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Environment matters


Annual Review

AT THE WORLD BANK

20104
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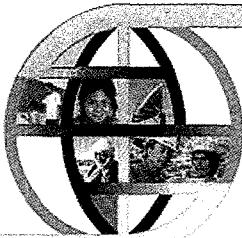
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(from President James D. Wolfensohn's address to the United Nations Special Session "Towards Global Sustainability", June 29th 1997)


"Addressing desertification is essential for poverty reduction and food security in developing countries"

THE WORLD BANK AND THE GLOBAL ENVIRONMENT

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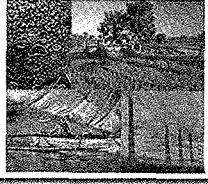
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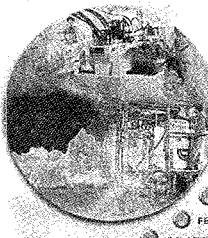
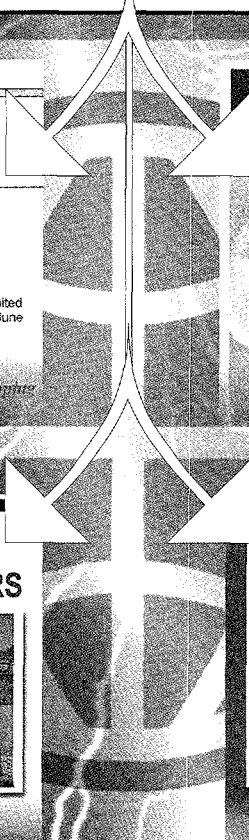
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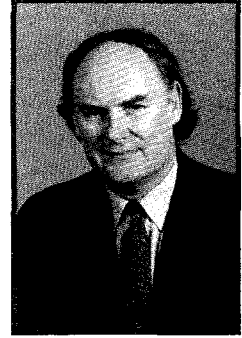
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Letter from the Vice President Environmentally and Socially Sustainable Development



As the world's attention span gets shorter, the World Bank faces the difficult challenge of trying to get people to think longer-term about the many dimensions of sustainable development.

It is not easy, but in several respects we are making progress. We are extending our horizons to look at the risks posed by the continuing degradation of natural capital and the environment. There is a growing recognition within both the Bank and partner development organizations, that environmental considerations must be systematically factored into country assistance strategies and policy lending. The focus of environmental assessment, too, is expanding from a project-specific to a comprehensive sectoral or regional outlook. And we are paying more attention to meeting environmental objectives during implementation. The emphasis is on changing institutional behavior and performance to reduce poverty.

In addition to the work of the Environment Department, the Environmentally and Socially Sustainable Development Network (ESSD) also includes social and rural development.

One of the main objectives of our work on social development is to minimize and mitigate the adverse impacts that often accompany the Bank's development projects, such as resettlement associated with dam construction. The Social Development Department also addresses the social constraints in economic development, such as ownership, participation, civil engagement, and local capacity building. A major pillar of the Bank's overall agenda is support for community-based approaches and the involvement of local people and NGOs. All of the Bank's regional departments, many of its resident missions, and some networks hold regular NGO forums. NGOs are often the social actors who provide crucial information to the Bank in identifying development problems.

On rural issues, we are increasingly taking a broad focus, as opposed to a narrow agricultural sector focus. The rural sector strategy focuses on the entire rural productive system. For example, the management of natural resources in sustainable production systems treats agriculture, forestry, aquaculture, and livestock as part of a larger system. Human capital development, infrastructure, and social development are integrated into rural development strategies and programs.

Does the Bank's ESSD Network capture all the dimensions of sustainable development? Certainly not. But we are working with others in the Bank to broaden our impact. For example, we have just completed a new environmental strategy for the energy sector.

As an institution trying to incorporate sustainability into all its activities, the Bank must be careful not to fund initiatives that bring people out of poverty very quickly only to put them back into poverty within a generation because we did not foresee the long-range draw-down of natural capital. We are on the right track in many places. In Papua New Guinea, for example, we have been looking at creating a conservation trust fund that would involve local stakeholders and use relatively small funds for conservation work. In Indonesia, we are looking at how to protect coral reefs by identifying the causes of loss and involving local communities.

Regardless of the project or program, we must ask how sustainable development, environment, and social issues can sensibly permeate everything we do. Perhaps eventually we will be able to claim that all our efforts contribute to reducing poverty in ways that are environmentally and socially sound. This is a huge challenge, but one that together we are striving to meet.

A handwritten signature in dark ink, appearing to read 'Ian Johnson'. The signature is fluid and cursive, with a large initial 'I'.

Ian Johnson

Environment Matters is a magazine of the World Bank Group. This 1999 issue is an Annual Review of the Bank's environmental work during fiscal 1999. Also visit the magazine on the Bank's Web page.

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Welcome to *Environment Matters*...

This issue, which serves as our annual review on the environment, looks back on the World Bank's environmental work from July 1998 through this past June (our fiscal year 1999), and highlights upcoming challenges and opportunities.

The overview article reviews major environmental activities in fiscal 1999 and describes the current effort to develop an Environment Strategy for the Bank. The second article describes emerging trends in the Bank's environmental portfolio.

Each of the Bank's operational regions has written an overview of the region's work for the past year, taking a close look at the accomplishments, lessons learned, and future challenges within its own portfolio of projects. IFC and MIGA have done the same for their work. For operational purposes, the Bank defines the world's regions as:

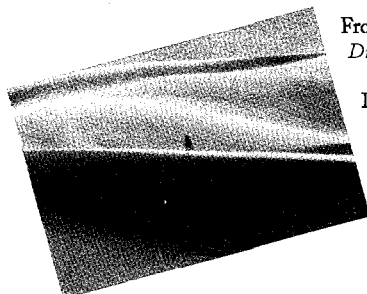
AFR—Africa
 EAP—East Asia & the Pacific
 ECA—Europe & Central Asia
 LCR—Latin America & the Caribbean
 MNA—Middle East & North Africa
 SAR—South Asia

We also scanned the year's work in a series of cross-cutting thematic sections, many of which are important inputs into the Environment Strategy.

Poverty and Environment	Water Issues
Health and Environment	Quality Assurance and Compliance
Energy and Environment	Global Environment and GEF
Natural Resource Management	Legal Environmental Issues
Forestry Sector	Environmental Training

The World Bank Group			
The World Bank		IFC	MIGA
IBRD	IDA		
International Bank for Reconstruction & Development	International Development Association	International Finance Corporation	Multilateral Investment Guarantee Agency
Est'd 1945 181 countries own, subscribe to its capital	Est'd 1960 160 members	Est'd 1956 174 countries	Est'd 1988 147 members
Lends to creditworthy borrowing countries, based on high real rates of economic return	Lends at a favorable rate to poorer countries with a per capita GNP of less than \$925	Assists economic development by promoting growth in the private sector	Assists economic development through loan guarantees to foreign investors

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Dunes of the Sahara Desert, Corel Corporation

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Graphic design, Jim Cantrell

Inside Back Cover:
Asian market, African fisherman, and sunset, World Bank

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P. HUBER

New Strategies, Strengthened Partnerships

by Robert T. Watson, *Director, Environment Department*

More than 1.3 billion people are living in poverty around the world. For these people, development brings better access to services such as education, health care, and infrastructure, and also promises emergence from poverty and opportunities for a better life for many. Such outcomes will be jeopardized, however, if we ignore the environmental consequences of economic development.

The Rio conference in 1992 gave international legitimacy to the importance of environmental issues for long-term sustainable development. Since then, the Bank and its partners have worked with over 60 countries to help develop National Environmental Action Plans and put appropriate policies, investments, and institutions in place to reduce the harmful impacts of growth and development. Within the Bank, a cadre of environmental specialists has been developed, safeguard policies and procedures have been established to

improve the quality of investments, and a range of targeted programs and instruments have been introduced.

Environment does not easily fit the Bank's traditional definition of a "sector." Rather, it is the matrix in which activities of the various sectors (power, housing, transport, etc.) are embedded. A basic challenge continues to be ensuring that those sectoral activities are environmentally and socially sustainable through the application of the Bank's safeguard policies.

Although the implementation of these policies is the responsibility of the task managers, a Quality Assurance and Compliance Unit has been established in the ESSD Vice Presidency to provide oversight of the safeguard policies and support to the regions. Key activities include helping to review quality at entry and quality of supervision, development of a monitoring database, working with the regions on the difficult issues of compliance for programmatic lending, and training and awareness.

The major environment/development/poverty challenges vary from region to region. Key issues include: *East and South Asia*—the health and economic impacts of poor air and water quality, loss of natural forest cover, and scarcity of water; *Africa*—the high total burden of disease due to environmental causes, drylands productivity, watershed management, and sustainable forest management; *Latin America and the Caribbean*—urban environmental quality, protection of ecological systems, and the environmental performance of industry; *Eastern Europe and Central Asia*—maintaining water and sanitation infrastructure and managing industrial hotspots; and *Middle East and North Africa*—rapid and uncontrolled urbanization, worsening air pollution, poor sanitation in urban centers, and scarcity of water.

Strategic Evolution

The Bank and its clients have made considerable progress in addressing some environmental problems. Yet, considering the magnitude of environmental issues, the impact of these programs on broad environmental trends in the developing world has been less than was hoped for at the time of Rio, and the achievements of various programs have been mixed. Greater

progress has been made in addressing local air and water pollution issues than in the global issues of climate change, desertification/land degradation, and loss of biological diversity.

Over the years since Rio, the world has gone through significant changes. In a relatively brief time-span, the structure and process of government has changed in many countries, with growing decentralization of power, and there has been a dramatic expansion of the private sector's role. Globalization has arrived, in terms of communication, information, and the increasingly free flows of capital, goods, and people. Over the years, the Bank's role and activities have evolved, but there is now a need for taking stock, learning from past experience, and looking forward to address the challenges of sustainable development. In order to do this, the preparation of a new Environment Strategy for the bank has just begun.

