use per capita (millions BTUs)	8
Access to safe water (rural population)	11%
Infant mortality (per 1000)	137
Population under 15 years	46.2%
Calorie intake per day	under 2,000

Bangladesh

Per capita Gross National Product	\$181
Energy use per capita (millions BTUs)	4
Access to safe water (rural population)	89%
Infant mortality (per 1000)	119
Population under 15 years	42.1%
Calorie intake per day	under 2,000

Zimbabwe

Per capita Gross National Product	\$609
Energy use per capita (millions BTUs)	30
Access to safe water (rural population)	80%
Infant mortality (per 1000)	66
Population under 15 years	44.1%
Calorie intake per day	2,000-2,399

Beyond Mere Survival

Hope lies in equitable partnerships between rich and poor countries

by Shridath Ramphal

This issue of the *EPA Journal* is devoted to sustainability and the developing world. It follows an earlier issue on working toward sustainability in the United States. The conjunction is significant, underlining as it does that "sustainable development" applies to all countries.

Nothing illustrates better how sustainability challenges us all than the link between population and poverty. Growth rates have been declining, but by 2050 the planet could have double the number of humans it has now. While as much as 90 percent of this growth will be in developing countries, the impact of their increase on the environment (if present consumption patterns persist) will be lower than that exerted by the 10 percent added in the developed countries. Nevertheless, there is no avoiding the reality that burgeoning populations in poor countries will strain their natural resources beyond tolerable limits.

For a family on the edge of survival, it makes sense to have several children in the hope that some will survive to

support the rest. But when many families act the same way, the result is far more people than resources can sustain. Where there is already too little food, water, health care, sanitation, housing, jobs, energy, and land, rapid population growth makes development

Poverty ... restrains the demographic transition to smaller families.

difficult. In Kenya, for example, which suffers acutely from land hunger, urban unemployment, and environmental stress, a woman now produces nearly seven children on average. The population could quadruple to nearly 100 million in 35 years if the present rate of growth continues. In Bangladesh, where almost every acre of cultivable land is already used, and millions live on flood-prone mudbanks, facing imminent disaster, the population is expected to double from 110 million to 220 million over the same period, even assuming a halving of the birth rate. Increases in population pressure of this order contribute to many of the world's most acute environmental problems, including deforestation and desertification. They widen and deepen poverty, which in

turn keeps birth rates high. Poverty, in a perverse but historically predictable way, restrains the demographic transition to smaller families.

A fundamental response to the challenge of the population crisis is, therefore, inseparable from a response to the need for development itself. Ecology and economy are twin elements of global sustainability. Trade illustrates this well.

Developing countries know that trade can be the engine that powers their climb out of poverty. They have taken the advice coming from industrial countries and from bodies like the International Monetary Fund and the World Bank; to a far greater extent than before, they are turning to the global marketplace, just as they are embracing market forces at home. But they face an array of restrictions that prevent them from competing freely and benefiting fully from their comparative advantage in producing many types of exports. Even very poor countries like Bangladesh (annual income \$180 per head in 1989) and very small ones like Mauritius (population 200,000) have found that the world market bristles with obstacles placed by much richer countries.

Industrial countries, for example, often follow a policy that favors imports with the least value added. Processed and manufactured products are discouraged through rates of import duty that are higher than those imposed on the raw material. Sawn timber, for example, faces a higher duty than raw logs, generally admitted at zero duty; furni-

(Sir Shridath Ramphal of Guyana, Secretary-General of the Commonwealth 1975-90, is President of the World Conservation Union (IUCN) and Co-Chairman of the Commission on Global Governance. He was a member of the Brundtland Commission and a Special Adviser to the Secretary-General of the Earth Summit, for which he wrote Our Country, The Planet (Washington: Island Press).

ture carries an even higher tariff than timber. The environmental consequences are inevitable.

This policy is applied to many products poor countries need to export: cotton, jute, leather, rubber, paper, iron, tobacco. Fruit and vegetables also confront escalating tariffs: Prepared products have to pay twice the duty charged on fresh produce. Because industrial nations adopt this approach, exporting countries have to sell more of the raw product to earn the same income. They can do so only by putting more pressure on their land and other natural resources.

Policies that offer developing countries better access to markets will be better for both world trade and planetary health. The trade barriers rich countries impose cost poor countries billions of dollars in lost export earnings. These losses exceed by far what industrial nations give as development aid, amounting to \$54 billion in 1990. The World Bank reckons that, on clothing and textiles alone, developing countries are losing as much as \$24 billion a year, owing to protectionist curbs in rich countries. These barriers have been increasing. The United Nations says that

20 out of 24 industrial countries are more protectionist now than they were 10 years ago. It is because they block free trade in this way that rich countries have an added obligation to support the Third World through aid.

Unfortunately, at the Earth Summit, the U.N. Conference on Environment and Development (UNCED) held last June in Brazil, there was no firm commitment of so-called "new and additional resources" from rich countries for implementation of Agenda 21. The decision to provide the funds needed was deferred—at best, for consideration by the rich among themselves; at worst, ad infinitum. Agenda 21 was agreed to, but in effect made subject to the rich countries' providing resources to supplement and energize the much greater resources to be provided by the poor themselves.

What are the prospects for sustainability when over the last decade more than half of all U.S. aid went to only two countries (Israel and Egypt); when the United States, which once provided 60 percent of the world's aid, now gives only about 16 percent; when more than two dozen nations now exceed the United States in the percent-

age of gross national product they devote to foreign aid, with Japan now surpassing the United States in absolute terms as well?

However, it is not the withholding of aid alone that retards sustainability in the developing world; it is the withholding of technology, as well. Developing countries must, of course, make their development as environmentally benign as possible. This obligation they share with industrially advanced nations. They now know much more about the sources of ecological damage and of the processes and practices they should try to avoid. But this knowledge does not guarantee that they can use alternative processes.

Green technologies—recycling techniques, alternative energy sources, thriftier engines, CFC-free coolants—are developed mainly in industrial countries, which have some 95 percent of the world's facilities and scientists for research and development. For the global movement to sustainable development to gain momentum, poor nations must be helped to employ these technologies as they industrialize and as they modernize their farming. This requires international arrangements for the



Wide World photo.

A study in contrasts: A poor Rio shantytown uphill from Ipanema Beach, world famous for attracting upscale tourists.

transfer of technology to developing nations on terms suited to their circumstances.

More is required than awareness. The dual responsibilities of rich and poor countries are not wholly separate and self-contained. It is not simply a matter of each group of countries pursuing its own path to sustainable development and the paths converging in a secure environment. The logo of UNCED depicts the Earth "In Our Hands." It asserts that sustainable development requires a shared effort by all the world's people, a partnership for survival in which each country has a role that is related to, sometimes integrated into, the roles of others.

Other implications follow. The partnership is not between equals. Developed and developing countries are unequal in responsibility for getting it wrong and in capacity for setting it right. Aristotle, in his *Ethics*, has instructed us that equity between unequals requires not "reciprocity" but "proportionality." His dictum holds in this ultimate domain of environmental restoration. Proportionality must be the ethical touchstone of the roles of developed and developing countries in their partnership for survival through sustainable development.

Practicality dictates no differently. If climate change, with its serious implications for all, is essentially the result of

greenhouse gas emissions, and those emissions are overwhelmingly from developed countries, there is no avoiding the conclusion that the primary requirement is a reduction in emissions from those developed countries. There are roles for developing countries, like not adding to the problem by burning rainforests, but the central requirement is a change in course by developed countries. The same is true for many other elements of global environmental degradation: ozone layer depletion, acid rain, over-fishing, hazardous waste, nuclear risks. "The polluter pays" is a principle with application beyond national frontiers—and beyond financial recompense.

Products of the Earth Summit

The nearly 180 governments participating in the U.N. Conference on Environment and Development (UNCED) adopted **three new agreements** by consensus:

- The *Rio Declaration on Environment and Development* sets out 27 principles to guide the behavior of nations toward more environmentally sustainable patterns of development. The declaration, a delicate compromise between developing and industrialized countries which was tortuously crafted at preparatory meetings, was adopted in Rio without negotiation due to fears that further debate would jeopardize any agreement. UNCED Secretary General Maurice Strong and U.N. Secretary General Boutros Boutros-Ghali each praised the declaration as an important achievement, but called on states to negotiate a more inspirational and legally progressive "Earth Charter" for adoption in 1995 on the 50th anniversary of the United Nations.

- States at UNCED also adopted a voluntary action plan called *Agenda 21*, so named because it is intended to provide an agenda for local, national, regional, and global action into the 21st century. UNCED

Secretary General Maurice Strong called Agenda 21 "the most comprehensive, the most far-reaching and, if implemented, the most effective program of international action ever sanctioned by the international community." Agenda 21 comprises hundreds of pages of recommended actions to address environmental problems and promote sustainable development. It also represents an experimental process of building consensus on a "global workplan" for the economic, social, and environmental tasks of the United Nations as they evolve over time.

- The third official product of UNCED was a "non-legally binding authoritative statement of principles for a global consensus on the management, conservation, and sustainable development of all types of forests." Negotiations on the forest statement, begun as negotiations for a legally binding convention on forests, were among the most difficult of the UNCED process. Many states and experts, dissatisfied with the end result, emerged from UNCED seeking further negotiations toward agreement on a framework convention on forests.

Two international conventions were presented and opened for signature at UNCED, each of which attracted signatures of representatives of more

than 150 countries:

- A *Framework Convention on Climate Change* requires signatories to take steps to reduce their emissions of gases believed to contribute to global warming, although no mandatory targets and timetables for such actions were set, largely at the insistence of U.S. negotiators. In Rio, then-President George Bush signed the climate change convention. On April 21, 1993, President Clinton pledged that the United States would reduce its emissions of greenhouse gases to their 1990 levels by the year 2000 and would take the lead in addressing global warming.
- A *Framework Convention on Biological Diversity* prescribes steps for the protection and sustainable use of the world's diverse plant and animal species. Then-President Bush refused to sign the biodiversity convention, citing concerns about protection of intellectual property rights and the treaty's financing arrangements. On April 21, President Clinton reported that the Administration had worked out an interpretive statement addressing some business and environmental groups' concerns, and he announced that the United States would sign the biodiversity convention.

—Kathy Sessions



World Bank photo.

In crowded Calcutta, rush hour mingles old and new modes of transportation.

What if the developed world refuses to take the path of sustainable development, including helping the developing world to do so? The most extreme consequence would be environmental catastrophe, with severe implications for human life on the planet. To a degree unique in human history, a quarter of humanity has the potential not just for self-destruction, but for the extinction of the human species.

Developing countries cannot resign themselves to that scenario, yet they know they are not empowered to frustrate it. They can find hope in the fact that as three-quarters of the world's people they are not wholly without negotiating strength, that with many in the developed world sharing their insistence on survival they will never be entirely by themselves, that in the final analysis our human instinct to preserve life will transcend our capacity to destroy it. But not even taken together do these factors for hope

provide total assurance.

Meanwhile, the industrial world continues to consume 75 percent of the world's commercial energy, 90 percent of its traded hardwood, 81 percent of its paper, 80 percent of its iron and steel, 70 percent of its milk and meat, 60 percent of its fertilizers—to mention only some of the distortions in consumption—leaving less than a quarter of the global resource pie for the other three-quarters of the world's people. Developing countries ask whether global sustainability can really be achieved under such skewed apportionments of wealth and poverty. They ask whether a compact isn't needed under which they restrain their proclivity for short-term progress in exchange for assurance of a new global setting that offers space for their long-term development. They have not had an answer; what they infer from the body language of the rich countries is not reassuring.

Poverty traps the developing world in a vicious circle of constraint against sustainability. Chronic poverty works against civil society, against good governance and the realization of human rights broadly understood in their economic, social, and cultural dimensions, no less than the civil and political. As every sign points to poverty having grown and continuing to grow in the developing world, this circle bears directly on the prospects for sustainability, although it is seldom talked about.

The number of people living in poverty—on the equivalent of a dollar a day or less—which the World Bank placed at 1.1 billion in 1985, is now estimated to have reached around 1.2 billion. The United Nations expects this figure to touch 1.3 billion by 2000 and probably 1.5 billion by 2025—an inexorable expansion in the number of human beings condemned to lives of deprivation and desperation. Among children under

five, 180 million are reported to suffer from serious malnutrition, while 14 million die annually—most of them from preventable causes. In many parts of the developing world, notably sub-Saharan Africa and Latin America, there have been sharply reduced economic growth rates, falls in real per capita income, rising unemployment, and cutbacks in education and health care.

The implications of such marginal existence are that for people the priority is survival and that for governments the reality is powerlessness. Strategies for sustainable development are the best options for survival, but they present themselves as alternative pathways; their adoption presupposes a capacity to act and a horizon farther away than tomorrow. Since survival in many developing countries does connote making it to tomorrow, governments feel impelled to opt for short-term gains. The best chance for sustainability, then, lies in poor societies, themselves, choosing the path that their own long-term interests require. One way of improving the odds is to strengthen the capacity of people at the community level, so that the impetus for sustainability does not have to come entirely from governments.

This implies a larger role for nongovernmental organizations. More fundamentally, it means developing a free society in the true sense of the word. Formal democracy through elections is only the beginning. Much more is

What's in Agenda 21?

The Preamble outlines the purpose, scope, intent, and some of the terminology used throughout the text of Agenda 21.

Section 1, "Social and Economic Dimensions," includes recommended actions on: sustainable development cooperation, poverty, consumption, demographics, health, human settlements, and integration of environment and development in decision making.

Section 2, "Conservation and Management of Resources for Development," includes chapters on atmospheric protection, land resources, deforestation, desertification and drought, mountains, agriculture, biological diversity, biotechnology, oceans, freshwater resources, toxic chemicals, hazardous wastes, solid

wastes, and radioactive wastes.

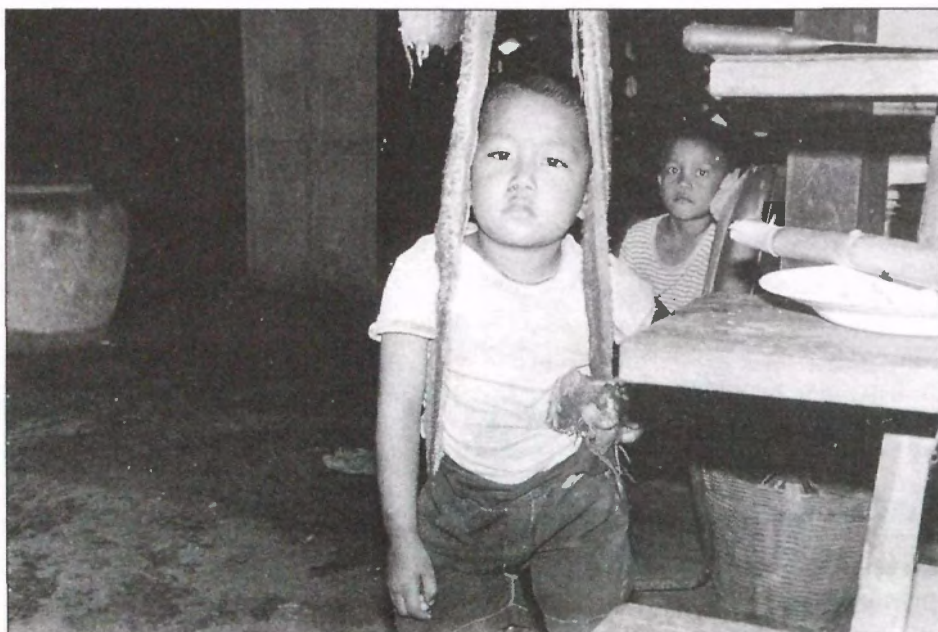
Section 3, "Strengthening the Role of Major Groups," includes ways to increase the participation in sustainable development efforts of major social groups: women, youth, indigenous peoples, nongovernmental organizations, local authorities, trade unions, business and industry, scientific and technological communities, and farmers.

Section 4, "Means of Implementation," comprises chapters on financial resources; technology transfer, cooperation, and capacity building; science; education, public awareness, and training; institutional arrangements; legal instruments and mechanisms; and information collection, analysis, and dissemination.

—Kathy Sessions

required to establish the conditions of civil society. When everything has been said about international regimes, about industrial country policies, and about governmental programs for sustainable development, sustainability in the developing world—perhaps not unlike

sustainability in developed countries—will depend on the capacities of people to discern the pathway of sustainable living and to take it. ■



Wide World photo.

This boy was born retarded, deaf, and almost mute. Doctors believe he suffered prenatal lead poisoning attributable to a landfill near his Bangkok home. Environmental stresses are coupled with inadequate access to health care in many developing countries.

Building the Capacity for Change

The world stands ill-prepared to address problems that cut across sectors and boundaries

by Kathy Sessions

"It is much harder to ask the right question than to find the right answer and even the right answer to the wrong question isn't worth much."

—Elting Morison,
Men, Machines, and Modern Times

It is already a truism to say that the United Nations Conference on Environment and Development (UNCED) heralded a new global commitment to sustainable development, premised on the interconnectedness of human activity and the environment. Also widely accepted is the notion that "capacity building" is needed, from the grassroots to the global level, to translate this new commitment into reality.

Capacity building usually is understood to mean helping governments, communities, and individuals develop the skills and expertise needed to achieve their goals. Capacity-building programs, often designed to strengthen participants' abilities to evaluate their policy choices and implement decisions effectively, may include education and training, institutional and legal reforms, as well as scientific, technological, and financial assistance.

Ask what specific capacity building is needed to achieve sustainable development, and you will get many answers, reflecting conflicting opinions about

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more basic questions such as, What is sustainable development? What are the first priorities for action among the myriad environmental and economic goals set out in Rio? And whose capacities are to be strengthened—from governments and international institutions to markets and nongovernmental organizations—to play what roles?

At first glance, the official products of UNCED are of little help. None provide a succinct definition of "sustainable development." The Rio Declaration on Environment and Development's 27 principles are more a list of North-South compromises than coherent guidelines for sustainability. And Agenda 21, UNCED's mammoth action plan, recommends more than 2,500 actions in 150 program areas, without explicit prioritization.

Look a bit deeper, however, and the UNCED agreements provide fairly clear, if tentative, lessons for capacity building on the road from Rio.

Governments from all kinds of countries acknowledged at UNCED that the well being of current and future generations are interconnected—by ecosystems and markets, communications and migrations—and that meeting human needs will require decision making that can cope with these interconnections. Most governments are better suited to handle an array of specific concerns—such as energy or waste management—than to deal with the relationships *between* sectors. And the capacities of the world community to

address problems that cut across either sectors or national boundaries are quite weak. For now, the lack of definition of sustainable development may be a "constructive ambiguity," because it has engaged nations in a process of discovery about the interrelationships of their worlds.

Building capacities for sustainable development cannot be seen merely as developing technical expertise in various sectors. The biggest challenge is to develop decision-making processes, from the local to the global level, that involve input from all relevant actors and that are designed to deal with the relationships between sectors and between communities.

UNCED took at least two steps in this direction, the first being Agenda 21 itself. The two-and-one-half year negotiation of the action plan—involving delegates from nearly 180 countries and hundreds of outside experts—was an experimental process for building consensus on a global sustainable development work plan. The final product combines recommendations for sectorial actions with suggestions for integrating environmental and economic considerations in decision making. The centerpiece is a recommendation that national governments and local communities prepare their own "Agenda 21" plans, not as ends in themselves but rather as tools for exploring the linkages among a wide range of policy decisions and their impacts on current and future generations.

Agenda 21 emphasizes the importance of broad social participation in these and other decision-making processes, devoting an entire section to means of "strengthening the roles of major groups" as important partners, including business and industry, labor, farmers, indigenous peoples, women, youth, local authorities, scientific and technical communities, and nongovernmental organizations (NGOs).

A Permanent Forum Created

A second step taken by UNCED to strengthen global decision-making capacities was a decision to create a high-level U.N. Commission on Sustainable Development (CSD) to serve as a permanent forum through which governments could review progress toward the goals of UNCED and integrate economic and environmental policy making.

Since then, the U.N. General Assembly and its Economic and Social Council have moved to establish the CSD. In February, they elected the United States and 52 other states as charter members of the new commission and scheduled its first substantive session for June 14-25, 1993, in New York City.

The CSD will meet for two to three weeks each year. It will review reports from governments and international organizations of their efforts to implement Agenda 21, discuss financial and

technical resource issues, and recommend further actions to promote sustainable development. "Cross-sectorial" issues such as financing and capacity building will be discussed annually; sectorial issues will be considered as part of a multi-year review of Agenda 21 beginning in 1994. As in UNCED, a range of NGOs will participate as observers, submitting reports and representing their constituencies. Each CSD session will conclude with a short ministerial meeting to give political impetus to its work and to discuss urgent and emerging concerns about the environment and development.

The CSD's first meeting will be crucial, shaping expectations as well as its methods of work. With such short sessions, commission meetings must be organized carefully. And much of its work will have to be done intersessionally—by working groups, secretariat staff, and outside experts—but these arrangements have yet to be resolved.

Getting the CSD underway will still leave significant gaps in global decision-making capacities. Some environmentalists initially hoped that the CSD could act as a watchdog to monitor compliance of governments and international institutions with environmental agreements, much as the Human Rights Commission does in its field. Yet the CSD's mandate is sustainable development—integrating environmental and economic objec-

tives—rather than just environmental protection, and there are few widely accepted standards in this evolving area by which the body could evaluate behavior. It falls to the CSD itself to build consensus on norms of behavior which, over time, could provide a basis for more effective monitoring and compliance.

The new CSD is, in the words of one U.N. diplomat, a new room in a house under renovation. While broader U.N. reform initiatives may eventually streamline the labyrinth of U.N. economic, social, and environmental efforts, the new commission begins with no budgetary authority over other U.N. bodies or over the World Bank and the International Monetary Fund, which have direct impacts on socioeconomic and environmental welfare. North-South disagreements, not only over economic policies but over the mechanisms for decision making, continue to fragment power between the one-state, one-vote bodies of the U.N.—enjoying political legitimacy but unable to command resources—and the one-dollar, one-vote international financial institutions—enjoying the confidence of donors but not broad legitimacy.

The CSD will rely on political rather than legal authority to integrate global environmental and economic policies. Its success will depend heavily upon the quality of participation from national governments, including the reports and



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Mike Keefe
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information they provide, the technical expertise and political authority their delegates bring, and the degree to which these governments reinforce CSD decisions through national representatives to other international forums. Governments must ensure that the CSD secretariat has adequate resources to fulfill its formidable mission of integrating information from a complex array of sources and maintaining momentum between sessions. They also should schedule CSD sessions to follow other relevant international meetings to enable the CSD to integrate and build on work being done elsewhere.

It comes down to political will: If the United States and other countries use the new commission to build consensus on global sustainable development goals, and if the countries reinforce that consensus through their national and international efforts, the CSD in turn can greatly strengthen their collective capacities to tackle environment and development problems.

Much also depends upon governments complementing this global effort by creating similar decision-making processes at regional, national, and local levels. National governments in particular must improve their ability to address sustainable development problems in a holistic manner, including participatory processes for consultation and mechanisms to coordinate national sustainable development efforts.

A Need for New Partnerships

People began with different agendas, along the road to Rio. Many participants from industrialized countries sought agreements to address urgent environmental problems such as deforestation, climate change, and the rapid loss of biological diversity. Participants from developing countries and those countries making the transition away from communism were determined to defend the right to development of the world's poor majority and to share the burden of change with industrialized countries whose own economic development patterns have had serious environmental consequences.

In the process of negotiations, most delegates began to acknowledge the common stake shared by all states in resolving the interrelated problems of



World Bank photo.

Basic infrastructure is sorely lacking in many developing countries. These Bogota workers are installing water pipes.

environmental degradation, poverty, and population pressures. Representatives of industrialized countries accepted a special obligation to help poorer countries build the capacities to make a transition to more sustainable paths of development, not as charity but as investments for shared benefit. This emphasis on "common but differentiated responsibilities" may prove to be one of UNCED's most important legacies, pointing to the potential of sustainable development capacity building as a new rationale for, and new approach to, development assistance.

Such an approach could have significant implications for U.S. foreign assistance. A Bread for the World study recently concluded that the United States spent only about one out of every four

dollars in its fiscal year 1993 foreign aid budget on programs whose objectives are consistent with sustainable development and humanitarian goals. The study acknowledged that some foreign aid dollars are allocated for other worthwhile objectives, such as conflict management and international coordination. It ultimately concluded, however, that many of the international economic activities currently supported in the foreign aid budget should be reevaluated, reduced, or redirected, allowing for a doubling of the amount devoted to sustainable development.

Agenda 21 highlights several areas where partnerships for capacity building are needed. For starters, each country is urged to review its national capacities and capacity-building needs for develop-

ing national sustainable development strategies. Donors are urged to provide financial and technical assistance for these reviews and for countries' subsequent efforts to implement their Agenda 21 plans.

Agenda 21 also highlights the need for improved information collection, analysis, and dissemination. It calls for

international cooperation on global environmental monitoring and assessment through the Earthwatch program of the U.N. Environment Program (UNEP). UNEP also is given the lead in developing techniques like full-cost accounting, which would provide decision makers with more accurate reflections of the costs and benefits of

their actions.

A related priority is the need for environmentally sound technologies. During the UNCED negotiations, a U.S.-led effort to redirect debate from "technology transfer" toward "technology cooperation" was received with cautious interest by negotiators from developing countries.

Recommendations that emerged in Agenda 21 included calls for the development of regional information clearinghouses and research networks to help link national and global information on environmentally sound technologies. International assistance is requested to build developing countries' national capacities to assess and adopt appropriate technologies. Governments are encouraged both to share publicly available technologies with poorer countries and to provide incentives to the private sector to share privately owned technologies.

Beyond decision making and informational capacities, Agenda 21 places major emphasis on human resources. This reflects a broader acknowledgement of the need to refocus development assistance on building indigenous capacities, recognizing that too often traditional "technical assistance" funding has been spent on expatriate experts whose work fails to strengthen local ownership or capacities to sustain their activities.

Agenda 21 gives the U.N. Development Program (UNDP) the primary responsibility for mobilizing and coordinating international capacity-building assistance. In response, UNDP has initiated a "Capacity 21" program designed "to help governments build the capacity to formulate and implement national programs of sustainable development." The program is intended to help initiate capacity-building efforts that would ultimately be mainstreamed into ongoing development efforts.

Words Come Easier Than Money

Enthusiastic verbal commitments made by heads of state in Rio failed to translate into much financial support. UNCED negotiators had wrangled over how sustainable development assistance should be handled, with the "Group of 77" bloc of nearly 130 developing countries pressing for the creation of a new, democratically controlled "Green

A Guide to International Organizations

Agency for International Development—AID is the principal U.S. government development assistance agency. AID's central Office of Environment and Natural Resources supports a series of technical assistance and support projects for all AID field missions; geographic bureaus and field missions provide funding for a broad range of environmental and natural resource programs.

Global Environment Facility—Established in 1990 through cooperation among the World Bank, UNEP, and UNDP, the GEF is an experiment in providing low- or no-interest loans for programs in four areas: protection of the ozone layer, reduction of greenhouse gases, protection of international water resources, and protection of biodiversity.

International Development Association—An affiliate of the World Bank, IDA is a lending agency intended to finance development projects in the poorer member countries for the same general purposes as the World Bank.

International Monetary Fund—The IMF is a specialized agency of the United Nations that aims to promote international monetary cooperation and stabilization of currencies, to facilitate the expansion and balanced growth of world trade, and to help member countries meet temporary difficulties in foreign payments.

Organization for Economic Cooperation and Development—OECD promotes economic and social welfare in member countries and harmonious development of the world economy. Members of OECD are the industrialized countries of North America and Western Europe, and Australia, Japan, and New Zealand.