The emphasis is turning from preventing harm to incorporating environmental and social values into the everyday operations of the major sectors in which the Bank invests. A key sector where evident progress has been made is energy. *Fuel for Thought: An Environmental Strategy for the Energy Sector*, was endorsed by the Bank's Board in July 1999. This strategy, which builds upon existing policies and practices, focuses on better understanding of policy and lending priorities at the nexus of energy and environment and will help to shape country-specific assistance programs. It involves three key instruments: policy assistance, knowledge management, and support for environmental best practice. Implementation of the strategy will create a framework for environmentally sound energy sector development, address local and regional environmen-

tal and social impacts as a first priority, and help tackle climate change. Monitoring of progress in implementing the strategy will be done using indicators that focus on development *outcomes*.

Some of the key concepts of this strategy are already being implemented. The Bank's Board of Directors has approved the establishment of a Prototype Carbon Fund (PCF). The PCF, which has a cap of \$150 million, is designed to operate like a mutual fund and is intended to pilot carbon emission reduction activities within the framework of two of the flexibility mechanisms of the Kyoto Protocol. The Bank, acting as trustee, will enter into agreements with "host" countries for each project. By using cleaner technologies and independent certification and verification experts funded by the PCF, greenhouse gas reductions would be created and then distributed to the investors, or "participants," of the Fund on a *pro rata* basis. Emphasis will be placed on renewable energy projects. It is envisaged that the PCF will initially be open for subscription from approximately November 1999 until February 2000.

A central instrument for implementation of the strategy is the *Energy-Environment Review (EER)*. EER is intended to cover the whole energy chain and the range of its environmental impacts (global, regional, and local). These reviews will help map out Bank Group assistance on the supply and demand side of the energy sector, as well as pollution avoidance and control in areas such as efficiency, conservation, rehabilitation, and decommissioning. A recently approved initiative is the Bank-GEF *Strategic Renewable Energy Partnership*, which will increase the scale and effectiveness of Bank-GEF joint

The Comprehensive Development Framework

The development of an environmental strategy is taking place in the context of a much larger debate about development within the Bank. The centerpiece of that effort is the Comprehensive Development Framework (CDF). The CDF is built on four principles:

- ◆ The country, not assistance agencies, should own its development strategy;
- ◆ Governments should build partnerships with the private sector, NGOs, assistance agencies, and civil society to define and implement their development needs;
- ◆ Governments and their partners should articulate a long-term collective vision of needs and solutions; and
- ◆ Structural and social concerns should be treated equally with macroeconomic and financial concerns.

activities for the market penetration of renewable energy.

Building an Environment Strategy

The preparation of the new Environment Strategy is just beginning. The strategy will (a) outline an agenda for selective focus of Bank-group efforts and resources in high-priority areas where there is a strong potential for real impact on the local, regional, and global levels; (b) build awareness and understanding of the poverty-development-environment links among Bank staff and client countries; (c) begin to define long-term goals and short- and medium-term performance benchmarks, which shift the focus from inputs and processes to impacts and outcomes and provide a transparent basis to evaluate the Bank's environmental performance; and (d) promote a long-term partnership with client countries and other actors as part of the Comprehensive Development Framework (CDF). The Strategy, whose development will entail an extensive external consultative process with key stakeholders, is envisaged to be ready by the middle of the year 2000 and will be carefully coordinated with ongoing forest and water policy implementation reviews.

Three principles are guiding the development of the strategy:

- ◆ *Build on the Bank's mission to fight poverty and support development.* The focus of development is people and their quality of life. Environmental concerns are an intricate part of this development challenge; consequently, the Bank's environmental strategy should be people-focused. It should build on the close links between environmental objectives, poverty alleviation, and development.
- ◆ *Target outcomes.* There is growing consensus and recognition, both within the Bank and partner development organizations, that the environmental agenda should be more closely linked with the overall development objectives of the developing world, and that a shift in focus should take place from inputs and processes to impacts and outcomes.
- ◆ *Be selective and build partnerships.* The Bank cannot directly influence all environment/development issues in its client countries. It should focus only on those areas where it can be most effective in achieving desired environmental outcomes. Selectivity calls for an assessment of experience in effective and less effective past interventions and on partnerships

based on agreed common objectives and comparative advantages. Links with the Comprehensive Development Framework should be carefully explored (see *Box*, above).

The **CASE Program** (Country Assistance Strategy and the Environment) is an example of ongoing work to mainstream environment and natural resource issues at the Bank, which will be incorporated into the strategy. The goal of the program is to develop a broad approach and analytical framework for dealing with environmental issues in the country assistance strategies that can be replicated across countries and regions. This work will lead to a best-practice document. Training material for country teams will emphasize the lessons learned in the development and application of the framework.

Strengthening Partnerships

The Bank is already investing substantially in fostering partnerships in a number of areas, particularly in the forest sector. For example, the *Alliance for Forest Conservation and Sustainable Use* (originally the WWF-World Bank Alliance), in which the Bank and WWF are the managing partners, pursues measurable targets for forest conserva-

tion and management worldwide. Another important partnership is the *Forest Market Transformation Initiative* (FMTI), which includes the *CEO's Forum for Forests*, *Forest Trends*, and the *Concession Management Program*. In addition, the Bank has stepped up its participation in international forums and interactions on forest issues.

Beyond the forestry sector there are numerous examples of vital new partnerships, such as the Bank-UNDP-UNEP-GEF partnership on *Land-Water Degradation in Africa* to address the degradation of land and water resources in Africa and the associated adverse impact on global environmental values; the Bank-IFAD-UNDP partnership on the facilitation committee

of the *Global Mechanism* to facilitate implementation of the Convention to Combat Desertification by mobilizing financial resources; and water sector activities such as the *Global Water Partnership*, *Regional Seas Programs* in the Baltic, Red Sea, and Gulf of Aden, and the *Africa Water Resources Management Initiative*.

The Global Environment

The Bank continues to work with countries to help them deal with global issues and to meet their obligations under international conventions. During the last year a number of innovative projects were developed to assist developing countries in meeting their obligations to the Montreal Protocol by phasing out the use of

ozone-depleting substances (ODS), including sector approaches in China, auction programs in Chile and China, and the first concessional loan program with Multilateral Fund and GEF funding - in cooperation with the government of Thailand.

In fiscal 1999, the Bank delivered to the Global Environment Facility Council projects with total GEF funding in excess of \$250 million, the strongest ever annual performance by the WBG's GEF program. A key new element of the Bank's GEF program is the *GEF Medium-Size Projects (MSPs) Window*, which grants up to \$1 million to expand partnerships with NGOs under an expedited review and approval process.

POLLUTION PREVENTION AND ABATEMENT HANDBOOK 1998

The *Pollution Prevention and Abatement Handbook 1998* compiles over a decade of experience in the World Bank about environmental management, pollution control and prevention technologies, and pollution management practices. This updated version of the Bank's 1988 publication *Environmental Guidelines* was approved by the Bank in late 1998 and is now formally published. The *Handbook* is referenced in the environmental Operational Policies used to prepare World Bank Group projects. Though primarily designed to help Bank staff in the preparation and implementation of Bank Group operations, the *Handbook* has become an international point of reference for investors, other development agencies, commercial banks, and insurance companies.

The *Pollution Prevention and Abatement Handbook 1998* compiles experience and advice on implementing practical policies, together with industry-specific guidelines for improving performance. It has been prepared by environmental specialists in the World Bank Group, with the support of a wide range of organizations and individuals.

The *Handbook* includes:

- ◆ A summary of the key policy lessons in pollution management derived from a decade of practical experience;
- ◆ Examples of best practices used to implement the policies; and
- ◆ Detailed guidelines on nearly 40 industries, which represent state-of-the-art thinking on how to reduce pollution emissions and provide numerical targets as well as achievable maximum emissions levels.

The *Handbook* reflects changes both in technology and in pollution management policies and practices. It focuses attention on the environmental and economic benefits of preventing pollution and emphasizes cleaner production and good management techniques.

The *Pollution Prevention and Abatement Handbook 1998* is available on the World Bank web site, www.worldbank.org.

The Bank's Evolving Environmental Agenda—Achievements and Future Challenges

The Bank's environmental agenda has been gradually evolving during the past decades from a "do-no-harm" policy to targeted environmental interventions and an increased effort to integrate environment into sectoral and macro policies and operations.

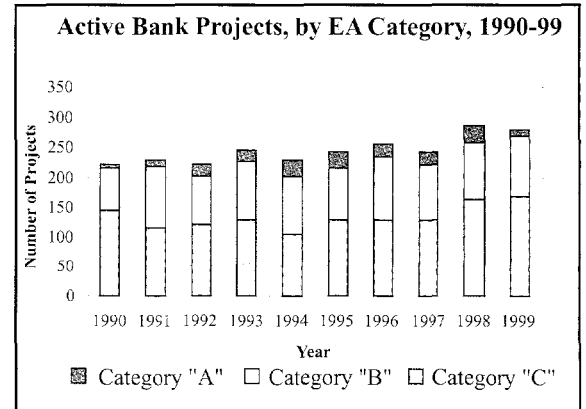
From Do-No-Harm...

To mitigate the potential adverse effects of the Bank's investment portfolio on the environment and vulnerable populations, environmental assessment procedures and safeguard policies have been systematically applied to Bank projects.

In many cases, environmental assessments have led to better project design and environmental management plans have introduced improvements in project implementation. For example, in the Ghana Thermal Power Project, the environmental assessment recommended replacing the water cooling system, which would impact fisheries, with an air tower cooling system.

During the period from fiscal year 1990 to fiscal year 1999, 186 projects—about 12 percent of the Bank's lending portfolio (by lending amount)—were classified as Category A, which requires a full environmental assessment.