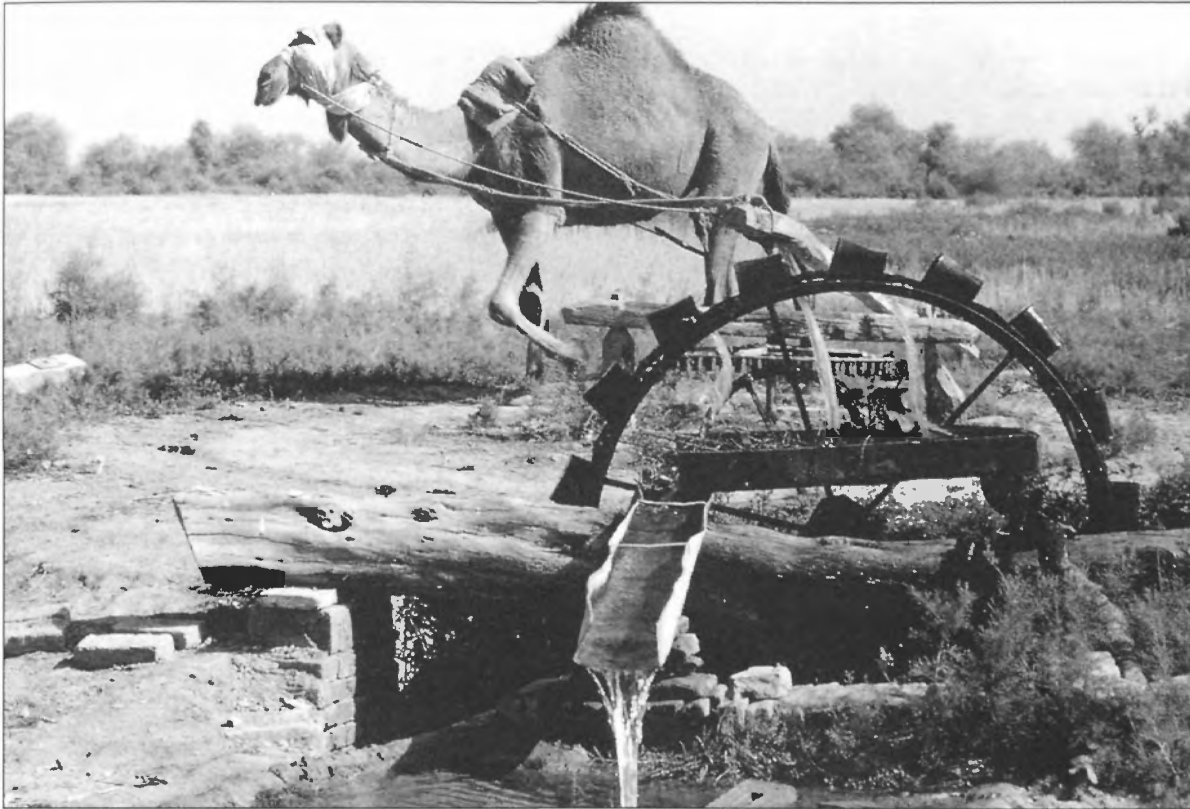
United Nations Development Program—UNDP is the United Nations' central agency for funding economic and social development projects around the world. It is intended to help developing countries increase the wealth-producing capabilities of their natural and human resources.

United Nations Environment Program—UNEP is the U.N. agency intended to cover the major environmental issues facing both the developed and the developing areas of the world. UNEP also is responsible for promoting environmental law and education and training for the management of the environment.

World Bank—Officially named the International Bank for Reconstruction and Development, the World Bank is the leading organization in the field of multilateral financing of investment and technical assistance. Beginning operations in 1946, this specialized agency of the United Nations originally was concerned with reconstruction of Europe after World War II and now provides assistance to developing nations and the underdeveloped areas of the Western world.

—Eds.

Sources: *International Organizations: A Dictionary and Directory* by Giuseppe Schiavone (St. James Press, 1983); *World Directory of Environmental Organizations* by Thaddeus Tryzna and Robert Childes (California Institute of Public Affairs, 1992).



World Bank photo.

Low-tech operation: A camel operates a community well in Bangladesh. Agenda 21 calls for regional information clearinghouses and research networks to share information on environmentally sound technologies.

Fund," and the industrialized country governments favoring the donor-controlled Global Environment Facility.

By the end, such disagreements over financing mechanisms became less significant than the fact that little new money was available through any mechanism. The governments did agree that "new and additional" resources would be needed to finance Agenda 21 through a variety of mechanisms, although most of the responsibility for financing national efforts falls to each country. They also agreed that the "cost of inaction could outweigh the financial costs of implementing Agenda 21."

But industrialized countries' domestic preoccupations, preexisting foreign aid commitments, and a global recession appeared to confound their stated desire to provide support. Southern governments in turn made clear that their commitment to implement Agenda 21 was contingent on assistance from their Northern neighbors. The U.N. system—including UNEP and UNDP—also was given significant new responsibilities

without clear commitments of resources to fulfill those tasks. Some pledges made at Rio, like that of the European Community of about \$4 billion for Agenda 21, were offered without clarifying whether this was new or only redirected assistance.

The tacit agreement reached in Rio that donors would add an "Earth Increment" to the next replenishment of the International Development Association, the branch of the World Bank which makes interest-free loans to the poorest countries, has yet to move forward. A pledging conference at the 47th General Assembly last fall did yield some increased offerings for development activities, among those a U.S. pledge for increased bilateral and multilateral development assistance in 1993, but again these came amidst confusion regarding their relationship to Rio goals. UNDP's efforts to raise \$100 million for Capacity 21 have brought in only \$30 million to \$40 million in pledges but almost nothing in hand.

Serious questions remain for both donor and recipient countries about the

ability of existing development efforts to build effective sustainable development capacities, fueling increasing concern for the quality as well as quantity of funds spent. And UNCED's political reach did not extend, by and large, to the World Bank, the International Monetary Fund, the General Agreement on Tariffs and Trade, transnational corporations, or other major actors whose decisions are likely to have far greater impacts on economic and environmental sustainability than will development assistance.

In many ways UNCED mirrored domestic concerns with the quality of human life enjoyed by citizens now and in the future. Americans share with others around the world a hope that the end of the cold war creates new opportunities to meet human needs. Taking UNCED's lessons to heart could help reinvigorate our awareness of the necessity of working within a global community to build capacities for change in a world order premised on sustainability, equity, prosperity, and security for all. ■

Deforestation and the Frontier Lands

Costa Rica illustrates how economic problems can lead to environmental crisis

by Carrie Meyer

An examination of the degradation of Costa Rica's forests and soils during the 1970s and early 1980s illustrates one facet of the concept of sustainable development: A troubled economy can lead to a degraded environment.

Almost 70 percent of Costa Rica's total land area is suitable only for forests; yet, because of rapid deforestation during the past two decades, today less than 40 percent of the land is under forests. Once the forests were cut, soils that had sustained them were quickly lost. Between 1970 and 1989, an estimated 2.2 billion metric tons of soil were eroded in Costa Rica. Had the loss of these natural assets been recorded, the annual depreciation of soil and forest assets would have amounted to more than 5 percent of the Costa Rican gross domestic product (GDP) between 1970 and 1989.

Costa Rica's land policies, economic subsidies, and the government's handling of the debt crisis of the early 1980s can be directly linked to the destruction of the forest lands, as those policies encouraged the nation's rapidly growing and poor population to move out onto the forested, or "frontier," lands.

Among the policies that led to Costa Rica's troubles were incentives provided

to cattle ranchers, such as subsidized credit and preferential exchange rates, to encourage them to produce beef for export. From the 1960s to the late 1970s, beef exports increased over 500 percent, and forests were cut to make grazing lands for the beef. Between 1963 and 1984, pastureland almost doubled, rising to 54 percent of the country's land area. However, as the Tropical Science Center in San José points out, only about 10

percent of Costa Rica's territory is suitable for pasture, implying that forests were squandered and soil resources washed away as steep and fragile slopes became pastureland. Pastures also encroached on good agricultural land, while small farmers struggled to grow subsistence crops on steep and eroding slopes.

Poverty and unequal access to income and land are also part of the picture. In 1986, the poorest fifth of the population



Rick Malcoof photo.

(Dr. Meyer is an Associate of the World Resources Institute (WRI) and coauthor of WRI's October 1992 report, Population Growth, Poverty, and Environmental Stress: Frontier Migration in the Philippines and Costa Rica.)

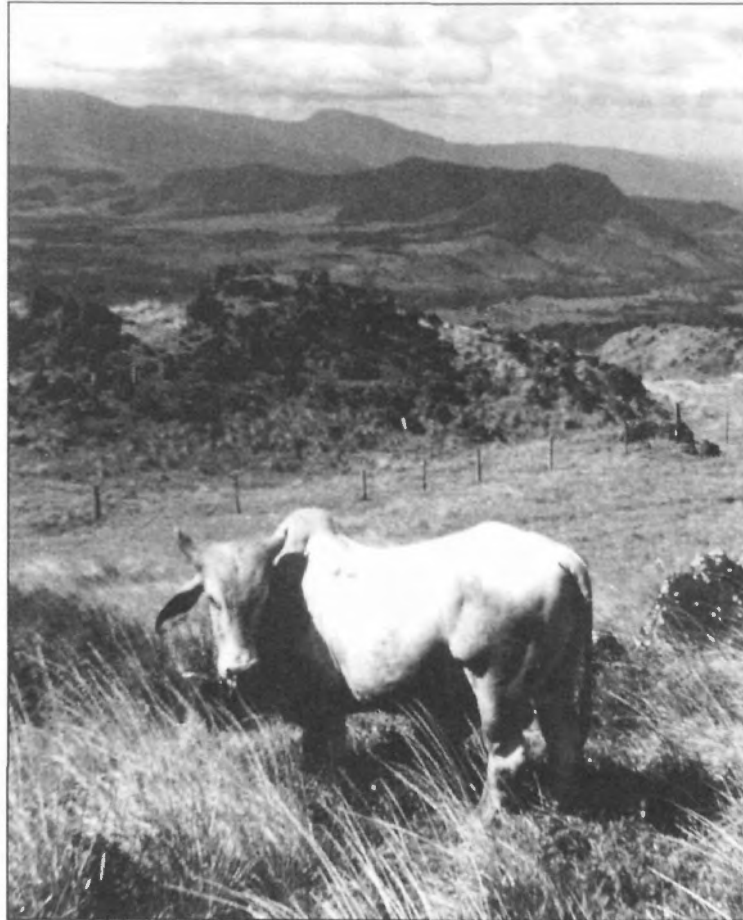
With city jobs scarce during the recession of the 1980s, many of Costa Rica's urban poor took refuge in rural areas. Farming lands unsuitable for agriculture, they carved out a meager existence at best.

received only 3.3 percent of national income, while the richest 10 percent received 38.8 percent. Land distribution was equally skewed. In 1984, 42 percent of the nation's farms were too small to support a family, while farms larger than 200 hectares tied up almost half of all agricultural land. High birth rates, especially in rural areas, meant that more and more peasants were forced to migrate in search of land or employment.

Costa Rica's traditional land tenure policies also have exacerbated the destruction of frontier lands. Squatters were traditionally granted provisional rights to any under-utilized public or private land that they occupied for a year, if they "improved" the land by at least partially clearing it. They could then sell the land to a speculator or a cattle rancher who could receive full title. With government incentives for cattle ranching buoying demand for pasture, "professional squatters" had a compelling reason to clear land merely to sell their "improvements" and then move on to repeat the process elsewhere in the forests.

The "debt crisis" that hit Costa Rica in the early 1980s brought burgeoning unemployment and plummeting real wages, and pushed many more landless peasants toward the frontiers in search of subsistence. The roots of that crisis can be traced to the early 1970s, when economic policies biased toward industry undermined the basis for sustained economic growth. The growth Costa Rica experienced later in the decade was maintained only by rapid expansion in the government sector, which was financed by foreign loans. In 1974, Costa Rica's total long-term debt was \$21.3 million (in 1984 dollars). By 1979, the debt had multiplied 13-fold and equalled 10 percent of GDP.

Due to a weakening global economy, falling commodity prices, and rising interest rates, Costa Rica found it impossible to service its debts and declared a moratorium on interest payments in 1981. To obtain approval for new loans from the International Monetary Fund, the government adopted a stabilization plan that cut government expenditures by 28 percent between 1980 and 1982. This dramatic contraction in the government sector led the downturn of the rest of the economy.



Rick Maloof photo.

Most of Costa Rica makes poor pastureland; nevertheless, many forested acres were cleared in the 1960s and 1970s so that beef could be produced for export. Remaining forests show up dark in the background.

In just two years—1981 and 1982—unemployment doubled and real wages dropped by 30 percent.

Rural areas became the refuge for those with nowhere else to turn. While migration from rural to urban areas was a major feature of the 1970s, during the five-year period leading up to 1984—which included the two years of deep recession—more migrants left the metropolitan area than entered it. At the same time, the net number of those leaving rural areas whose land resources were ranked as "poor" or "very poor" dropped dramatically. Four times as many squatters received rights to land in the period of economic crisis as did in the earlier census period. The vast majority of these settled in districts with poor or very poor lands—lands that were unsuitable for agriculture.

Fortunately, although Costa Rica's economic crisis was deep, it was also

short-lived. Between 1977 and 1983, the number of people living below the poverty line swelled by 50 percent, but by 1986 it had fallen again to its earlier level. Because the economic recovery was led by growth in agriculture, the poorest people benefitted the most. Between 1981 and 1989, the incidence of poverty fell from 25.4 percent to 10.2 percent, even as per-capita income declined. Today, the Costa Rican government has better positioned itself to encourage both economic growth and environmental protection. The structural adjustment policies Costa Rica adopted in the early 1980s laid a firm foundation for its economic future. The nation has also moved to protect its natural resource base by repealing the economic incentives that encouraged beef exports and reforming land-tenure policies that encouraged forest clearing. ■

The World Bank's Post-Rio Strategy

The bank plans to follow through on Agenda 21

by Mohamed T. El-Ashry

Twenty years ago, popular consensus held that the goals of economic development and environmental protection were mutually exclusive. Economic development was believed to be unavoidably destructive to the environment and environmental protection was considered a constraint to development. Today, this dichotomous view has largely given way to a better understanding of the linkages between development and the environment. The accords agreed to at the United Nations Conference on Environment and Development (UNCED) indicate that development policy makers have come to realize that degradation of the environment and depletion of valuable natural resources not only impede economic development but threaten human survival. At Rio, the world community reached an unprecedented consensus on the need to fully integrate environmental concerns into the mainstream of economic decision making. This is essential for successfully redirecting the economic, demographic, and political forces that underlie environmental degradation at both local and global levels.

To ensure that this vision materializes, however, we need to move beyond agreement on the need for better and integrated policies and on to their effective implementation. We must learn

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how to operationalize sustainable development, and equipped with that knowledge, we must set about closing the gap between the rhetoric of sustainable development and its limited practice in the field. Regrettably, national and international institutions—the World Bank included—have in the past not fully met this challenge of implementation. The poverty, hunger, and disease suffered by millions in the developing world demand that we do better.

Agenda 21—the main operational product of UNCED—provides the post-Rio world with a starting point. A remarkably comprehensive document, it guides the implementation of national and international policies in support of sustainable development into the coming century. Agenda 21 also embodies one of UNCED's major themes—that concerted action and shared responsibility by developed and developing countries are crucial for addressing the linkages between development and the environment.

What role should the World Bank play in response to the Earth Summit's clarion call for sustainable development? With its long-standing commitment to poverty reduction and uniquely diverse capacity—in technical assistance, project finance, policy dialogue, and research—the bank is well placed to adopt, and follow through on, the holistic approach championed by Agenda 21. The Earth Summit and the bank's own 1992 World Development Report on Development

and the Environment provided the impetus and intellectual foundation for the bank's current four-point strategy for sustainable development, outlined below:

- **Environmental Assessment.** The first component of this strategy is the development of a comprehensive environmental assessment procedure which aims to ensure that development options under consideration are environmentally sound and sustainable. All projects the bank helps to finance—other than those such as education or family planning projects, which are unlikely to have direct, adverse environmental consequences—must undergo an environmental analysis or a full environmental assessment, depending on their potential environmental impacts. Borrowers' environmental assessment capabilities are strengthened by methodological, technical, and staffing assistance provided by the bank, and internal bank support for environmental assessment has been bolstered until borrowers' capacities have improved.

Environmental assessment is a vital first step. It recognizes and responds to a powerful reality: If soils are damaged, aquifers depleted, and ecosystems disrupted, then regardless of any short-term income benefits, the long-run prospects for development will be undermined. But environmental assessment is only part of a strategy for sustainable development. With the



World Bank photo.

Better access to education can help break the cycle of poverty, population growth, and environmental degradation. The World Bank plans increased funding for education, health, nutrition, and family planning. This primary school is in Calcutta.

addition of four billion people to our numbers over the next 40 years, it is not enough simply to protect the environment and promote economic growth. We must strike at the roots of poverty.

• **Reduction of Poverty.** The second component of the bank's strategy for sustainable development builds on the relationships between poverty alleviation, economic efficiency, and environmental quality. More than any other influence on the environment, none is as immediately powerful as poverty. For the poor just to survive, they are compelled to take what they can from the land today, and they lack the means to conserve their natural resources for tomorrow. Yet, they suffer most directly and severely when these resources deteriorate.

To improve the environmental health of developing countries, we must attack the political consequences of poverty as well as its economic basis. Poor people

are often politically marginalized and excluded from the decision-making and policy-implementation processes. Local community participation and consultation can change this by establishing the legitimacy of development efforts and policies at the outset, building powerful constituencies for environmental stewardship, and greatly improving the prospects for successful implementation. The key to effective change is empowering the poor to break the vicious cycle of poverty, population growth, and environmental degradation.

This means better access to education and social services as well as a voice in and "ownership" of development efforts that affect them. The bank's annual social sector lending is projected to average about \$5 billion over the next three years. Lending for clean water and sanitation is expected to double, and investments in education, health, nutrition, and family planning are expected to increase

by two-thirds. And with the 10th grant refunding of the International Development Association (IDA)—the lending arm of the bank—IDA has pledged a stronger attack on poverty in the poorest countries of Southeast Asia, Africa, and Latin America. Particular emphasis will be on poverty reduction, family planning, and social services for women in these areas.

Building on the synergy between poverty reduction and economic efficiency also has a powerful impact on the environment. The bank is working with its borrowers to develop policies that can provide both substantial economic and environmental benefits, such as the elimination of subsidies for environmentally harmful activities, clarification of property rights, and liberalization of trade. The elimination of energy subsidies in developing countries, for instance, would save governments nearly \$230 billion each year with a dramatic



Ten countries, including the Philippines, have national environmental action plans that will help foster sustainable development. These terraced rice fields are part of a Philippine project studying the comparative success of different strains.

impact on air quality. Where the links between poverty and the environment are not so positively related, policy measures can minimize the tradeoffs by targeting environmentally destructive behavior with market-based incentives, such as taxes or charges, or government regulations. A recent study of air pollution from transport in Mexico City, conducted by the bank and the Mexican regulatory authorities, recommended a mix of such policies—mandated emission standards, fuel improvements, and a gasoline tax—some of which the city has already begun to implement.

• **Setting Priorities and Defining National Strategies.** The third part of the bank's post-UNCED strategy is to assist member countries in setting priorities, building institutions, and formulating targeted policies for environmental stewardship. To this end, the bank continues to provide advice and help arrange technical assistance for countries in the preparation of their national environmental action plans (EAPs). The EAP process aids government decision

makers in environmental planning and investment strategies by reviewing environmental priorities and identifying required policy actions, investments, and institutional changes, coordinated across economic and social sectors. EAPs also facilitate policy dialogue between donors, recipients, and beneficiaries, as their development is based on a process of popular participation at all levels of the community. Ten such action plans—for Burkina Faso, Egypt, The Gambia, Ghana, Lesotho, Madagascar, Nigeria, Rwanda, the Philippines, and Sri Lanka—have been completed by IDA countries thus far. Nineteen more are expected by the close of the bank's 1993 fiscal year. Regional environmental action plans are also underway (e.g., in Central and Eastern Europe and in Africa) to address environmental problems that transcend national borders.

Environmental action plans explicitly recognize that the environment cannot be sectorially delineated. By integrating sustainability considerations into a

country's entire development strategy, EAPs represent the holistic, cross-sectoral approach called for by Agenda 21. They also help development assistance institutions and donor agencies set their own appropriate targets and funding priorities. The bank's own country assistance strategies are reinforced by analytical and policy work done as part of national EAPs.

• **Global Environment Facility.** The fourth and final component of the bank's strategy calls for addressing international environmental challenges through participation in the Global Environment Facility (GEF). Two important conventions, dealing with biodiversity conservation and climate change, were signed in Rio, and the GEF has emerged as both a facilitator and funding mechanism to secure the participation of developing countries in realizing the goals of the Rio conventions and for integrating global environmental concerns into the development process.

Established in 1990 as a three-year pilot program to address global environ-

mental issues of climate change, ozone depletion, loss of biodiversity, and pollution of international waters, the GEF is implemented by the U.N. Development Program, the U.N. Environment Program, and the World Bank. The GEF provides a reasonably large volume of additional resources to developing countries to invest in global environmental protection. In total, industrialized and developing countries have pledged some \$1.3 billion to the facility for commitment over the three-year pilot phase. The facility is also uniquely important because it is specifically designed to serve the interests of the world as a whole. Protection of the global commons has typically been considered a classically unresolvable problem of collective action, but at UNCED, the international community rose to the challenge of defending the global commons from further degradation. The GEF stands as the practical manifestation of that resolve. A number of donors pledged in Rio a two-to-three-fold increase in its resources beyond the pilot phase.

In the transition from pilot to permanent status, the GEF is undergoing a number of important institutional adjustments. Membership will become universal—any country that wishes to join the GEF will have the opportunity to do so without paying a membership fee, and can join the current restructuring discussions. Efforts are underway to establish decision-making procedures within the facility that guarantee a balanced and equitable representation of the interests of developing countries while giving due weight to the funding efforts of donors. The GEF is also

working to articulate linkages to the biodiversity and climate change conventions, and to assist developing countries in the formulation of their national action plans and strategies under these conventions. A major challenge for the GEF is how it can play the catalytic role of integrating global environmental considerations into the regular development assistance programs sponsored or co-financed by bilateral and multilateral agencies—particularly in the areas of energy planning and development, forest management, and agriculture. Another challenge is integrating the global actions it supports into country priorities and national sustainable development plans.

The GEF illustrates a new approach to North-South cooperation on the impor-

generations by helping developing countries mitigate their growing contribution to global environmental degradation.

Behind the transition from policy integration to implementation at the World Bank is a spectrum of research and analysis that informs policy making for environmentally sound development. The research efforts of the bank's environment department and other sector departments emphasize the integration of environmental concerns into the bank's policy work through, for example, the economic valuation of environmental "goods" and "bads" and improving efficiency in energy production and use. More emphasis is being given to social and cultural issues, such as the role of women in development, cultural heritage and indigenous peoples, and the challenges of equitable resettlement practices. To this end, a new division of social policy has been established in the bank's environment department.

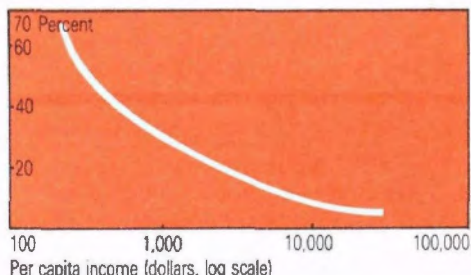
The challenges of environment and development are daunting, and the real work of integration and implementation lies ahead. International institutions have a major role to play in bringing about a new era of international cooperation for sustainable development. We have accumulated an unprecedented wealth of scientific knowledge and improved tools for analysis and prediction, and we have gained the technical and institutional experience to take action. Further, the agreements at UNCED mark the beginning of an international political will to take the necessary steps to protect the earth on which our survival depends. ■

More emphasis is being given to social and cultural issues, such as the role of women in development

tant issues of global environment as they relate to sustainable development in developing countries. Institutionally, it may be a model for broader international cooperation without setting up new bureaucracies. More important, I believe the GEF points to a willingness on the part of the world's wealthier states to safeguard the inheritance of future

Environmental Indicators at Different Country Income Levels

Urban population without adequate sanitation

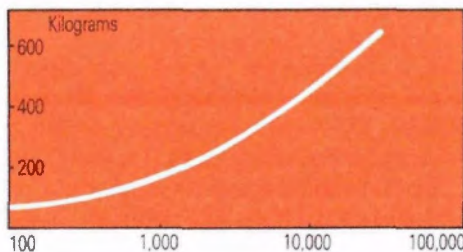


Per capita income (dollars, log scale)

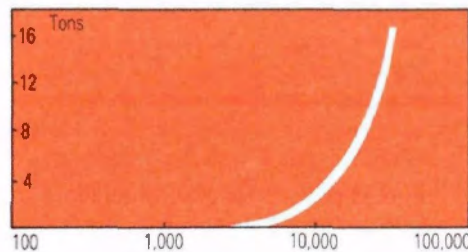
Note: Estimates are based on cross-country regression analysis of data from the 1980's.

Source: World Bank.

Municipal wastes per capita



Carbon dioxide emissions per capita*



*Emissions are from fossil fuels.

Can the World Bank Be Reformed?

The bank's record on promoting sustainable development is poor

by Korinna Horta

Mr. El-Ashry's article acknowledges that protecting the environment is not separate from development and poverty reduction, but that, indeed, it is the basis for all economic activity and ultimately human survival. This represents an important departure from the still widely held view of a tradeoff between economic development and environmental quality. Equally important is Mr. El-Ashry's recognition that environmental concerns must be fully taken into account by mainstream economic decision making.

However, the real task at hand is bridging the gap between the rhetoric of sustainable development and what is actually happening. The same institutional barriers that prevented the World Bank from financing environmentally sustainable programs in the past continue to be at work today.

The World Bank, the world's largest development agency, is widely viewed by both environmental and development organizations as an institution that continues to be incapable of promoting environmentally sustainable development. Environmental organizations in both developed and developing countries have accumulated widespread evidence that World Bank financed projects often lead to environmental destruction and social disruption and that very little attention is being paid by the World Bank to the degradation of

natural resources and increasing poverty that arise from many of the policy reforms the bank promotes through its structural adjustment programs. World Bank forestry-sector loans to the West Africa countries of Ghana and the Ivory Coast are examples of a lack of attention to the environment and the needs of local people.

After years of international criticism and pressure on part of nongovernmental organizations and some parliaments, including numerous legislative efforts by the U.S. Congress, the World Bank launched in 1987 widely publicized environmental reforms. While these reforms have led to vastly increased environmental staff at the bank and to several positive policy statements, such as the one strengthening the requirements for environmental impact assessments, there is mounting evidence that their impact in field projects has often been marginal at best.

Interestingly, a recent internal World Bank report, known as the Wapenhans Report, named after the bank's now retired vice president who headed the task force that wrote the report, identifies the bank projects' lack of sustainability in much the same way that environmental organizations have. The Wapenhans Report carried out an internal review of the bank's \$140 billion loan portfolio and reached the disturbing conclusion that, according to the bank's own criteria on adequate economic rate of return, nearly 40 percent of recently evaluated projects are failures. The underlying problem,

according to the report, is that the bank emphasizes only rapid loan approval and pays scant attention to the actual implementation of projects. Environmental organizations have pointed out for several years that the bank's overwhelming priority to meet certain lending targets and its internal structure, which rewards staff for rapid loan processing, prevents the institution from promoting the long-term viability of its development projects. It also leads to pervasive violations of the bank's stated policies, which require consultations with populations affected by projects, because these are time consuming and therefore not conducive to career advancement of bank staff.

The World Bank's policy of withholding project documents and reports from the public in both donor and recipient countries and from lawmakers and government entities is another key institutional barrier that stands in the way of sustainable development. While the need for confidentiality of certain documents may be legitimate for the borrowing country's national sovereignty, there is no justification for keeping secret relevant environmental and social information related to World Bank programs.

There are, for example, no provisions to ensure that the environmental impact assessments and national environmental action plans, mentioned by Mr. El-Ashry as key elements in the bank's strategy to achieve sustainable development, are made public systematically. The World

(Horta is an economist with the Environmental Defense Fund.)