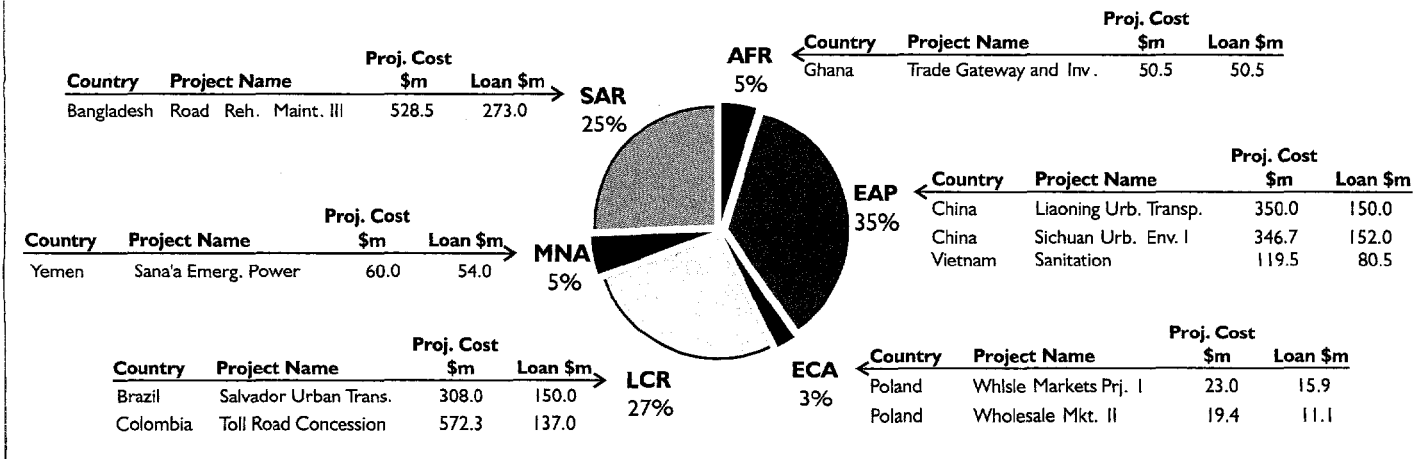
Another 931 projects—nearly 33 percent of Bank lending—were classified as Category B, requiring a more targeted or limited environmental analysis. About 55 percent of the portfolio had no environmental impact and, therefore, required no environmental analysis (Category C).



In fiscal 1999, of the 278 new Bank projects, 10 were classified as Category A and required a full environmental assessment. This represents 3.7 percent of all new projects, or over \$1 billion in lending. An additional 99 projects—35 percent of all new projects, or \$7.8 billion in lending—were classified as Category B and required a simpler environmental analysis.

Regional Distribution and Category "A" Projects in FY99

(Percentage shares equivalent to dollar totals)

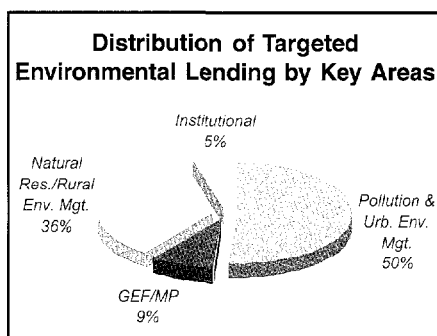


...to Targeted Environmental Assistance

In addition to environmental assessment and safeguards, a targeted environmental assistance program has also been developed to pro-actively foster long-term environmental sustainability, strengthen environmental management capacity, and improve environmental conditions in developing countries. As part of this program, the Bank during the 1990s developed a portfolio of projects with clear environmental objectives and benefits.

This "environment portfolio" includes projects in such broad categories as (a) sustainable natural resource management, focusing on watershed protection, improving soil productivity, sustainable forest resource management, and biodiversity conservation; (b) pollution management and urban environmental improvements, including household, industrial, and transport-related pollution abatement to improve air quality and protect human health and the provision and improvement of environmental services; (c) environmental capacity building, to strengthen environmental institutions, legal and regulatory frameworks, and local and disadvantaged groups and NGOs; and (d) global environmental issues—including the protection of international waters and biodiversity, mitigation of greenhouse gas emissions, and phaseout of ozone-depleting substances—in connection with international environmental conventions and commitments and financial mechanisms such as the Global Environment Facility (GEF) and Montreal Protocol.

Using these broad categories, 50 percent of the World Bank's current "environmental" portfolio comprises projects related to pollution/urban environmental issues, 36 percent to natural resource/rural environment management projects, and 5 percent to institutional projects. In addition, GEF and Montreal Protocol projects with primarily environmental objectives account for about 9 percent of the "environment" portfolio. (See *pie chart*). Given the cross-sectoral nature of environmental issues, however, defining the environment portfolio is not easy.



For example, projects supporting sustainable natural resource management could be considered agricultural or environmental projects, while urban environmental improvements may be listed as urban, infrastructure, or environmental operations. Furthermore,

the environment portfolio concept does not adequately capture environmental components or "win-win" measures undertaken in the context of sector projects. In fact, there is a growing consensus that the integration of environmental considerations and objectives into sector operations could be more effective in fostering long-term change in environmental management than one-time stand-alone environmental projects.

Mainstreaming Environment into Sector Strategies and Operations

Parallel to targeted environmental assistance, the Bank is moving to mainstream environmental concerns

Examples of Bank Projects with Environmental Objectives Approved in Fiscal 1999

Country	Project name	Project cost \$m	Loan \$m	Objective(s)
Bangladesh	Municipal Services Project	154.0	138.6	Improvements in environmental service delivery
Bangladesh	Arsenic Control Project	44.4	32.4	Reduction of arsenic contamination in groundwater
Brazil	Emergency Fire Prevention Project	27.0	15.0	Forest fire protection
China	Sichuan Urban Environment Project	346.7	152.0	Urban environmental services improvement program
China	Second Loess Plateau Watershed Rehabilitation Project	150.0	150.0	Improving ecological conditions in tributary watersheds; Slope-land protection
Georgia	Integrated Coastal Management Project	7.6	4.4	Coastal zone protection; Biodiversity conservation; Marine pollution control
Honduras	Interactive Environmental Learning and Science Promotion Project (PROFUTURO)	9.3	8.3	Interactive Learning Center for environmental awareness
India	Second Uttar Pradesh Sodic Lands Reclamation Project	286.6	194.1	Improvements in drainage reduces sodic land formation
India	Second Tamil Nadu Urban Development Project	205.0	105.0	Improvements in sanitation, sewerage, solid waste management
India	Integrated Watershed Development Project (Hills II)	193.0	135.0	Watershed protection and development; reduction in soil erosion
Indonesia	Water Resources Sector Adjustment Loan Project (WATSAL)	300.0	300.0	Water resources development institutional strengthening for river basin management
Kyrgyz Republic	Flood Emergency Project	14.1	10.0	Rehabilitation of river protection infrastructure
Lao, P.D.R.	District Upland Development and Conservation Project	2.2	2.0	Biodiversity conservation
Nicaragua	Sustainable Forestry Investment Promotion Project	15.0	9.0	Forestry resource management
Philippines	Local Government Units (LGU) Urban Water and Sanitation Project	33.3	23.3	Financing of sanitation, urban drainage
Uganda	Institutional Capacity Building for Protected Areas Management and Sustainable Use Project	14.4	12.4	Strengthening institutional capacity for wildlife and tourism sectors
Vietnam	Sanitation Project	119.5	80.5	Upgrading urban environment; better sanitation, sewerage, drainage
Yemen, Republic of	Sana'a Water Supply/Sanitation Project	28.0	25.0	Rehabilitation of sewerage system

India—Second Watershed Management Project

This project seeks to provide an integrated approach to watershed management in rain-fed areas of the degraded Shivalik Hills in India. It promotes appropriate watershed management techniques, including vegetative and non-vegetative watershed treatment, fodder and livestock management, and rural infrastructure, in addition to strengthening of institutions from beneficiary to project management levels. The highly participatory nature of the project, including participatory rural appraisals and beneficiary training, is expected to make the project much more sustainable. India's first Regional Environmental Assessment was conducted for this project and attempts to mainstream environmental considerations into the entire project—including design, execution, monitoring and evaluation, and training.

into sector strategies and operations beyond the do-no-harm approach.

Rural development is an example of this change. Reversing environmental degradation and fostering sustainable natural resource management are two of the key objectives of the 1997 rural development strategy report entitled *Rural Development: From Vision to Action*. At the project level, the strategy has translated to "greener" projects, which is indicated by the increasing number of lending initiatives for better agricultural land management, efficient resource use, and sustainable farming practices. Of the 37 new agriculture projects approved in fiscal 1999, several projects have natural resource management components (see *Box*).

Environmental priorities are also a significant part of improving urban livability. The Bank's new Urban

Strategy has several objectives, including (a) the protection of human health from environmental threats; (b) the provision of basic environmental services, especially for the poor; and (c) taking an integrated approach to traditional and emerging urban environmental problems by focusing on urban environmental management, incentives, institutional capacity, and harnessing the role of the private sector.

In the **energy** sector, the Bank's Board of Directors in fiscal 1999 endorsed *Fuel for Thought*, an environmental strategy for the energy sector. The strategy emphasizes the need to (a) protect human health from the adverse effects of indoor and urban air pollution; (b) protect natural resources from the adverse impacts of water and air pollution; (c) promote environmentally sustainable production and use of energy resources; and (d) mitigate the

Poland—Hard Coal Sector Restructuring Loan

The coal mining industry in Poland has a poor environmental record. Environmental problems include saline water discharges, which contaminate water resources; the disposal of mine wastes interfering with land use issues; and releases of coal bed methane, a greenhouse gas.

This sector adjustment loan—aimed at supporting the restructuring of the coal sector—has several environmental implications. Under the loan, several uneconomical mines are to be closed down, while operating mines are required to include in their Business Plans environmental management to identify, for example, priority environmental mitigating measures and associated costs and a schedule for implementation. In addition, the Ministry of Environment is to prepare a Sectoral Environmental Assessment (SEA) to help establish environmental priorities, identify appropriate mitigation measures, and establish an implementation schedule.

potential impacts of energy use on global climate change. The Bank is promoting these objectives through lending for sector reform (see *Box*), pollution abatement, and demand- and supply-side efficiency improvements. It is also encouraging better environmental management and the use of cleaner energy sources and technologies, such as switching to natural gas, improving the quality of automotive fuels, and exploring renewable energy options.

To better integrate environmental issues into sectoral policies and strategies, ongoing reviews of the Forest, Water Resources Management, and Urban Transport Policies are closely coordinated with the preparation of the Bank's corporate Environment Strategy.