Bank refuses to make this environmental information available to the public, stating that it is up to the recipient governments to decide what to do with it. However, not many governments in recipient countries choose to grant access to information and involve the communities and resource users that are directly affected by the environmental plans. More often than not, these planning exercises are carried out in a top-down fashion by foreign experts on short-term missions, and their on-the-ground impact is questionable. Development will be sustainable only when local people are actively consulted. How this can be achieved without public access to project information is incomprehensible.

The Global Environment Facility (GEF) is largely run by the World Bank, which administers, chairs, and coordinates the facility and handles all GEF investment projects. The other two participating agencies, the U.N. Development Program and the U.N. Environment Program, are very junior partners in the GEF. As such, the GEF suffers from many of the same problems as regular World Bank lending, namely a highly centralized management struc-

ture focused on rapid project processing and not on the actual project impact on the ground, and an overall lack of access to information and accountability.

In addition, about 80 percent of all GEF investment projects are mere components of much larger World Bank loans, which often undermine the very same global environmental goals that the GEF seeks to address. Yet neither the governments participating in the GEF nor the GEF's Scientific and Technical Advisory Panel, which evaluates GEF project proposals, have full access to information on the associated World Bank loans.

Environmental organizations have documented that, especially in forestry and energy projects, World Bank loans are often at odds with the objectives of biodiversity conservation and reduction of greenhouse gas emissions that the GEF seeks to achieve. For example, the World Rainforest Movement, an international environmental organization based in Malaysia, recently produced a study on a GEF biodiversity protection project that is attached to a World Bank forest loan for Laos. The study found that the World Bank was violating its own policies

designed to protect indigenous peoples, and that its top-down management planning for the forest resources of Laos would reduce access to the forest for about 50 percent of the country's population that relies on traditional forest uses.

Some of the findings of the World Rainforest Movement were corroborated by an internal World Bank report. Although local community involvement is essential to any long-term conservation efforts, the internal World Bank report found that no provisions were made for a participatory development process in and around the areas to be protected by the GEF project.

Mr. El-Ashry's article rightly emphasizes the need for integrating global environmental concerns into the development process. The global environment would greatly benefit if the World Bank's annual lending operations of about \$25 billion were made consistent with global environmental goals. This will require major institutional reforms, without which sustainable development will continue to elude us. ■



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Trade-Environment Tensions

Options exist for reconciling trade and environment

by Paul Cough

Expansion of world trade and worsening regional and global environmental problems increasingly bring trade and environmental interests into conflict. North-South tensions, in particular, have become acute, mainly because of differences in the scope, stringency, and cost of national environmental regulations.

These tensions and their root causes are addressed in the Rio Declaration (see box) and in Agenda 21. Trade and environment issues also figure prominently in the North American Free Trade Agreement (NAFTA), in the Uruguay Round of negotiations under the General Agreement on Tariffs and Trade (GATT), and in the work of such international bodies as the United Nations Conference on Trade and Development (UNCTAD) and the Organization for Economic Cooperation and Development (OECD). This article examines the principal trade and environment tensions between developed and developing countries and describes some options for resolving them.

In 1991, a dispute settlement panel under the GATT found that a U.S. ban on imports of tuna from Mexico violated GATT rules. The ban was imposed because the Mexican tuna fleet's "incidental" kill rate for dolphins during tuna harvesting was higher than that permitted under the U.S. Marine

Mammal Protection Act. The Act also regulates the U.S. tuna fleet's dolphin kill rate.

The GATT panel ruled that the U.S. could not restrict tuna imports based on harvesting methods as long as the methods did not affect the product itself. It also ruled that the ban could not be justified under GATT provisions that allow import restrictions for the purpose of protecting "human, animal, or plant life or health" or to conserve exhaustible resources, because those provisions apply only to protecting life or health and conserving resources within the jurisdiction of the importing country.

The panel's report, which has not yet been adopted by the GATT Council, is very troubling to environmentalists, who are concerned that governments will be deprived of the use of trade restrictions to protect the regional and global environment. While in some cases alternatives may be available, such as assisting the exporting country in changing its production process, lifting the threat of trade restrictions may reduce the effectiveness of these alternatives. The question arises: Should countries be pressured by GATT rules to become part of the problem by providing a market for products made in an environmentally harmful way?

An important factor in the dispute is whether the environmental impacts of the production process are confined to the exporting country or whether they also affect other countries (especially the importing country) or the global commons. Also important is whether the

country imposing the import restriction acts unilaterally, based on its domestic environmental laws, or whether it acts pursuant to an international agreement. In the tuna-dolphin case, the U.S. action was unilateral and was directed at harm to the global commons.

Developing countries, in particular, have characterized the unilateral use of trade restrictions to address the environmental impacts of production processes as "eco-imperialism" and a violation of their sovereignty. In general, countries are more receptive to the use of trade restrictions in connection with international environmental agreements, such as the Montreal Protocol on Substances that Deplete the Ozone Layer. However, it may not always be possible to negotiate an effective international environmental agreement.

The World Bank estimates that a 50-percent reduction in agricultural and industrial trade barriers erected by the developed countries would increase developing countries' annual export earnings by \$50 billion, which approximately equals the value of official development assistance provided by the developed countries. If concluded successfully, the Uruguay Round of GATT negotiations, discussed below, may significantly increase developing countries' export earnings by reducing such trade barriers, or protectionism.

Under GATT rules, countries are supposed to treat imported products "no less favorably" than comparable goods produced domestically. However, developing countries are con-

(Cough manages trade and environment issues and the OECD portfolio for EPA's Office of International Activities.)



Aluminum ingots being loaded in Ghana. Developing countries have called the unilateral use of trade restrictions for environmental reasons "eco-imperialism."

World Bank photo.

cerned that some ostensibly environmental standards may actually be "green" protectionism—standards designed to favor domestic producers over foreign competitors.

The Draft Final Act of the Uruguay Round of the GATT contains new rules on the use of technical regulations and standards. These new rules would cover, for example, environment, health, and safety regulations pertaining to agricultural products, chemicals, and motor vehicles. The rules would require countries to use the least trade-restrictive means for achieving environmental objectives and, in most cases, to use relevant international standards instead of national ones. Environmentalists fear that international standards will become a ceiling rather than a floor, and will exert downward pressure on the environmental standards of developed countries. They are also concerned that a least trade-restrictive rule could be interpreted narrowly by GATT dispute panels, threatening domestic regulatory regimes.

Both developed and developing countries are concerned about the risks posed by international trade in hazardous wastes. This trade is addressed, in part, by the Basel Convention on the Control of Transboundary Movement of Hazardous Wastes and Their Disposal. The convention came into force in 1992, but has yet to be ratified by the United States.

Trade liberalization makes it more likely that comparable goods produced under different environmental conditions will compete directly for market share. Environmentalists are concerned that trade liberalization may encourage countries to set low levels of environmental protection—not only standards, but their enforcement—to reduce production costs and encourage foreign investment. This, in turn, may force other countries to lower their environmental standards to maintain the competitiveness of their exports.

For most environmental problems, the evidence indicates that environmental expenditures have a minor impact on international competitiveness. However, the impact of, say, a large carbon tax to reduce greenhouse gas emissions could be very significant if imposed by some countries and not by others.

Some suggest that countries with stringent environmental standards (primarily developed countries) should impose duties on imports from countries with not so stringent standards (primarily developing countries) to compensate for differences in expenditures on environmental protection. Should countries of the North and South have comparable standards to protect the environment, health, and safety? Sustainable development means, among other things, remaining

"within the carrying capacity of supporting ecosystems"; carrying capacity varies from country to country, depending on climate, geography, and other factors, and ecosystems may span national boundaries. Countries also differ in the resources they have available for environmental protection and the priority they assign it compared to, say, improved nutrition. Should a distinction be made between standards that protect environmental carrying capacity, which varies from country to country, and standards that protect human health and safety?

The GATT came into force in 1948; it now has 107 "contracting parties," a majority of them developing countries. The GATT recognizes the urgency of raising the living standards of developing countries and of the "progressive development" of their economies. It promotes increased market access under favorable conditions for their processed and manufactured products. It asks contracting parties to expand trade with developing countries by harmonizing and adjusting "national policies and regulations ... [and] technical and commercial standards affecting production."

The Uruguay Round of GATT negotiations has been underway since 1986. A "Draft Final Act Embodying the Results of the Uruguay Round" has been prepared, but has not yet been agreed upon. If concluded successfully, the

Trade and the Rio Declaration

"States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental and developmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction." (Principle 2)

"States should cooperate to promote a supportive and open international economic system that would lead to economic growth and

sustainable development in all countries, to better address the problems of environmental degradation. Trade policy measures for environmental purposes should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade." (excerpt from Principle 12)

"States should effectively cooperate to discourage or prevent the relocation and transfer to other States of any activities and substances that cause severe environmental degradation or are found to be harmful to human health." (Principle 14)

Uruguay Round may improve market access for developing countries in such areas as natural resource-based products, tropical products, agriculture, and textiles and clothing.

The North American Free Trade Agreement (NAFTA) between Mexico, the United States, and Canada was signed in December 1992 but has not yet been ratified by Congress. An environmental review of the draft agreement was performed by the United States (with EPA participation) and utilized in negotiations. NAFTA provides that obligations of international environmental agreements on stratospheric ozone depletion, hazardous wastes, and endangered species take precedence over NAFTA obligations, subject to certain conditions.

Promotion of sustainable development is one of the NAFTA's stated purposes. The NAFTA confirms that each country may set standards to achieve the level of environmental protection it deems appropriate. It discourages countries from relaxing environmental standards in order to attract investment. Important environmental issues not addressed in the NAFTA itself are being taken up in parallel and follow-up mechanisms, which include a pollution control program for the U.S.-Mexico border, a North American commission on the environment, and bilateral environmental agreements.

A number of options for reconciling trade and environmental interests are

being studied and tested. The NAFTA and the parallel and follow-up mechanisms may offer a practical model for pursuing more open trade in concert with environmental protection. UNCTAD is developing case studies on trade-environment linkages in Brazil, Colombia, India, the Philippines, and Turkey and is examining the environmental impact of producing and processing commodities such as cocoa, coffee, and rice. The GATT's Working Group on Environmental Measures and International Trade is investigating the trade impacts of environmental regulations for product packaging and labeling, an issue of particular concern to developing countries. An OECD working group is developing guidelines for improving the compatibility of trade and environmental policies.

An especially promising option is for countries to conduct environmental reviews of trade agreements and trade reviews of environmental agreements as a standard procedure. Such reviews, conducted early in the negotiating process, should help reveal the environmental and economic implications of these agreements and foster public comment and debate on the issues that are revealed.

As to environmental risks from traded products, it has been suggested that countries adopt international environment, health, and safety standards. However, such standards, where they exist, may not provide an acceptable level of protection for countries that

now have stringent domestic standards. One way to reduce trade barriers posed by product standards is to expand international cooperation on product risk assessment and testing, perhaps using as a model the OECD's cooperative program of investigation on chemicals and pesticides. This approach might or might not lead to a larger and more acceptable set of international environmental standards, but it would make it easier to distinguish between legitimate standards and "green" protectionism.

With respect to environmental risks from production processes, one alternative to trade restrictions is international cooperation on environmental labeling of traded products to reflect their life-cycle environmental impact, and thus influence consumer choice. Another option is to provide training and financial/technical assistance to exporting countries to help them change processes that cause environmental harm. Promotion of trade in environmentally cleaner technologies deserves special attention, as does encouraging multinational corporations to apply their home country standards (if they are more stringent) to their operations in developing countries. As mentioned earlier, these options may work best if trade restrictions are available as a backup.

Finally, countries of the North and South could take concrete steps "to promote the internalization of environmental costs" in the prices of traded products, in keeping with Principle 16 of the Rio Declaration. Progress toward this goal would be a useful measure of the extent to which expanded trade contributes to sustainable development. ■

Additional information:

On the policy intersect between trade and environment, EPA's National Advisory Council for Environmental Policy and Technology (NACEPT) has published The Greening of World Trade (March 1993), a 240-page report representing work carried out by the advisory group over a two-year period. It provides an overview of the policy issue through 12 in-depth technical supporting papers and recommendations of the Committee to EPA. Copies are available for sale for \$14.00 from the Government Printing Office, Superintendent of Documents, Washington, DC 20402, GPO Order #055-000-00425-1; (202) 783-3238.

Stopping the Waste

Technology itself is not the problem

by William A. Nitze

The goal of sustainable development is to pass on to future generations a stock of environmental amenities (clean air, clean water, top soil, natural ecosystems) at least as good as the stock we now have. To have any hope of achieving that goal, we must reduce the amount of pollution and resource depletion per unit of income at a rate sufficient to offset future growth in world population and in per capita income. World population growth will probably decline only gradually from its current level of 1.7 percent per year. Average world per capita income should grow by at least 2 percent per year if we are to make progress in reducing poverty and the gap between rich and poor. Therefore, we will have to reduce the average amount of pollution and natural resource depletion per unit of income by 3.5 to 4 percent per year.

This rate of improvement is daunting; it is greater than that achieved by the United States, Japan, or any other country in the past. It is potentially achievable in the future, however, for three reasons.

First, rapid technology development is enabling us to decouple economic growth from pollution and natural resource depletion. In the energy sector, for example, the United States and other Organization for Economic Cooperation and Development (OECD) countries achieved substantial economic growth during the high energy price years of 1973 to 1986, with little if any growth in primary energy consumption. Renewed incentives for greater efficiency and

(Nitze is President of the Alliance to Save Energy.)

further development of renewables and other less polluting energy sources give us the potential rapidly to reduce energy-related pollution per unit of income in rich and poor countries alike.

Second, much of the pollution and natural resource depletion associated with current economic activity around the world results from wasteful technologies and practices that could be corrected cost effectively using currently available technologies. China has been reducing its energy intensity of production by 3 percent per year since the mid-1980s through price reform and investment in co-generation and other energy efficient technologies. Brazil has reduced its deforestation rate by eliminating certain subsidies for clearing land in the Amazon. Russia has an almost limitless inventory of energy conservation, pollution prevention, and industrial modernization projects with high rates of return and short paybacks.