Integrating Environment into Macro-policies

In addition to sectoral "mainstreaming," there is an ongoing effort to better integrate environmental considerations

Brazil—Water Quality and Pollution Control Project: Sao Paulo and Parana

The key objective of the Water Quality and Pollution Control Project is to assist Brazil in developing an integrated and cost-effective approach to control water pollution. The project proposes policy and institutional reforms that minimize allocative distortions, and investments in water pollution control covering water basins in two of the most congested and polluted metropolitan areas in Brazil—Guarapiranga in Sao Paulo and Upper Iguacu basin in Curitiba. Major water pollution sources in the Guarapiranga and Curitiba areas have been identified as primarily domestic, and the two components have been designed accordingly. The subcomponents will include (a) institutional building and strengthening, including monitoring and evaluation systems; (b) policy and regulation design; (c) studies; (d) river regularization, flood control, and drainage works; (e) rehabilitation of basic sanitation infrastructure for low-income population; (f) solid waste collection and disposal; and (g) the provision of sewerage, sewage treatment, drainage, and solid waste disposal in the river basin. The national component is designed to provide finance for project preparation and technical assistance to states and local institutions.

into Country Assistance Strategies (CASs). The goal of the *CASE (CAS and the Environment)* program is to develop a broad approach and analytical framework to incorporate environmental issues into Country Assistance Strategies, so that they can be replicated across countries and regions. The CASE program has produced three case studies (Dominican Republic, Zambia, and Azerbaijan) to date, and two retrospective studies (Thailand and Botswana). Three more case studies are planned (Pakistan, Tunisia, and Argentina), with preliminary work underway in Pakistan and Tunisia.

Non-lending Services

Environmental lending has only been a part of the Bank's efforts to address environmental issues. The Bank's analytical work has assisted several countries in setting environmental priorities and strategies. For example, the Bank has supported the preparation of many National Environmental Action Programs (NEAPs) and Environment Strategies.

Environment-related economic and sector work (ESW) includes water sector strategies, environmental studies and reviews, regional environmental strategies, forest sector notes, etc. Examples of ESW approved in fiscal 1999 include the *Urban Environment Strategy for Vietnam*, a *Water Strategy Paper for Latin America*, a *Land Resource Management Study in Nepal*, a *Forestry Sector Review in Turkey*, and an *Environment Study of Ethiopia*.

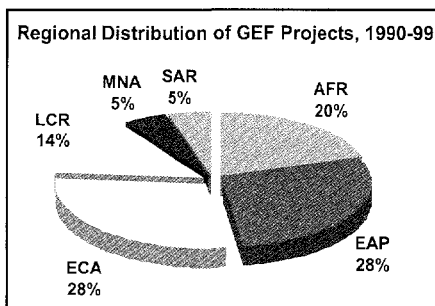
Capacity building—through non-lending services, policy advice, and assistance through regional and international programs—has contributed to fostering better environmental stewardship and often to positive results on the ground. The Bank's support to the global phaseout of leaded gasoline and to regional lead phaseout programs in Latin America, Europe, Central Asia, and the Caucasus have accelerated national action and resulted in improvements in urban air quality and health conditions. **The Metropolitan Environment Improvement Program** in Asia has built local capacity to address urban environmental challenges.

As part of the Bank's new emphasis on knowledge management, a number of thematic groups (Biodiversity, Climate Change, Drylands, Environmental Assessment, Environmental Economics, Forests and Forestry, GEF, Montreal Protocol, Pollution Management, Water Resources) have been formed in the Environment Family. These serve as focal points fostering the generation, dissemination, and transfer of information and good practice both within the Bank and among its clients.

Addressing Global Environmental Concerns

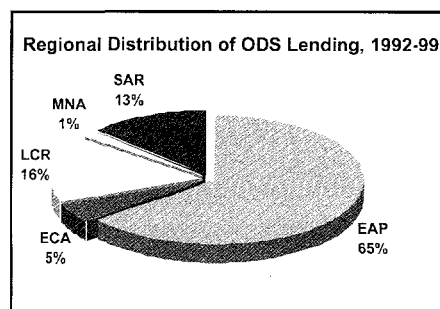
The Bank's work as coordinator/financier of regional and global activities that address transboundary environmental problems has grown over the years.

As implementing agency of the Global Environment Facility (GEF), the Bank is supporting projects in four key areas: biodiversity conservation, phaseout of ozone depleting substances, addressing climate change, and the protection of international waters. In April 1999, the coordination of GEF activities was transferred from the central Environment Department to the regional units to foster the mainstreaming of GEF activities into Bank operations.



As an implementing agency for the Montreal Protocol (MP), the Bank supports programs in 20 countries. It has been successful in facilitating the phaseout of 70 percent of the total amount of ozone-depleting substances (ODS) targeted under the MP. This target has been reached with only 40 percent of the funds at a cost of less than \$2 per kg.

One of the major achievements in the last year was the long-debated and



recently approved China Production Sector Plan, which would close all 36 chlorofluorocarbon (CFC) production facilities in China over 11 years with a \$150 million grant. The plan would eliminate 45,000 tons of ODS production. (China currently accounts for 43 percent of the world's CFC production).

Apart from GEF/MP-related activities, the Bank has also been involved in several global initiatives. In July 1999, the Bank's Board of Directors approved the *Prototype Carbon Fund (PCF)*, which is designed to pilot carbon emission reduction activities within the framework of two flexibility mechanisms of the Kyoto Protocol: (a) the project-based transfer of emission reduction units among Annex I (industrialized) countries; and (b) the transfer of certified carbon offsets under the Clean Development Mechanism between Annex I and non-Annex I countries.

New Challenges—Targeting Better Outcomes

As our understanding of the effectiveness of development assistance improves, it is becoming generally accepted that lending itself does not necessarily yield desirable outcomes unless a serious effort is made to closely link projects, non-lending services, and sector work to these outcomes and to ensure expected results and performance during implementation. The Bank is making an increased effort to reorient its focus from simply inputs and processes to achieving tangible environmental benefits that contribute to the Bank's mission to fight poverty. A common understanding and agreement with our clients and partners on fundamental objectives and joint efforts toward these goals are essential for a better environmental future for the 21st Century.

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AFR

Africa Region

Angola	Liberia
Benin	Madagascar
Botswana	Malawi
Burkina Faso	Mali
Burundi	Mauritania
Cameroon	Mauritius
Cape Verde	Mozambique
Central African Republic	Namibia
Chad	Niger
Comoros	Nigeria
Congo, Democratic Republic of	Rwanda
Congo, Republic of	Sao Tome and Principe
Côte d'Ivoire	Senegal
Djibouti	Seychelles
Equatorial Guinea	Sierra Leone
Eritrea	Somalia
Ethiopia	South Africa
Gabon	Sudan
Gambia, The	Swaziland
Ghana	Tanzania
Guinea	Togo
Guinea-Bissau	Uganda
Kenya	Zambia
Lesotho	Zimbabwe

African experts and decision-makers increasingly acknowledge that environmental degradation is a major factor constraining economic development in Sub-Saharan Africa, and that reversing this trend is an essential ingredient in any poverty alleviation policy.

Helping African clients reverse environmental degradation continues to be a key focus in the activities of the Africa Region. During fiscal 1999, as in previous years, the emphasis has been on (a) ensuring that national and global environmental concerns are mainstreamed in Bank operations; (b) continuing to build capacity for environmental management in client countries; and (c) effectively managing the environmental portfolio. Here are some highlights of the past year's activities.

Mainstreaming the Environment

Biodiversity. In fiscal 1999, the Africa Region published *A Strategic Framework for Biodiversity Conservation in Sub-Saharan Africa*. Since habitat loss and fragmentation are the major threats to biodiversity, the report emphasizes the central role of land use in biodiversity conservation. It proposes a landscape management approach that integrates different forms of land use over large areas, including both core protected areas for sites of highest biodiversity importance and incorporating biodiversity conservation methods within the prevailing land uses in other areas. Another key point is that biodiversity conservation can provide important benefits to landowners and local communities. It also represents an environmental service that other stakeholders—including the international community—should be prepared to support financially.

The Strategic Framework proposes the adoption of innovative “non-project” models such as land conservancies, conservation easements, and the purchase of transferable development rights, which can help provide landholders with direct and concrete incentives to conserve biodiversity. Many of these principles and approaches apply to improved management of other natural resources as well, with particular synergies to be achieved between biodiversity conservation and improved forest management.

Using Environmental Assessment. For the past decade the Bank has been using Environmental Assessments to systematically screen its activities. The Africa Region, in cooperation with the Legal Environmental group and other sections of the Bank, drafted several key guidance and analytical documents that will be published and disseminated during fiscal 2000: a handbook on the management of EA in the Africa Region; an analysis of EA legislation in the 22 Sub-Saharan African countries that have adopted such legislation; and a compilation of experience with environmental assessments in the Africa Region.

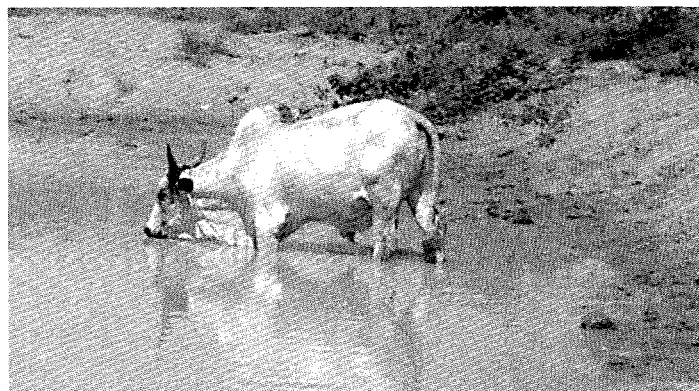
Of the 58 projects that went to the Board in fiscal 1999 (for total lending of \$2.25 billion), one requires a full environmental assessment and 17 require a simpler environmental analysis.

Capacity Building for Environmental Management

Environmental Assessment Capacity Building. The East Africa Office of the World Conservation Union (IUCN), the African Ministerial Conference on Environment (AMCEN), UNEP, and the Economic Commission for Africa (ECA) hosted a stakeholders consultative workshop in Nairobi, Kenya, in July 1998. The Bank facilitated the



WORLD BANK



*Livestock in
southwestern
Chad.*

workshop. Stakeholders from most Sub-Saharan African countries, including members of the academic community and public and private sectors, participated in the preparation of an African EA Capacity Building Action Plan. The core African working group presented and discussed a draft Action Plan at the annual meeting of the International Association for Impact Assessment (IAIA), in Glasgow, Scotland, in June 1999. The topic will be on the agenda at the next AMCEN meeting in the fall of 1999, which will be followed by a donors roundtable in the winter. The draft Action Plan recommended training, networking and institution building.