Third, the richer industrialized countries are already moving in the direction of more service-oriented, less resource- and pollution-intensive economies, and a number of developing countries are beginning to follow. Information processing and telecommunications are inherently less polluting and resource intensive than steel or paper manufacturing; pharmaceuticals use fewer resources and produce less pollution per unit of value added than basic chemicals. In this respect, the differences between the economic structures of the OECD countries and those of the more prosperous segments of developing countries such as Brazil, China, India, and Mexico are already narrowing.

These trends must be accelerated, however, if we are to achieve the necessary rate of improvement in the ratio of pollution and natural resource depletion per unit of income necessary for sustainable development. This acceleration will in turn require much more rapid dispersion of less polluting and resource intensive technologies among and within countries. The operative term here is technology cooperation, which may be defined as the combination of actions required to achieve this dispersion. Before discussing these actions, it is important to address two possible misconceptions about technology cooperation.

First, technology cooperation might be considered as primarily concerned with technology. It is not. The keys to technology cooperation lie in human education, motivation, and organization and in access to financial resources, not in technologies themselves. If the city, company, association, or other group of people directly involved in using technologies to achieve their objectives are properly educated, motivated, and organized and have access to capital, they will be able to get their hands on the technologies required.

To make this happen, information, decision-making power, and access to financial resources must be pushed as far down into the system as possible. We will have to find ways to spread the more horizontal, participatory, team-oriented, and fluid management structures being adopted by many successful corporations to governments, nongovernmental organizations (NGOs), and other institutions around the world.

The second misperception is that



An Ethiopian woman waters trees planted to form a windbreak as part of a land conservation and irrigation project. The challenge is to make the right low- or high-technology solution available where it is needed.

Ray Wiflin photo. World Bank.

technology cooperation is primarily a North-South or West-East process. This is true in only one limited respect. The improvements in education, motivation, and organization suggested above will require some initial "pump-priming" investments by the OECD countries, the World Bank, the Global Environment Facility, and other development institutions. Otherwise it is untrue. Many of the technologies and methods that must be dispersed already exist or are being developed in the South. Most of the financial resources required will have to be generated internally.

Many OECD countries face a challenge in internal technology dispersion similar to that faced by the developing and Eastern European countries. Western governmental and nongovernmental organizations have almost as much work to do in organizing for change as their developing country or Eastern European counterparts. The successful "Waste Reduction Always Pays" program developed in Dow U.S.A.'s Louisiana Division has still not been adopted by the Texas Division; the United States and Western Europe are experiencing the same political resistance to internalizing pollution and resource-depletion costs

through subsidy elimination, taxes, and fees as the developing countries.

Based on the above discussion, there are four critical elements in a successful technology cooperation strategy:

We must act as laboratories in discovering what does and does not work.

- **Start at Home.** The United States and other OECD countries will have little credibility in helping developing or Eastern European countries deploy environmentally sustainable technologies and methods if we are unwilling or unable to adopt them at home. If OECD governments do not develop more effective means of "taming the automobile" through alternative fuels, green cars, improved public transportation, congestion pricing, and land-use plan-

ning changes, developing countries are unlikely to do so.

Similarly, if OECD companies do not develop and implement comprehensive "eco-efficiency" programs and extend those programs to their overseas affiliates, companies in non-OECD countries are unlikely to make the necessary changes in their own management procedures. We must act as laboratories in discovering what does and does not work. When experiments such as demand-side management—utilities' consideration of energy efficiency as a resource to be evaluated equally with traditional energy supply options—or EPA's green programs are successful, we should promote their spread to other countries.

- **Get the Market Signals Right.** The most powerful catalyst for deployment of environmentally sustainable technologies is market signals. When oil prices were high in the late 1970s and early 1980s, people invested in energy efficiency. When oil prices collapsed in 1986, that investment slacked off. In countries where strict environmental regulations make the discharge of toxic chemicals into the environment expensive, polluters invest significant re-

sources in pollution prevention and waste minimization. In countries where those regulations do not exist or are not enforced, that investment is small or nonexistent. Once again the United States and other OECD countries must take the lead if we expect governments of developing countries to overcome political resistance to internalizing the costs of pollution and resource depletion in their own countries.

• **Focus on Infrastructure Development.**

The history of development assistance since 1945 suggests that donor governments and international development institutions are not necessarily very good at picking specific technologies, but can be effective in helping build the local infrastructures needed to develop and deploy those technologies. An outstanding historical example is the Consultative Group on International Agricultural Research (CGIAR), which helped spread the green revolution throughout the developing world and led to the creation of the International Rice Research Institute and other institutions doing research on sustainable agriculture. CGIAR is serving as a model for the Global Change System for Analysis, Research, and Training (START), which proposes to create a network of centers for global change research and training throughout the developing world. Both of these initiatives were created by NGOs and only later supported by governments, suggesting that governments should rely heavily on the private sector in building the infrastructure required.

• **Create Financial Leverage.** Financing is one of the most critical elements in technology cooperation. Fortunately for overstretched OECD budgets, the constraint on financing technology transfer is not availability of money per se. Public and private investors in Asia, Latin America, and Eastern Europe are already budgeting hundreds of billions of dollars on energy and other development projects. The World Bank and other development institutions have tens of billions of uncommitted project funds. There are large pools of private capital available for investment in the developing world and Eastern Europe. The real constraint is a shortage of well designed and managed projects that combine environmental sustainability, high rates



"I'm beginning to think I need a three-million-year sabbatical from humankind to recover my health."

Drawing by Dedini; copyright 1992, The New Yorker Magazine, Inc.

of return, and acceptable levels of legal and political risk. In the case of renewable energy, agricultural, and other small-scale local projects, there is also a need for intermediaries that can aggregate a number of projects into a package sufficiently large to attract funds from larger institutions.

Multilateral and bilateral funding sources should use their limited funds to provide an incentive for creating those conditions. The Alliance to Save Energy is starting work on a sustainable cities project, supported by the Agency for International Development, that will attempt to develop collaborative electricity sector projects in several large developing country or Eastern European cities. A collaborative including local government, the local electricity supplier, local and foreign NGOs, and local and foreign companies would jointly develop an integrated resource plan for meeting the city's future electricity needs. As opposed to relying solely on the construction of more power plants at the

lowest possible first cost, this plan would incorporate supply- and demand-side options based on their net full-cycle costs after reflecting environmental impacts. As the plan evolved, it would induce reform of local electricity pricing practices and other innovations.

The good news is that we already have available the technologies, management techniques, and successful models to substantially reduce pollution and natural resources depletion around the world. The bad news is that we are a long way from developing the human infrastructure, incentives, and institutional arrangements necessary to speed up the deployment of those technologies and techniques. Therefore, the key to a successful technology cooperation strategy is to focus our limited resources on building that infrastructure, creating those incentives, and developing those arrangements. ■

Building Coalitions

Africa 2000 offers a model of cooperation

by Linda Starke

People attending the Earth Summit in June 1992 discussed repeatedly the need to build new coalitions as we work toward sustainable development—coalitions, for example, that include the expertise of environmental groups, business, government, academia, and labor unions. While the Rio delegates were talking, the vital work of coalition building was going on in many parts of the world. The Africa 2000 Network is one good example.

Africa 2000 grew out of a June 1986 proposal to support small, community-based initiatives that was made by the Canadian government at the U.N. Special Session on Africa. The Trust Fund for \$25 million that was subsequently established has received contributions so far totaling \$17 million from the governments of Canada, Denmark, France, Japan, and Norway; it is administered by the U.N. Development Program (UNDP) in New York.

The network was not set up to create new groups to do development work; rather, it supports the activities of existing grassroots groups and nongovernmental organizations (NGOs). Between 1989 and the end of 1992, grants totaling more than \$14 million had been given to over 400 projects in natural forest management, erosion control, water harvesting, range management, watershed management, food preservation and storage, and a host of other

areas. Each grant is for less than \$50,000.

The innovative aspect of this network is its use of national selection committees in each of the 12 countries it operates in to date (Burkina Faso, Burundi, Cameroon, Ghana, Kenya, Lesotho, Mauritania, Rwanda, Senegal, Tanzania, Uganda, and Zimbabwe). These groups bring together individuals from various government agencies, universities, research institutes, U.N. agencies working in the country, and national and regional NGOs. In many cases, the national selection committees provide the only opportunity these people have to work together on their country's pressing environment and development issues. And the members take away from the meetings an appreciation of the importance of building coalitions.

In each of the 12 countries, a full-time national coordinator appointed by UNDP administers the program. He or she responds to requests from local community groups and national NGOs for small grants for projects that both preserve the environment and promote development. The coordinator visits the project site, checking in particular to ensure that the people who are supposed to benefit from the project are involved in its design and execution. Issues to be discussed with the community include the source of water for any agricultural project, the land to be used, who is going to do the actual work, how success of the project is going to be measured, and the role of any NGO from outside the community that might be involved with the project.

Project applications and the

coordinator's field trip notes are reviewed by the national selection committee at regular meetings, sometimes as often as every other month. UNDP in New York provides a set amount to each country every three months, based on recent grants and the coordinator's assessment of need, and it is up to the committee to approve grant applications and decide how much money to award.

Africa 2000's evolution during its first four years more or less parallels the international community's growing understanding of how environmental and economic problems and solutions are inextricably linked. Projects were initially rather narrowly focused, with almost all of them involving tree planting in an effort to ease fuelwood shortages. One of the first country programs to be up and running, for example, was Ghana's. In 1989 and 1990, 28 out of the 35 projects funded were for afforestation or agroforestry, with grants ranging from \$1,077 to \$22,298 (which went to Friends of the Earth in Ghana for work with 25 communities).

National coordinators and selection committees quickly learned, however, that treating in isolation one aspect of communities' environmental problems was a recipe for failure. If people in a community who are struggling to make ends meet see no immediate benefit of tree planting, they are unlikely to help protect and nourish trees that have been planted. This is the basic lesson the world has learned in the last decade: For development to be sustainable, it must meet as many people's needs as possible.

In Africa, this means projects have to

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include income-generating activities, for helping people raise their standard of living through higher incomes is a must. One example of this more holistic approach is found in an Africa 2000 project in Rubuyenge, Rwanda. The communities' immediate problem was reduced availability of food, which led local women to think about cultivating marshlands in the area as other cropland became scarce and as food aid diminished. They sought help through a local NGO, which received a grant of \$18,758 from the network.

These funds were used to drain selected marshlands so that fruit and fuelwood trees could be planted, to translate agricultural guidelines into local languages, and to start a pig-breeding project. This has helped raise incomes in the area, and now the women are considering starting fish-farming and duck-rearing projects.

Similarly, the Chandarema Women's Group in the North Maragoli area of western Kenya has received help from Africa 2000. This local group has been working together on small retail businesses in maize, chicken, fish, and bananas since 1977. They received

\$17,844 from the network in 1991 for a cattle-keeping and conservation project. The members—24 women and eight men—learned not only bookkeeping skills but also fodder management, the proper way to raise calves, the preparation of liquid manure from cow dung, and organic farming. Sweet potato vines and banana trees were planted along with fodder trees for the cattle, so that the land was used as productively as possible. As in Rwanda, the project addressed several of the community's needs at once, increasing its chances of success.

These two projects illustrate the important role accorded to women in the Africa 2000 Network. Their involvement in the network is crucial because women have primary responsibility for providing household food throughout the continent. Yet everyone involved agrees that there is still considerable room for improvement in this area. Women are increasingly active in the daily work of network projects, but they are less involved at the decision-making level in communities and the NGOs that serve them. Women's voices are certainly heard among the national coordinators

(half of whom are women), in the national selection committees, and on an advisory group that works with UNDP on the overall program. But this is less true at the local level, and further efforts are needed to open opportunities for women to suggest, design, and manage grassroots programs.

Another possible area for improvement lies in broadening the network's admirable scope of community participation even further. The only sector of society not included on any selection committees is business, yet the expertise of a local industrialist or a member of the chamber of commerce could surely be helpful as committees consider the feasibility of proposed projects, especially given the network's emphasis on income-generation projects. Nevertheless, as a UNDP review found, "the composition of the committees has contributed to the development of a spirit of partnership and dialogue among the various categories of entities involved in the network."

The Africa 2000 Network is a good illustration of how those lofty concepts heard so often in Rio can work in the real world. ■



Africa 2000 photo.

Facing food shortages, these Rwanda women sought financial aid from Africa 2000 to cultivate fruit and fuelwood trees and other crops in a former marshland.

In the U.S. Interest

A focus on the environment is crucial for America's future national security

by Gareth Porter

In the post-Cold War era, environmental security should be recognized as one of the pillars of U.S. national security, along with military and economic security. The environmental security of the American people—defined in terms of reducing threats from global environmental deterioration—should be integrated more fully into U.S. global policy. Mounting stresses being placed on the Earth's life support systems threaten the well-being of Americans in a number of ways:

- Increases in global temperature expected in the next few decades from increased concentrations of heat-trapping gases in the atmosphere could raise sea levels, causing saltwater intrusion into U.S. water supplies. Global warming could also cause the Midwest to suffer scorching droughts on a regular basis.
- We are confronted with the potential loss of a significant proportion of the world's biological species and a threat to the security of the world food supply from its dependence on relatively few varieties of food crops that are vulnerable to diseases and pests that have developed resistance to pesticides.
- The depletion of the ozone layer increases exposure to ultraviolet radiation, which can weaken the human immune system, damage both food crops and the phytoplankton upon which all marine life ultimately depends, and dramatically increase skin cancers.

The erosion of the environmental security of other countries also affects other U.S. global security, economic, and

(Porter is International Program Director of the Environmental and Energy Study Institute.)

humanitarian interests. The capability of the developing world to produce enough food to feed its population is imperilled by the combination of high population-growth rates and the loss of soil nutrients and soil erosion, which could reduce global food production by as much as 20 to 30 percent within two decades if it is not slowed. Such a global food crisis could create humanitarian crises and political chaos in many more countries.

Deforestation and soil erosion will continue to swell the tide of illegal Mexican immigration into the United States. And wars could break out in the Middle East and elsewhere as a result of conflicts over dwindling water supplies.