The Africa Region facilitated several subregional and national EA capacity building activities, including one general EA workshop for seven West African countries; a workshop on EA in the mining sector for Mali, Mauritania, Niger, and Burkina Faso; and one workshop in Nigeria that focused on using EA to address Niger Delta pollution issues. Four workshops are in preparation in Mozambique, Chad, Cameroon, and Senegal. There is a systematic follow-up with trainees after the workshops.

National Environmental Action Planning. Most Sub-Saharan African countries

now have completed and approved National Environmental Action Plans (NEAPs) or equivalents. Five nations (Angola, Chad, Somalia, Sudan, and Liberia) have not yet started, while NEAPs are underway in four nations (the Central African Republic, Djibouti, Gabon, and Zimbabwe). However, due to internal conflicts, the NEAP preparation processes in the Central African Republic and Djibouti have been suspended. During the IDA-11 implementation period from fiscal 1997 to fiscal 1999, NEAPs were completed and approved for Senegal, Mali, Niger, and Togo. Of the remaining countries, the Gabon NEAP is nearly completed and is expected to be approved before the end of 1999. Zimbabwe has adopted an incremental approach, doing its environmental planning district-by-district in order to build up a national plan.

Currently, seven countries (Benin, The Gambia, Madagascar, Malawi, Seychelles, Uganda, and Zambia) are actively implementing their NEAPs through Bank-financed Environmental Support Programs (ESPs). Other countries are implementing their NEAPs without Bank assistance, or by incorporating support for environmental management in components of other Bank-financed programs. In some cases (Guinea, Senegal, Tanzania), the Bank

is supporting the development of core environmental institutions through a grant from the Institutional Development Fund (IDF).

Many African countries have completed NEAPs but have been unable to implement them because of political and economic crises: Rwanda, Burundi, Congo, Democratic Republic of Congo, and Sierra Leone are examples of this situation. In other cases, lack of political commitment has hampered the effective implementation of NEAP policies and programs (Cameroon, Kenya, Tanzania).

Côte d'Ivoire has recently expressed a strong political commitment to environmental management and an Environmental Support Program is under preparation with Bank funding. The Côte d'Ivoire ESP will emphasize decentralization, capacity building, and private-public sector partnership development for pollution management.

Local Environmental Management. For the third consecutive year, the Bank is providing management support to the regional MELISSA initiative (Managing Environment Locally in Sub-Saharan Africa), cofinanced by the European Union, Sweden, and Norway. Knowledge management is the focus of the network, which now links more than 500 practitioners and decisionmakers in Sub-Saharan Africa. The web site (<http://www.melissa.org>) is constantly updated and improved. An external evaluation is being conducted by the European Union, and there is a strong possibility that a second phase of funding will allow the regional initiative to reach a more mature and sustainable stage.

The decentralization of government authority is noticeable in many countries in the region, both at the urban and

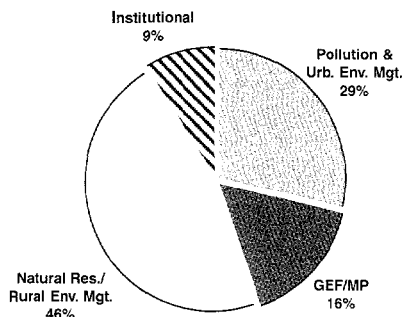
rural level. Environmental management is increasingly a dual responsibility of both central and local governments. MELISSA staff are increasingly meeting with and advising officials of newly created local governments.

Environmental management capacity building. The MELISSA coordinator has also been instrumental in bringing together environmentally related initiatives, such as NESDA (Network for Environment and Sustainable Development in Africa), the EIS Secretariat, and the nascent African EA practitioners network. Single focal points for environmental management are being created in African countries to maximize the potential synergy among regional and subregional environmental initiatives. The World Bank facilitates this process with a long-term view to speed up the creation of sustainable constituencies at the field level.

Portfolio of Environmental Projects

Natural Resource Management: Client countries have continued to implement NRM projects from previous fiscal years. Biodiversity, soil conservation and forestry management were the most important themes in the portfolio. Several new initiatives are getting started in fiscal 1999. In Uganda, for example, there is a new capacity building project for protected areas management (see *Box, below*), while in Ethiopia a new project will focus on the conserva-

Projects Active during FY99 with Significant Environmental Objectives



tion and sustainable use of medicinal plants (see *Box, page 15*).

GEF-financed Projects: The global environment operations portfolio supported by the GEF is still growing rapidly in Sub-Saharan Africa. In fiscal 1999, seven additional projects submitted by the Africa Region have been approved by the GEF Council as well as the first four GEF Medium-Sized Grants (MSPs). MSPs represent an important mechanism for broadening and diversifying Bank support, enhancing stakeholder participation, and engaging a wider range of partners. For example, the **Kibale Forest Wild Coffee Project** in Uganda is supporting an alliance between the private sector Coffee Trade Federation and the Uganda Wildlife Authority to improve the protection and management of the Kibale National Park by capturing an international price premium for “environmentally friendly” coffee. The global environment operations pipeline is also

strong, showing 15 ongoing proposals while 21 GEF projects are active.

The dialogue with Sub-Saharan African countries on global issues is steadily developing and is increasingly becoming a regular part of the Bank’s dialogue. As part of the process of mainstreaming global issues and GEF operations in the Region’s assistance strategy and work program, the position of Global Environment Coordinator has been established in the region.

Recognizing that reducing land and water degradation is crucial to Africa’s sustainable development, the GEF partners agreed in March 1999 to develop an integrated land and water program. Through its three implementing agencies, the GEF has so far invested over \$500 million in projects that address the issue of land and water degradation in Sub-Saharan Africa. The Africa Region is committed, with the support of the GEF, to explore ways to integrate biodiversity, climate change, and international waters aspects towards the common objective of reversing land degradation and loss of productive wetlands while accruing global environment benefits.

In fiscal 1999, the Africa Region also promoted new financial instruments using GEF resources, including the GEF/Adaptable Lending Program for the protected areas management project in the Ivory Coast; the natural resource management project in Ghana; and the Learning and Innovation Loan for the medicinal plants project in Ethiopia. Such projects bring more flexibility and adaptability, promote innovation, and build knowledge and experience to protect the global environment. The Africa Region is now increasing the identification of GEF proposals that are fully integrated in sector activities such as agriculture, forestry, water, transport and energy.

Transboundary activities: The Bank is currently funding two portfolio projects with cross-border elements—**Community Wildlife Management** (Burkina Faso and Côte d’Ivoire) and **Transfrontier Conservation Areas** (Mozambique, South Africa and Zimbabwe). Several other projects are

Uganda

In Uganda, a three-year project focusing on **Institutional Capacity Building for Protected Areas Management and Sustainable Use** started in March 1999. Its objective is to establish effective institutional capacity in the public and private sectors for strategic planning, program development, and implementation, with the aim of restoring an environmentally sustainable nature-based tourism sector. It will provide assistance to the Ministry of Tourism, Trade and Industry, to establish a supportive policy and regulatory framework; to parastatals such as the Uganda Wildlife Authority, the Uganda Wildlife Education Center, and the National Commission for Antiquities and Museums, to preserve and develop the natural and cultural assets on which tourism is based; and to the private sector, to build professionalism and enhance the quality of the tourism product. The project represents an essential first step towards a major investment project, with well-defined targets for institutional capacity and triggers for moving on to the investment phase. In effect, it followed an APL (Adaptable Program Lending) approach prior to an APL instrument being put in place.

Ethiopia

In Ethiopia, the **Conservation and Sustainable Use of Medicinal Plants Project** aims to support the conservation, management, cultivation, and sustainable utilization of medicinal plants for human and livestock health in Ethiopia. The project will strengthen the capacity of the public and private sectors in Ethiopia to provide safe, efficacious and affordable health care employing locally available medicinal plants. In doing so, it recognizes the significant contributions traditional knowledge and cultural heritage can make to integrated rural development. Specific elements include (a) the establishment of a medicinal plant conservation policy; (b) support to farmers to adopt new methods for cultivating medicinal plants; (c) integration of traditional health systems into the government's formal health system; and (d) increasing end-user participation in research and establishing responsive linkages among researchers, extensionists, farmers, traditional health practitioners, and the primary health care system. The project will focus on the contribution women play in administering home health care and in income generation, and in establishing incentives for sustainable private sector/NGO involvement in the production and marketing of effective and affordable phytomedicines. This GEF-funded project will complement IDA and bilateral donor-financed programs for the development of forest and non-forest production systems that are environmentally and socially sustainable, and for the management of protected areas with the involvement of local residents. The research and information management component will provide a systematic documentation and evaluation of threat, rarity, and demand in relation to medicinally valuable plants that will be unparalleled in the East Africa region in terms of its scope and comprehensiveness.



CORBIS

Baobob tree. Gumel, northern Nigeria.

under preparation. More broadly, the Bank is supporting several major initiatives aimed at supporting environmentally sustainable land and natural resource management on an ecosystem scale that spans national borders. This includes both shared water bodies and terrestrial ecosystems. For example, environmental management projects for Lake Victoria and Lake Malawi support research, monitoring, and cooperative action among the riparian states to reverse ecological degradation that threatens both the economic and biological values of these unique lakes. Under the **Maputo Corridor** and **Lubombo Spatial Development Initiatives**, ecosystem management is

being pursued through the development of strategic environmental management frameworks and other analytical work to enable South Africa, Mozambique, and Swaziland to harmonize and coordinate development across their common borders to ensure environmental sustainability. This includes establishing multisectoral protocols on key environmental issues such as water management, protection of watershed forests, safeguarding against the cumulative environmental impacts of industrial and urban development, cooperation in the management of transfrontier conservation areas and fisheries, and facilitation and promotion of ecotourism.

More from cyberspace

The "Best Practice" Africa Region Web site contains information on the environmental program at: <http://afr.worldbank.org/aft2/environ/rrs-env.htm>

For more about MELISSA, see <http://www.melissa.org>

For more about the Table Mountain Project, look at <http://www.terramare.co.za/tmp/default.htm>.