The developing countries are crucial to reducing global environmental threats in part because, by early in the next century, they are expected to account for more of the greenhouse gas emissions than the industrialized countries and because they hold 90 percent of the Earth's biological diversity and will be the locus of most of its loss in future decades. Over 90 percent of the world's population growth, moreover, will take place in the developing world. Therefore, supporting sustainable development paths in these countries must be an integral element of a U.S. environmental security strategy.

U.S. policies toward developing countries should be explicitly oriented toward the goal of North-South partnerships for sustainable development. The United States should offer, in concert with other industrialized countries, to reduce inequities in trade and financial relations and to provide appropriate financial and technical assistance to developing countries in return for their commitments to more sustainable development policies and participation

in global efforts to reduce environmental threats.

A strategy for North-South environmental security cooperation should include the following elements:

- Reorientation of U.S. bilateral environmental assistance to sustainable development
- The reform of multilateral financial institutions
- New initiatives in U.S. debt and trade policies
- U.S. leadership in making global environmental agreements effective

Most foreign policy professionals and members of Congress continue to think of any foreign assistance that does not serve U.S. short-term political-military or economic interests as "international welfare." Not so. U.S. overseas development assistance (ODA) policy should be based on the premise that it serves the mutual interest of both parties in global environmental security. Developing countries need greater capacity to implement natural resources management plans and programs to reduce the stresses on their natural resources related to poverty and powerlessness. U.S. development assistance should focus increasingly on these sustainable development objectives. And the United States, which is now next to last among donor countries in percentage of gross national product devoted to ODA, should commit itself to the target of doubling the amount of its assistance by the year 2000 if recipient countries demonstrate serious commitment to sustainable development goals.

Making the World Bank and the International Monetary Fund (IMF) more

responsive to the needs of sustainable development is the most important means of altering global development patterns. The World Bank has ignored the potential of integrated resource planning (IRP) to maximize energy efficiency in developing countries, and too little of the Bank's lending—including lending by its International Development Association arm for the least developed countries—goes explicitly for poverty alleviation. The United States should press for a new World Bank policy for sector lending in energy, power, and transportation that has as its ultimate goal basing all loans for these sectors on long-term national plans that employ least-cost, demand-side planning. And the United States should support a global goal of 50 percent of all project lending going for poverty alleviation beginning in fiscal year 1995.

Few would question the need for economic stabilization and reform in heavily indebted countries, but the narrow, short-term perspective of the IMF's conditions for structural adjustment sometimes conflicts with the needs of environmental sustainability. While some IMF conditions, such as reducing agricultural input and energy subsidies, are clearly supportive of sustainable development, others—such as exchange rate devaluation and import liberalization—may or may not promote environmental sustainability, depending on the circumstances. The environmental security of the United States will not be protected if developing countries are able to service their debts but continue to destroy their natural assets in the process. The United States should call for the IMF to develop the expertise on social and environmental issues needed to analyze the linkages between adjustment policies, poverty, and environmental degradation. It should seek an IMF mandate to adopt explicit poverty alleviation and human resource development goals as conditions for loans.

U.S. policies toward North-South trade and financial relations should reflect their impacts on the ability and willingness of developing countries to manage their natural resources sustainably. A sharp decline in commodity prices (46 percent for a weighted index of 33 primary product exports), heavy debt burdens, and industrialized



Wide World photo

Hunger in Somalia. Unless current trends in population growth and natural resource depletion are reversed, the world may see more famines like those that have swept through Somalia and Ethiopia.

country protectionism (which alone cost developing countries the equivalent of 3 percent of their collective gross national product each year) have deprived developing countries of large amounts of income. These inequities in North-South trade tend to force developing countries to export more of their natural resources in order to maintain the same level of imports. They create a powerful incentive for these countries to cut down more forests and convert more land from subsistence agriculture to export crops, often pushing farmers into forests and marginal lands.

The United States should insist that the GATT Uruguay Round not only dismantle most barriers to developing country exports but also eliminate the

practice of increasing the tariffs on processed goods in direct proportion to the degree of processing. And the United States should support the "Trinidad Terms" for bilateral debt reduction for the poorest countries by the Paris Club of creditor nations—reducing the debtor country's debt by two-thirds and rescheduling the remaining one-third according to the country's ability to pay. The ultimate goal of U.S. policy, however, should be complete forgiveness of the bilateral debt of those heavily indebted, low-income countries that would still have unsustainable debts even after the enactment of the Trinidad Terms.

If the climate and biodiversity conventions are to be effective in

reducing the threats of global warming and biodiversity loss, key developing countries will have to be persuaded to make significant commitments to limiting greenhouse gas emissions and to conserving biological resources, based on a series of unprecedented North-South bargains. Instead of counting on multi-lateral conference diplomacy to arrive at such bargains, the United States should take the lead in reaching substantive understandings with these major developing countries. Working groups should be organized by the National Security Council staff to develop detailed proposals for ultimate presentation to the key developing countries. These proposals, based on consultations with

the relevant agencies of the developing country and with other donor countries, must offer significant benefits to the country in return for agreement to specific actions to enhance global environmental security.

In the case of the climate change convention, for example, any agreement by industrialized countries to reduce or even stabilize greenhouse gas emissions will be nullified by the growth of Chinese emissions over the next 30 years unless China agrees to a major effort to control its emissions. There is scope for a win-win solution to the problem, however, because of the extreme energy inefficiency of the Chinese economy. China might agree to adopt a national

plan for holding its emissions to an agreed-upon level if the industrialized countries pledge a major new program of loans for the purchase of energy efficient coal conversion and industrial technologies. To convince skeptical Chinese officials that such a bargain is in China's interests, however, a final proposal would have to include the results of a detailed feasibility study, carried out with the participation of Chinese energy experts and financed by the industrialized countries. ■

About Our Contributors

Dear *EPA Journal*:

I have been struggling to inform myself about recycling and related environmental matters. I recently discovered the EPA Region 1 Library, the best I have found yet.

I enjoyed reading your July/August 1992 issue on recycling. However, I am very frustrated that you do not publish mailing addresses for the authors and organizations mentioned. I have wasted a great deal of time trying to locate this information!

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Thank you for the good idea. From now on, EPA Journal will publish information about how to contact our contributors:

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TO THE PEOPLE of Namibia, living with little rainfall is a fact of life. The nation, on the southwest coast of Africa, has the driest climate on the continent and, in 1992, suffered through its worst drought in a quarter of a century.

W. Luckmann, a Namibian poet and teacher, writes that the following poem "was inspired one day when, during our school holidays, I was driving to the coast and saw how numerous cattle were led by herdsmen along the road. Apparently, that was the only grazing left on some drought-stricken farms. As I teach a lot of farmers' children, my mind couldn't help turning back to many hot days when we discussed poems about rain."

Children Yearn for Rain

The sun smears itself again
across dusty classroom panes
and the many looks of children
crowd open and droughty doorways.

Their books huddle them in bondage
but their minds cannot hold or sort the written word.
The teacher scans another poem
from his book-colored hoard
His words only border and skirt
minds drawn back home:

to cattle that silently tread
along sparse roadside curbs;
to fathers that ponder
how a drought can hold quiet title
to their land;
to seasons that come as they go,
leaving dry imprints on family land.

Today's poem describes:
the hissing soles of motor-cars
the sliding, skipping of schoolboys' shoes
the first rains
that pat the tops of flowers like children's heads

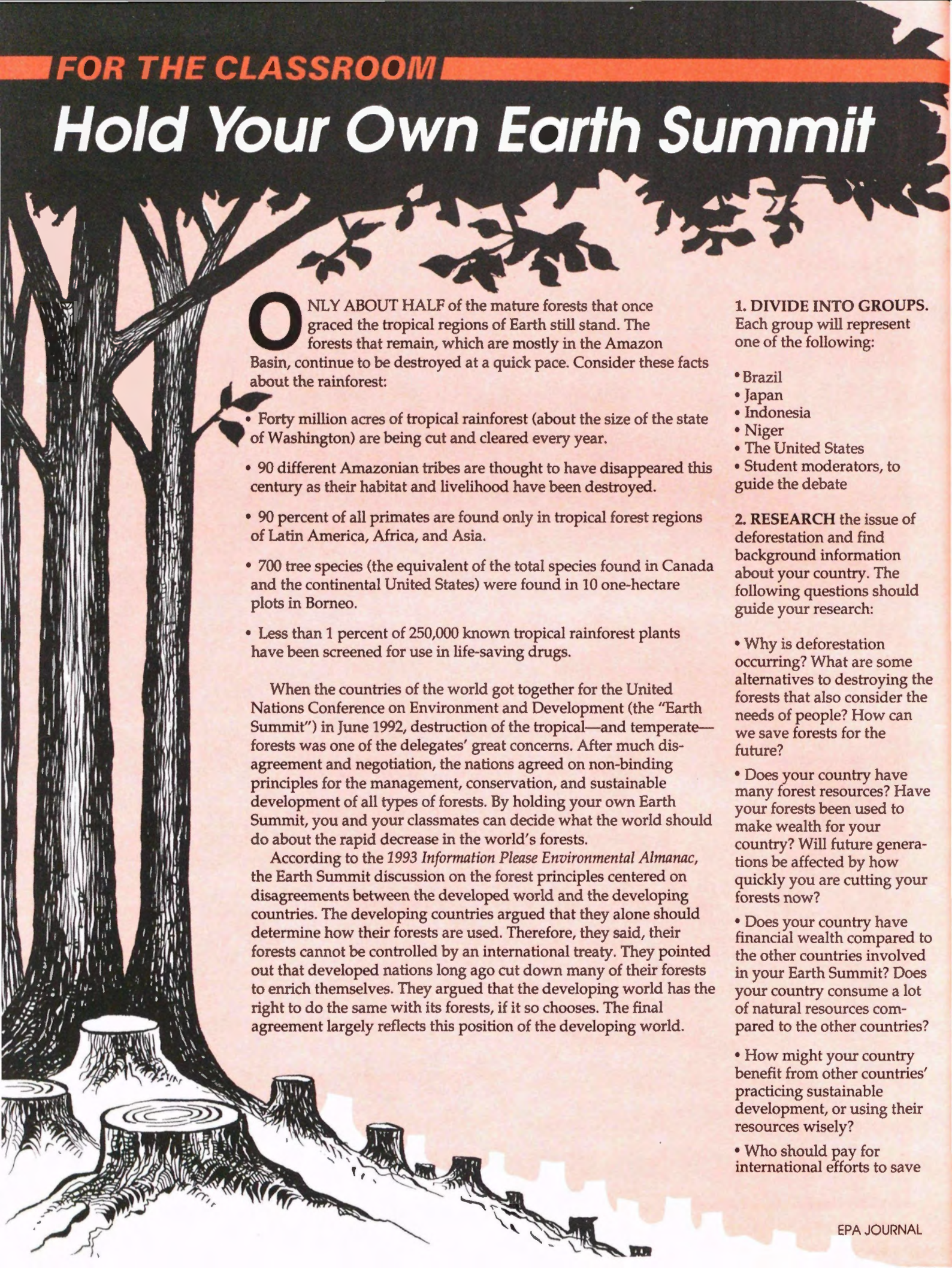
And the children
like backward seedlings yearn for rain
to turn with thrusting fingers
the dusty pages of another summer season.

—W. Luckmann

(The writings of Luckmann and other Southern African writers are featured in The Kalahari Review, 4000 Cathedral Ave., NW, #138B, Washington, DC 20016.)



Hold Your Own Earth Summit



ONLY ABOUT HALF of the mature forests that once graced the tropical regions of Earth still stand. The forests that remain, which are mostly in the Amazon Basin, continue to be destroyed at a quick pace. Consider these facts about the rainforest:

- Forty million acres of tropical rainforest (about the size of the state of Washington) are being cut and cleared every year.
- 90 different Amazonian tribes are thought to have disappeared this century as their habitat and livelihood have been destroyed.
- 90 percent of all primates are found only in tropical forest regions of Latin America, Africa, and Asia.
- 700 tree species (the equivalent of the total species found in Canada and the continental United States) were found in 10 one-hectare plots in Borneo.
- Less than 1 percent of 250,000 known tropical rainforest plants have been screened for use in life-saving drugs.

When the countries of the world got together for the United Nations Conference on Environment and Development (the "Earth Summit") in June 1992, destruction of the tropical—and temperate—forests was one of the delegates' great concerns. After much disagreement and negotiation, the nations agreed on non-binding principles for the management, conservation, and sustainable development of all types of forests. By holding your own Earth Summit, you and your classmates can decide what the world should do about the rapid decrease in the world's forests.

According to the *1993 Information Please Environmental Almanac*, the Earth Summit discussion on the forest principles centered on disagreements between the developed world and the developing countries. The developing countries argued that they alone should determine how their forests are used. Therefore, they said, their forests cannot be controlled by an international treaty. They pointed out that developed nations long ago cut down many of their forests to enrich themselves. They argued that the developing world has the right to do the same with its forests, if it so chooses. The final agreement largely reflects this position of the developing world.

1. DIVIDE INTO GROUPS. Each group will represent one of the following:

- Brazil
- Japan
- Indonesia
- Niger
- The United States
- Student moderators, to guide the debate

2. RESEARCH the issue of deforestation and find background information about your country. The following questions should guide your research:

- Why is deforestation occurring? What are some alternatives to destroying the forests that also consider the needs of people? How can we save forests for the future?
- Does your country have many forest resources? Have your forests been used to make wealth for your country? Will future generations be affected by how quickly you are cutting your forests now?
- Does your country have financial wealth compared to the other countries involved in your Earth Summit? Does your country consume a lot of natural resources compared to the other countries?
- How might your country benefit from other countries' practicing sustainable development, or using their resources wisely?
- Who should pay for international efforts to save

the forests? Can your country afford to contribute much toward worldwide sustainable development efforts? Should the money that all the countries contribute go into a fund controlled equally by everyone, despite how much each individual country pays? Or should the countries that pay the most have the most control over how the funds are spent?

• Should each country have the right to decide on its own how to use its rainforest resources? Why or why not?

Note: Moderators should focus their research on deforestation and identify potential solutions to slow it.

3. WRITE A SHORT PROPOSAL to debate at your Earth Summit. Write about: What should the world do to work toward conserving forest resources? Who should pay for those efforts? What should your country do?

Your proposal should benefit your country economically and protect your country's forests. However, keep in mind that the proposal should help all other countries work toward conserving the world's resources.

4. HOLD YOUR EARTH SUMMIT. Moderators should review the finished proposals before the Earth Summit, listing questions to ask the presenters and identifying differences and

potential areas of compromise within the proposals.

A representative from each country should have five minutes to present her or his group's proposal. Moderators and representatives from the other countries should have the opportunity to ask questions after each presentation. Moderators should then consider the proposals and their own research, and come up with a compromise proposal. The compromise should be presented to the other students for their reaction and debate. Students should debate in the spirit of compromise and with the understanding that some agreement is necessary to conserve the world's forests.

Extensions:

1. Organize an environmental "Town Summit" for your community. Develop a list of environmental concerns you have about your community. Then list the diverse groups within your community, such as businesses and minority groups, that might have different perspectives on your concerns. Actual representatives from the community should be contacted for their views and perhaps invited to the Town Summit.
2. Organize an environmental "School Summit" or "School District Summit." Identify which environmental issues are most important to your fellow students and

then hold the Summit to decide what to do to improve the environment around your school. Examples: Study which hazardous substances are used in your school and investigate whether there are alternatives to those substances. Or examine your school's waste stream and identify ways to reduce it. Prepare a checklist for your local school board highlighting the environmental concerns you have about your school, or visit a school board meeting to make your views known.

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- Russell E. Train, "A Call for Sustainability," *EPA Journal*, Vol. 18, No. 4, pp. 7-10, Sept./Oct. 1992.

(Teacher Ron Monson provided valuable input in developing this lesson plan. For more ideas on presenting forestry issues to students, contact Monson at Minnehaha Academy, 3107 47th Ave. S., Minneapolis, MN, 55406.) ■

To the Teacher: Objectives of this activity are:
1. To examine the issue of rainforest destruction and possible efforts to slow that destruction;
2. To become aware of the variation in environmental and economic resources that exists between various countries; and 3. To analyze the different positions the countries might take on forestry issues, to defend or refute those positions, then to synthesize new principles by which nations can agree to support sustainable development efforts.

Teachers should use discretion in choosing moderators for this lesson plan. They should help moderators look for areas of agreement among the various proposals and be prepared to ask questions of the presenters.



Sussman

Robert M. Sussman is EPA's new Deputy Administrator. He is an expert in federal environmental law, with nationally recognized expertise in the Toxic Substances Control Act (TSCA) and other statutes that EPA administers. He was the principal drafter of two regulations under TSCA that developed from negotiations between environmental groups, EPA, and the chemical industry.

Sussman's experience includes extensive litigation in the federal courts. He has argued two cases before the Supreme Court and has appeared before nearly all of the U.S. Courts of Appeals.

Sussman comes to EPA from the law firm of Latham and Watkins, where he has been a partner since 1987. There he established an environmental group that grew to include 10 attorneys. Previously he was an attorney with the Washington, DC, law firm of Covington and Burling; he joined the firm in 1974 and became a partner in 1981. From 1973 to 1974, he was a law clerk to the Honorable Walter K. Stapleton, a U.S. District Judge for the District of Delaware.

The new Deputy Administrator is the author of several articles concerning the activities of EPA, the Consumer Product Safety Commission, the Occupa-



Gardiner

tional Safety and Health Administration, and the Food and Drug Administration. He is currently co-authoring a book for the Environmental Law Institute on TSCA and the Federal Insecticide, Fungicide, and Rodenticide Act.

Sussman earned a B.A. degree in English from Yale University, graduating magna cum laude in 1969. In 1973, he graduated from Yale Law School, where he was editor of the school's law journal.

David Gardiner has been named Assistant Administrator for Policy, Planning and Evaluation.

Gardiner was Legislative Director of the Sierra Club since 1983. In that position, he directed all of the Sierra Club's lobbying in Washington, DC, on legislative and administrative matters. These involved air and water pollution, toxic waste cleanup, wilderness and the protection of public lands, global warming and energy policy, and international environmental issues. Besides managing the Sierra Club's Political Litigation and Media programs, Gardiner directed policy and strategy development, communications, and research.

In 1981, Gardiner was the Sierra Club's Washington Representative. He directed



Herman

the congressional lobbying campaign on the Clean Air Act and acid rain. From 1978 until 1981, he served as Clean Air Coordinator of the Sierra Club, where he directed a nationwide effort to educate citizens about the Clean Air Act and encourage participation in the states' clean air planning process.

He has been a board member for the League of Conservation Voters since 1989. There he endorsed senatorial and congressional candidates, established the league's substantive agenda, and developed the league's annual Environmental Scorecard.

He graduated from Harvard College with a B.A. degree in History in 1977.

Steven A. Herman has been appointed Assistant Administrator for Enforcement, a position in which he acts as primary advisor to the Administrator on criminal and civil enforcement activities.

Herman previously served, from 1984 until his recent EPA appointment, as Assistant Section Chief of General Litigation in the Environmental and Natural Resources Division at the Department of Justice. There he supervised complex and often controversial environmental litigation while representing the government in environmental and

natural resource cases arising from federal statutes and the Constitution.

From 1979 to 1984 as team leader of the General Litigation Section, he supervised lawyers conducting environmental and Fifth Amendment takings cases. Before that he served as a trial attorney for the section (1978-1979).

As Staff Counsel for the Criminal Appeals Bureau of the New York City Legal Aid Society, he briefed and argued criminal appellate cases. From 1972 to 1976 he was Staff Counsel for the society's Prisoner's Rights Project and responsible for federal constitutional litigation over conditions in state and local prisons and jails.

Herman also worked as counsel at the Pulaski County, Little Rock, Arkansas, Legal Aid Bureau (1970 to 1972), where he counseled community groups and government officials on school problems, welfare, and public housing policies.

He received his B.A. degree from Rutgers University in 1966 and a J.D. degree from Rutgers Law School in 1969.

Robert W. Hickmott has been appointed as the new Associate Administrator for the Office of Congressional and Legislative Affairs. In this position he serves as the



Hickmott

principal advisor to the Administrator on all congressional and legislative activities.

Before joining EPA, Hickmott was Deputy Executive Director for the Democratic Senatorial Campaign. From 1989 to 1991 he was an Associate with the law firm of Skadden, Arps, Slate Meagher and Flom. From 1987 to 1989, Hickmott was Chief of Staff for Senator Timothy E. Wirth, and from 1985 to 1987 he was National Finance Director for the Wirth for Senate Campaign.

He has also held positions as Political Affairs Director for the Congoleum Corporation, 1983 to 1984; Executive Director, National Business Council, Democratic National Committee, 1980 to 1983; Public Affairs Counsel, E.I. duPont Company, 1978 to 1981, and Director of the Alumni/Admissions Programs of Boston University's Alumni Affairs Office, 1976 to 1978.

Hickmott graduated summa cum laude from Boston University's School of Public Communications with a B.S. in public communications in 1976. He received his J.D. from Georgetown University Law Center in 1988.

Loretta M. Ucelli is the new Associate Administrator for the Office of Communica-



Ucelli

tions, Education, and Public Affairs.

Her background in communications includes managing communications and media relations for the National Abortion Rights Action League (NARAL) where she served as Director of Communications from 1989 to 1992. At NARAL, she developed substantive message strategy, supervised press operations, served as spokesperson, and implemented a national communications plan and message strategy through the national media and state-level grassroots affiliates.

In 1988, she worked as coordinator of special events for the Dukakis/Bentsen Campaign, devising and managing media arrangements for the presidential and vice-presidential debates and town meetings.

Before that, Ucelli was Vice President of Public Affairs and Communications for the National Association of Broadcasters (1986 to 1988). At NAB, she directed the daily internal and external communications for the association, which represents 940 television and 5,000 radio stations, including all the major networks.

As Director of Communications (1981 to 1986) for the American Federation of Government Employees, AFL-CIO, she promoted union activities with the



Lotis

national and local media, Congress, and the public while serving as editor-in-chief of four union publications. As a member of the federation's senior management team, she established the union's legislative and political goals on issues affecting federal employees.

Other positions held were: Regional Press Secretary, Mondale/Ferraro Campaign (1984); Florida Press Secretary, Carter/Mondale Campaign (1980); News Editor, KDKA Radio, Pittsburgh, Pennsylvania (1979-1980); and Anchor and News Director, WCLG Radio, Morgantown, West Virginia (1977-1979).

In 1976, she graduated from West Virginia University with a B.S. degree in Journalism.

Jon G. Lotis is a new Administrative Law Judge at EPA. He comes to this Agency from the Federal Energy Regulatory Commission.

Judge Lotis is a certified arbitrator on the panel of commercial arbitrators of the American Arbitration Association and also for the American Association of Better Business Bureaus. He also serves as a mediator and mentor for the District of Columbia Mediation Service. He is licensed to practice before the U.S. District Court, U.S. Court of Ap-

peals, and U.S. Supreme Court.

In 1978, Lotis was appointed Administrative Law Judge for the Federal Energy Regulatory Commission. He had responsibility for supervising all attorneys engaged in the trial of oil and gas pipeline rate proceedings.

In 1973, Lotis was appointed Assistant General Counsel for gas pipeline and electric rates, with responsibility for advising the Federal Power Commission on the Natural Gas and Federal Power Acts as they related to regulation of rates, charges, and terms of service for interstate gas pipelines and electric utilities.

From 1968 to 1972, he served as sole counsel for major rate cases and supervised other proceedings at the Federal Power Commission.

He received a B.A. in Business Administration from the University of Pittsburgh in 1963, and a J.D. from George Washington University Law School in 1967. ■

Fire on the Cuyahoga

by Teresa Opheim

The blaze did not last long; the monetary damage was fairly small. Yet the 1969 fire on Ohio's Cuyahoga River ignited a public outcry about the state of the nation's environment and, along with oil spills and "dying" lakes, led to the passage of the major environmental legislation of the early 1970s.

Running through Akron and Cleveland, Ohio, into Lake Erie, the Cuyahoga had been polluted for years. In 1881, the mayor of Cleveland called it "an open sewer through the center of the city." The river had burned twice before, in 1936 and 1952, without much fanfare. But it was the blaze on June 22, 1969, that caught the public's imagination and led many to think, as one local mayor said, "My God, if this is what we can do to our water, then there's got to be a change."

At noon that day, a section of the river covered with oil and debris, just southeast of Cleveland, was ignited by an unknown source. The blaze lasted slightly more than 20 minutes and caused \$50,000 in damages to two wooden railroad bridges.

For Ohioans, the "spiritual damage," as one newspaper put it, was greater. As a result of news accounts and jokes about the absurdity of a river igniting, images of the fiery water resonated throughout the nation. "Tell someone

you're from Cleveland and he'll say: 'Cleveland, eh? Isn't that the place where the river is so polluted, it's a fire hazard?'" the Cleveland *Plain Dealer* editorialized

days after the fire. "It's a funny line—if you don't live in Cleveland."

Twenty-four years later, locals have grown tired of the river's lingering notoriety. Said one city booster recently: "How long do we have to go before we don't have to continually bring up that there was a brief fire on a river 20 years ago? ... I don't read stories about Washington from Washington that constantly mention this was the city where Lincoln was shot."

Today, the water quality in the river's 40-mile stretch between Cleveland and Akron has greatly improved, according to David Stroud of the Ohio Environmental Protection Agency. However, the northern part of the river that serves as a ship channel is dredged annually, and the sediments are still contaminated to such an extent that they must be put into a confined disposal facility. Oxygen levels are still very low, and fish that happen into the section of the river in the Cleveland area could go belly-up in the summer.

The Cuyahoga River has come a long way from the sordid state of affairs of 1969. Today, the banks of the river even run through a festive area of restaurants and shops, an example of urban renewal that experts say is a direct result of improved water quality. However, it is the Cuyahoga's misfortune to be a small river located in the midst of a huge population base and the industrial and municipal waste that's produced as a result. As one state official says, "There will never be a trout stream flowing through downtown Cleveland." ■

(Opheim is Associate Editor of EPA Journal. Information included in this article is taken largely from Cleveland newspaper accounts.)



Blaze on the Cuyahoga, 1969.
The Plain Dealer photo, Cleveland, Ohio

Letters

Growing with Garbage

EPA Journal is having a terrific influence on young people. As an example, my niece, Roberta Davis, recently completed a science fair project entitled "Growing with Garbage." The project was featured in her local newspaper, the *Foster County Independent*. The idea for the project was taken from the *EPA Journal* issue on recycling.

Roberta is 11 years old and just finished the fifth grade at Carrington Elementary School in Carrington, N.D. She lives with her parents and two sisters on a farm. They raise grains, sunflowers, and livestock.

Morris Beaton
Water Quality Branch
EPA Region 5

Watch that Exponent

The inset entitled "What's in a Number" on page 11 of the January/February/March edition of the *EPA Journal* contains a misprint concerning exponents. A certain level of Pollutant X would cause a potential risk of 5×10^{-7} or 5 additional cases of cancer per 10 million people (rather than 100 million). The misprint illustrates how easy it is for regulators like ourselves to get lost in a sea of numbers.

Staff, Ground Water Management Section
EPA, Region 2

Back Cover:

Satellite images from 1974 (top) and 1992 (bottom) show the progressive destruction of Mexican rainforests. Red indicates living vegetation; blue, urban areas or barren landscapes; green, dry natural vegetation; black, wet soils or wetlands; and white, clouds.

These are composite images generated from Landsat Multispectral Scanner (MSS) remote sensor measurements of electromagnetic energy reflected from the Earth's surface. The images were created as part of EPA's North American Landscape Characterization (NALC)/Pathfinder project, in conjunction with a global effort led by NASA to monitor the status of tropical rainforests around the world. NALC is funded by EPA's Office of Research and Development as a component of the Agency's Global Change Research Program. The program is being conducted by the Environmental Monitoring Systems Laboratory, Las Vegas, Nevada.

Images provided by USGS EROS Data Center.



Satellite photos reveal progressive rainforest destruction (see inside back cover).