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Cambodia
 China
 Indonesia
 Korea, Republic of
 Lao People's
 Democratic Republic
 Malaysia
 Micronesia, Federated
 States of
 Mongolia
 Myanmar
 Pacific Islands
 Papua New Guinea
 Philippines
 Thailand
 Vietnam

East Asia's economic success over the last few decades has guaranteed neither uniform reductions in poverty across economies nor a healthy environment. Further environmental degradation will clearly jeopardize prospects for continued growth in the region. The World Bank estimates that the region's costs from environmental degradation are above 5 percent of annual GDP, and in China may be as high as 10 percent, with the poor suffering most from the consequences of environmental problems.

Initiatives to protect the environment would enhance the quality of life for Asian people, especially for those most disadvantaged. A degraded environment adversely affects human health and threatens the livelihoods of the rural and urban poor, thus also exacerbating inequity in the country. Throughout Asia, poor people living in urban areas are at risk from air pollution caused by increasing traffic congestion, water pollution from untreated domestic and industrial waste, and ineffective waste management. It has been estimated that the cost of poor air quality in 11 Chinese

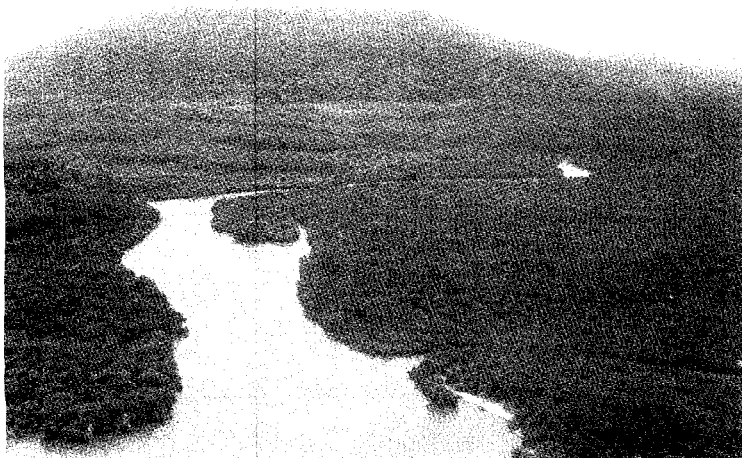
cities could amount to as much as a fifth of the cities' income, and that in Bangkok the high concentration of vehicular emissions can cause as many as 5,000 premature deaths annually.

In rural areas, rapid loss of natural forest cover, scarcity of water, increased pressure on fisheries, and eroded soils have immediate negative impacts on income and welfare of the more economically vulnerable, who have the highest direct dependence on the environment for both sustenance and livelihoods. Furthermore, in the long run, the current trend toward degradation of key natural resources could prevent agriculture, forestry, fisheries and tourism from playing potential key roles in rural development, both directly as sources of livelihood and income for rural people, and indirectly through the supply of inputs to value-added activities.

The realization that the economic costs of environmental damage could ultimately compromise the efforts of the last three decades to improve living standards in the region has prompted efforts throughout East Asia to consider the complex links between economic development and environment. The economic crisis has put some of these efforts in jeopardy. At the same time, it has presented an opportunity to reintroduce long-term development goals, including a proper balance between people and environment, in the development plans of East Asian countries.

Responding to the Crisis

The East Asia Environment and Social Development Unit is preparing a follow-up study to the January 1999 discussion paper entitled *Environmental Implications of the Economic Crisis and Adjustment in East Asia*. This follow-up study assesses the medium- and long-term impacts of the crisis on natural resources extraction and degradation. It considers the impact of the crisis on poverty issues, with a special focus on the links between poverty and natural resource degradation.



S. LINTNER

Bhumpoi Reservoir, Thailand.

Voices from the Village — Coastal Resources Management in the Pacific Islands

People in the Pacific Islands depend heavily on the marine life of coastal waters for food and income. Coastal areas, however, are facing many challenges. Population growth and the need for cash income have led to the overexploitation of fish and shellfish, while lagoons, coral reefs, and shores are threatened by pollution. Furthermore, the governments of most of the Pacific Islands do not possess the institutional capacities to carry out the integrated efforts needed to deal effectively with threats to coastal resources.

In 1998, the Bank sponsored a six-month study of community perceptions of coastal resources management in 31 coastal communities in five island nations: Fiji, Palau, Samoa, Solomon Islands, and Tonga. Using interviews and a questionnaire, the study attempted to uncover the perceptions of local groups regarding coastal resource trends, the need for external assistance, and lessons learned from establishing marine sanctuaries. The aim of the study was to help the region's coastal managers understand the factors that contribute to successful management of coastal resources.

The study produced useful insights and some unexpected findings. For example, purely centralized or purely community-based systems are unlikely to be successful in addressing the challenges facing coastal resources in the Pacific. Rather, comanagement approaches capitalizing on each partner's comparative advantage may be needed. Even more important, the study proposed an innovative approach to coastal resources management that would rely heavily on the perceptions of the coastal communities.



WORLD BANK

Attempting to aggregate the overall effect of the crisis and related policy reforms on the environment is not easy. For example, it is difficult to isolate impacts that result specifically from the crisis. However, a number of preliminary observations are worth noting regarding changes in budgetary allocations for the environment and changes in environmental trends.

In most nations in the region, budgetary allocations for the environment have been reduced, but there are important differences in the precise nature of these cuts. In Indonesia, environmental agencies have generally undergone substantial budgetary cuts. In Thailand, budgets have also been reduced by about 20 percent, especially for pollution control and energy conservation, although some agencies have not been affected. In the Philippines, the budget

of the Department of Environment and Natural Resources has suffered a 25 percent mandatory reserve on all expenditures other than personnel and debt service and the suspension of tax subsidies to government units. The government of Korea's environmental budget shrunk from 2.8 percent of GDP in 1997 to 0.3 percent in 1998. These changes may lead to fewer investments in conservation and protection activities, cutbacks in O&M budgets for industrial and municipal treatment facilities, and delays in investments in capital renewal and cleaner technologies.

While a large number of industrial facilities have closed down, those remaining in production do not necessarily have the same resources to continue to operate their pollution control equipment. Hence, while

industrial production has fallen, pollution intensity may well have increased. The effect of the combination of these two phenomena on aggregate pollution loads is not clear. Furthermore, financial constraints of private and public sector companies might increase the reluctance of governments and environment agencies to comply with environmental standards.

The impacts of El Niño, forest fires, and the 1998 drought have made it more difficult to understand the consequences of the crisis on natural resources. Many simplistic scenarios have not been realized, including the theory that natural resources degradation would worsen as a result of intense reverse migration from urban to rural areas, that the crisis would increase encroachment into protected forest areas, and that it would increase

exploitation of marine and freshwater resources. Coastal and mangrove resources have been threatened more by domestic and industrial effluent than from additional fishing pressure. Often the crisis has merely heightened pre-existing trends.

In the current context, priority is rightfully given to restoring growth to reverse the decline in personal and national incomes and continue the battle against poverty. At the same time, the recovery programs provide an opportunity to remove environmentally harmful subsidies, to promote competitive gains through energy savings and resources optimization, and to create a framework for implementing positive environmental fiscal incentives. As growth resumes, the choice should not be between environment and development, since both are needed. The challenge is to make the recovery work for the environment, so that the financial crisis may be remembered as a window of opportunity for improved environmental equality in East Asia.

In response to the economic crisis, the **Indonesia Water Sector Adjustment Loan** (WATSAL) is a particularly innovative aid program (see *Box*, below).

The Indonesian Water Sector Adjustment Loan

Among the most innovative aid programs designed in response to the East Asia economic crisis is the **Indonesia Water Sector Adjustment Loan** (WATSAL). This \$300-million loan would provide balance of payments assistance to support policy, institutional, regulatory, legal, and organizational reforms in the management of the water resources and irrigation sector. In the short term, WATSAL would support the development and utilization of professional expertise within the country for a reform program, and the consolidation of reforms through institution building, planning, and monitoring arrangements. In the medium term, the proposed sector reforms are expected to result in new management institutions that are better able to respond to the adverse impacts of changing land use, urbanization, and growing non-irrigation water demand.

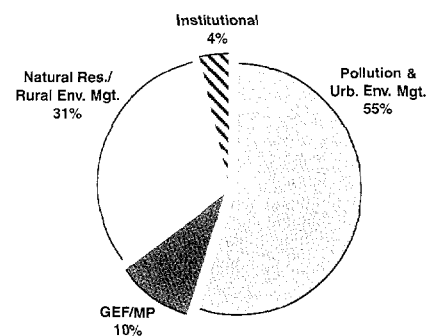
WATSAL is the first adjustment operation subjected to a Sectoral Environmental Assessment (SEA), which is required for all sector adjustment operations under the new OD 4.01. It represents a concrete effort to incorporate environmental concerns into the economic recovery process. The SEA, prepared by the government of Indonesia in cooperation with the Bank, seeks to assess the risk of possible environmental and social impacts during the implementation of WATSAL, and to propose alternatives and mitigation options in case negative impacts are anticipated. Alternative options were identified and chosen through a public consultation process comprising selected groups from the government, civil society, and NGOs.

The Environment Portfolio

Throughout the crisis, the World Bank has continued to invest in environmental projects and environmental components of projects throughout East Asia. During fiscal 1999, the Bank launched 10 new operations. Many of them embody the principle of mainstreaming the environment into lending operations by promoting capacity building of environmental institutions, decentralizing decisionmaking and management of natural resources, and establishing effective public-private partnerships.

The East Asia Region has the largest number of urban development projects in the Bank, with a strong focus on urban environmental improvement through support for water supply, sewage collection and treatment, solid waste and traffic management, plus institutional development and capacity building to improve the framework within which urban planning and investment decisions are made. Furthermore, EASES is working actively to green the Country Assistance Strategy and other formal and informal sector activities. For the first time, Bank reports such as the 1999 *Philippines Country Economic Memorandum* and the 1999 *Social and Structural Policy Review*

Projects Active during FY99 with Significant Environmental Objectives



for Thailand have included chapters on the environment.

In the area of natural resources management, EASES has recently completed a 10-year retrospective of NRM experience in the Region that will help formulate a medium-term NRM strategy (see *Box*, page 17).

Portfolio Overview

The **Philippines LGUs Urban Water and Sanitation Project** improves urban environmental conditions through creation and upgrading of sustainable water and sanitation services and facilitation of investments in municipal water and sanitation systems. For several years, the **Lao PDR Forest Management And Conservation Project** has been developing and evaluating sustainable village-based forest management systems for production forests. This project also is intended to establish an Integrated Conservation and Development (ICAD) system for priority protected areas.

The GEF Portfolio. The Region's GEF portfolio has grown to 14 projects. Of these, eight projects address climate change and six biodiversity conservation. The two main thrusts of the climate change portfolio are to promote more efficient use of conventional energy and wider application of renewable energy technologies, particularly wind power generation and solar home systems. The biodiversity conservation projects focus on reducing threats to strengthening the management of some of the region's key national parks and protected areas. The **China Ozone Depleting Substances (ODS) IV Project**, an umbrella project, uses a sector-wide, policy-based approach and

Natural Resources Management

EASES has recently published the **Natural Resources Management Review**, a 10-year retrospective of NRM experience in the Region designed to assist in formulating a medium-term NRM strategy and promote innovations such as community-led initiatives. The Bank's NRM lending totaled more than \$2.7 billion, about 15 percent of all lending for the Region, and was able to leverage almost twice that amount in total project investments. Currently, 15 NRM projects are active in the regional portfolio. Of these, there are six projects in Indonesia, five in China, two in Laos, and two in the Philippines.

One of the notable NRM successes in the Region is China's **Loess Plateau Watershed Rehabilitation Project I and II**. Following the success of the first project, which covered five years of a soil erosion control program and cost about \$260 million, the government of China asked the Bank to design a follow-up project to support its efforts to further develop and refine an integrated model of small watershed management. The project will have a beneficial environmental impact in 12 river basins of 37 counties in Shanxi, Shaaxi, and Gansu Provinces, and in the Autonomous Region of Inner Mongolia. These benefits include increasing agricultural production and incomes; developing new income-generation programs in poorer provinces; and improving ecological conditions in tributary watersheds of the Yellow River. To ensure its sustainability, the project encourages people's participation during the planning and implementation phases.

is supported by the Multilateral Fund for the Implementation of the Montreal Protocol. Following the success of the halon sector program, two new sector plans have been developed and approved in fiscal 1999. The mobile air conditioning (MAC) sector phaseout program, approved in November 1998, will completely phase out the use of CFCs in the sector by 2001. In March 1999, the Multilateral Fund also approved the CFC production sector phaseout program, which provides \$150

million over 11 years. As China is currently the largest producer of CFCs in the world, this is a significant step towards accomplishing the goals of the Montreal Protocol.

Sector Work

Against a background of the changing economic and political context of East Asia, EASES is conducting several country-specific studies to compare current environmental trends with long-term trends and to assist in better

positioning East Asian countries to achieve a balance between growth and environmental protection.

The **Indonesia Environment Study** aims at developing an operationally relevant environmental policy and management agenda to help the government of Indonesia respond rapidly to emerging opportunities for more effective environmental stewardship under conditions of de facto decentralization. The **Thailand Environment Sector Strategy Note (ESSN)** provides a framework for Bank involvement in the environment sector after several years of absence from the country, and to promote dialogue and build partnerships with the government, civil society, and private sector on the major natural resource and environment challenges facing Thailand today.

In addition to this, EASES is reviewing the **Implementation of Environmental Management Plans in Large Urban Environmental Projects in China and Indonesia**. This review assesses the extent to which past environmental management plans (EMPs) were adopted and implemented in the execution of Bank projects. It evaluates the effectiveness of environmental assessments and environmental management plans in mitigating potential negative environmental impacts.



Initiatives to protect the environment would enhance the quality of life for Asian people, especially for those most disadvantaged.

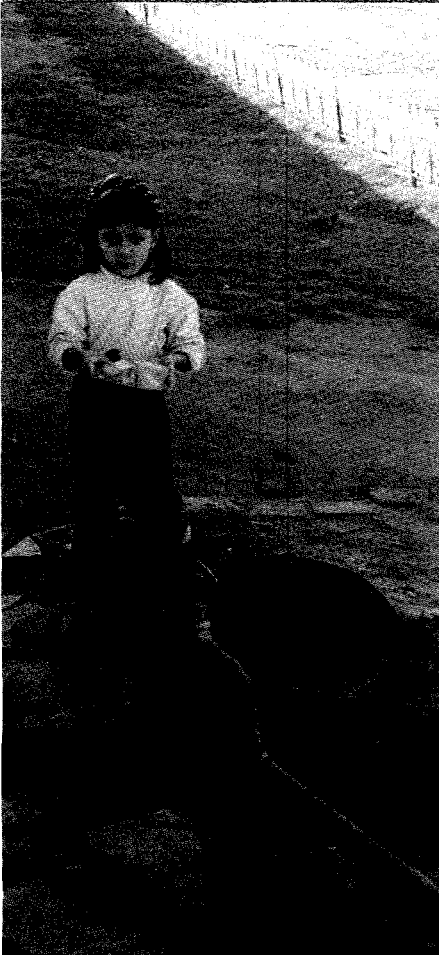
Thailand.

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ECA

Europe and Central Asia Region

Albania	Lithuania
Armenia	Macedonia, Former
Azerbaijan	Yugoslav Republic of
Belarus	Moldova
Bosnia	Poland
Bulgaria	Romania
Croatia	Russia
Czech Republic	Slovak Republic
Estonia	Slovenia
Georgia	Tajikistan
Hungary	Turkey
Kazakhstan	Turkmenistan
Kyrgyz Republic	Ukraine
Latvia	Uzbekistan



Girl rinsing brushes. Sumgait, Azerbaijan.

Most countries in the Europe and Central Asia Region are coping with the economic and environmental consequences of the transformation from centrally planned to market economies. Prior to the economic decline associated with transformation, many people in the region suffered adverse health effects from chemical, air, water, and soil pollution. The landscape was heavily scarred as well, particularly soil and surface water contamination from the use of pesticides.

Initially, the transformation was accompanied in all countries by a decline in GDP similar in magnitude to that of the Great Depression, and pollution was reduced together with output. To date, most ECA countries are still in a transition phase. They have not recovered from the decline in production and their populations are struggling with poverty, vulnerability, insecurity, and rising inequality.

As growth and recovery continue, environmental pollution may surge again in the region unless output and pollution growth can be de-linked. The most successful transformation economies—Poland, Hungary, Slovenia, and the Czech Republic—have improved environmental performance because of economic reform, investments in more efficient capital stock and environmental control equipment, and sectoral restructuring away from pollution-intensive industry. In the newly independent states, environmental improvement has been much slower, partly as a result of stagnant economic reforms and a slow restructuring process. Furthermore, limited access to capital has inhibited investment in more efficient capital stock and pollution-control equipment.

New Differences Emerging

A decade after the collapse of centrally planned systems, the regional economic

picture is now characterized by growing differences among countries in the speed and type of their economic transition, standards of living, and environmental challenges.

Most Central European countries and the Baltic Republics are focusing on accession to the European Union, including implementation and compliance with EU environmental legislation. While this requires considerable effort and immediate investment, EU support and the strictures of EU environmental law should ensure constantly and rapidly increasing standards of living without unsustainable strains on environmental resources. In the rest of the transition economies—i.e., all newly independent states except for the Baltic Republics—recovery has not yet taken place and people are struggling against poverty.

Nations in the region can be grouped in terms of their main environmental challenges.

One group includes the newly independent states in the western area of the former Soviet Union and in the Caucasus. For these nations, one of the priorities is to contain hot spots of industrial air and water pollution. Air emissions from vehicles and stationary sources—such as power generators, chemical and petrochemical plants, and ferrous and nonferrous metallurgy enterprises—have damaged human health, particularly for the region's urban population. These emissions are a major contributor to the incidence of respiratory illness, cancer, and premature death. Children are particularly affected by lead emissions, which harm their neurological development.

Neglecting the containment of harmful substances, which contributed to the contamination of groundwater and

surface water, has led to widespread health problems. This is the case in Sumgayit (Azerbaijan), where the most severe industrial pollution is linked to the use of mercury in chlor-alkali production. Organic methyl mercury from the production process, which is released into groundwater and is likely to be leaking into the Caspian Sea, is a dangerous poison to humans and can biomagnify through the food chain.

In Central Asia, where economic activity is largely dependent on agriculture and natural resource extraction, environmental problems are linked to natural resource degradation.

The best example is the case of the Aral Sea, which has been destroyed through unsustainable use of its source water. In 1954 the Amu Darya and Syr Darya rivers were diverted for agricultural irrigation. This deprived the Aral Sea of a substantial portion of freshwater flows; as a result, the sea's area was reduced by 70 percent. The resulting salinity of the arable land in the Aral Sea Basin is now undermining the health and livelihood of its 2 million inhabitants. Water diversion destroyed the Aral Sea's fishing industry, which once employed 60,000 people, and left behind a biologically dead sea. More than 40,000 square kilometers of the heavily saline sea bed have been exposed, and soil is now being blown away by frequent winds over thousands of kilometers of inhabited land.

The increasing salinity of irrigated land and water is now the biggest problem in the sea basin. Apart from negatively affecting the quality of water supply in the area, salinity reduces the productivity of over 50 percent of irrigated agricultural farmland. It is estimated that \$2 billion is lost every year (about 5 percent of Central Asia's GDP) due to salinization. As a consequence, environ-

Participation/Awareness

The ECA Region has historically been characterized by a relatively high level of environmental awareness. Over the past decade, awareness has eroded somewhat because of economic hardship and a seeming reduction in the environmental threat. In most NEAPs, environmental studies, and environmental strategy papers, participation is seen as key to the long-term success of environmental protection. Most ECA countries consider it essential to strengthen environmental awareness through an increase in financial and human resources to ensure effective communication and education of often complex environmental matters. For example:

- ♦ Armenia has launched a program to increase awareness of domestic water use, along with several other environmental awareness programs, supported by national communication and environmental education programs.
- ♦ In Bulgaria, public support—though still limited at the time—is considered the most significant factor in the success of the government's environmental strategy. Particular attention is given to environmental education, with ecology introduced as a school subject and some pilot nature schools established.
- ♦ In Hungary, the government is planning to get NGOs involved in the environmental decisionmaking process. For energy policy, the government has set up a program that relies heavily on public participation.
- ♦ In the Kyrgyz Republic, a public participation program has been developed and launched by an environmental NGO. This will provide a vehicle for consultations with local administration and local NGOs during the implementation of the NEAP.
- ♦ Romania is setting up environmental councils as forums for discussion, beginning with a pilot program in Constanta. Furthermore, guidelines for public participation are being developed. NGOs will complement governmental work in the area of environmental protection.
- ♦ Uzbekistan has set up a program of continuous environmental education and awareness aimed at all levels of the population, beginning in early childhood. Other activities include using the cultural tradition of the Uzbek people to help develop an environmental culture for the future.

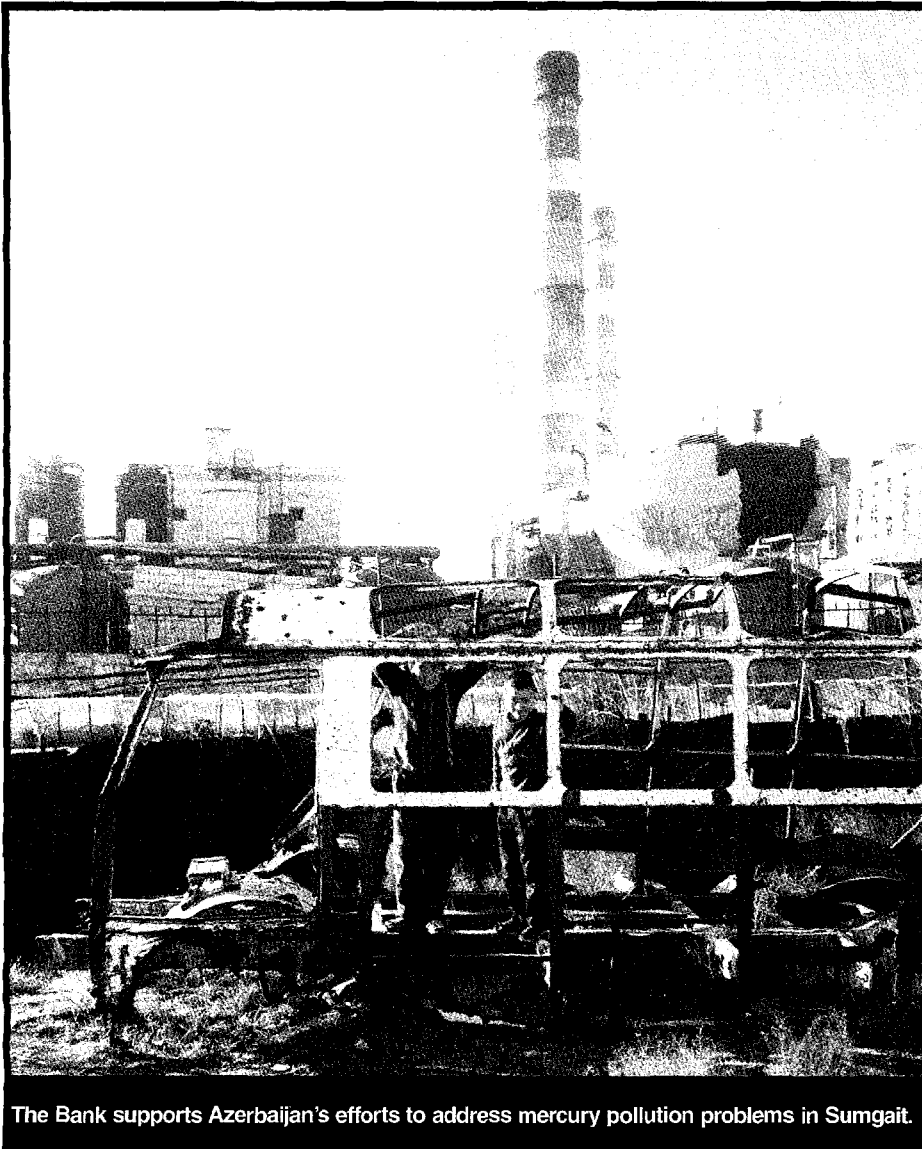
mental, social, and economic conditions in the provinces of Karakalpakstan and Khoresm have worsened considerably. With the help of the Bank, the Central Asian countries affected by the destruction of the Aral Sea are now trying to cope with a multitude of environmental and social problems.

In Kazakhstan, industrial sources—mostly related to natural resource extraction—have caused severe water pollution, contaminating rivers and groundwater. The primary reason for water pollution is the almost complete lack of adequate wastewater treatment facilities in industrial enterprises.

Furthermore, surface and groundwater sources are polluted from mining and refinery enterprises and from agro-industrial chemicals.

Environmental degradation in Kazakhstan also affects the Caspian Sea. Water pollution from inundation of wastewater stabilization ponds has become an increasing threat, and the proposed exploration and development of off-shore oil reserves in the northern part of the Caspian Sea is also expected to have significant environmental and socioeconomic consequences.

Poverty rates are increasing, particularly in Central Asia but also in the rest of



C. STEVENS

The Bank supports Azerbaijan's efforts to address mercury pollution problems in Sumgait.

ECA. For example, in Azerbaijan in 1997, 60 percent of the population had fallen below the poverty line, and 20 percent could not meet their basic nutritional needs. Partly as a result, environmental problems are arising that are more commonly associated with developing nations. The most troublesome development is the deteriorating condition of basic environmental infrastructure such as sewers and wastewater treatment plants. This often leads to a reduction in water quality and a consequent rise in infectious diseases.

Throughout the newly independent states, microbiological contaminants are present in drinking water, which greatly increases the risk of cholera, hepatitis, diarrhea, and other gastrointestinal illnesses. The Russian Federation

recently experienced epidemics of dysentery and typhoid fever in the regions of Archangels, Northern Ossetia, Rostov, and Krasnoyarsk. Cholera outbreaks and cases of dysentery were registered in Moscow and other large cities in 1995. In 1996, 875 suspected cases of bacterial dysentery were reported in Armenia, and an epidemic of the disease struck 180 people in the city of Sagarejo in Georgia. Children are particularly vulnerable to these deteriorating environmental conditions. In Turkmenistan, children under 14 account for 50–70 percent of the cases of hepatitis A and about 80 percent of the reported cases of diarrhea. In the whole of Central Asia, intestinal infectious diseases are a leading cause of infant mortality.

In the past, populations of the newly independent states enjoyed health standards higher than those in countries with comparable per capita incomes—thanks to high literacy, good public health infrastructure, and well developed municipal infrastructure and services. However, those benefits seem to be eroding quickly, owing to the wave of new poverty, whereby the rising infant mortality—especially in Central Asia and the Caucasus—appears to be mainly linked to poor quality and limited supply of safe drinking water.

The Bank Response

The World Bank's portfolio of environmental projects in the ECA Region currently consists of 17 lending operations in 13 countries. These are targeted environmental projects that are operationally managed in the environmental units. These projects represent total World Bank support of roughly \$363.2 million out of a total project cost of \$681.1 million. The projects focus on improvements in urban environmental management, improved water supply and sanitation, solid and hazardous waste management, coastal zone management, and forestry management. In addition, the Bank manages 20 GEF grants (totaling \$213 million) dedicated to biodiversity conservation, energy efficiency, alternative energy sources, and climate change.

One of the projects supports Azerbaijan's efforts to address the mercury pollution problem in Sumgait. A component of the project would excavate mercury-contaminated sludge and design a new, environmentally safe landfill for the waste.

In fiscal 1999, new projects in the ECA Region include:

- ◆ The **Georgia Integrated Coastal Zone Management Project** (co-financed by GEF) will help the government of Georgia meet its international commitments under the Black Sea Environmental Program and implement priority actions outlined in the Biodiversity Strategy. The project will support capacity building activities, improve the quality of monitoring, protect critical resources, and develop an oil spill

contingency plan and emergency response capability.

- ♦ The **Romania Biodiversity Conservation Management Project** (GEF) will establish an inter-sectoral, participatory planning, and sustainable management framework at three demonstration sites in the Carpathian Mountains.
- ♦ The **Central Asia Transboundary Biodiversity Protection Project** (GEF) will focus on mountain ecosystems, critical biodiversity, vulnerable habitat, strengthening of existing protected areas, and reinforcement of national biodiversity strategies.
- ♦ The **Czech Republic Climate Change Project** (GEF) will support installation of a combined-cycle heat and power plant at the Vetropak Moravia Glass Factory in Kyjov and modernization and expansion of the district heating network of Kyjov. This project will help reduce greenhouse gas emissions and improve local air quality by reducing the proportion of lignite in the fuel mix for heat and power generation.

Mainstreaming the Environment

Environmental concerns are increasingly incorporated into sectoral lending and structural adjustment operations. Last year, 14 of 73 projects approved in ECA included components or activities addressing environmental quality and management. The environmental components help to identify and create measures to mitigate possible negative environmental consequences, fully capture potential environmental benefits, and create an institutional base to stimulate the linking of environmental activities with sectoral development.

Projects in Kazakhstan and Albania aim to improve the infrastructure for publicly provided environmental services such as safe drinking water. Another set of projects in Tajikistan, Turkmenistan, Poland, and the Kyrgyz Republic support emergency assistance activities in the aftermath of environmental disasters.

On a regional scale, the environment group continued to support the Central

European Environmental Program and efforts to improve the long-term management of regional water bodies. The Bank is actively involved in a series of interrelated programs for the Danube/Black Sea, Baltic Sea, Aral Sea Basin, Volga Basin, Caspian Sea, and Mediterranean, addressing issues such as pollution of international waters, management of coastal ecosystems and marine resources, and sustainable development of local communities.

Beyond development and supervision of the project portfolio, technical assistance activities included support for preparation of National Environmental Action Plans (Bosnia-Herzegovina, Croatia, Kazakhstan, Turkey, Turkmenistan, and Uzbekistan) as well as biodiversity action plan/strategies (Albania, Croatia, Georgia, Macedonia, and Moldova). Furthermore, assistance was extended to four EU accession countries in developing least-cost ways to comply with EU environmental directives.

Future Challenges

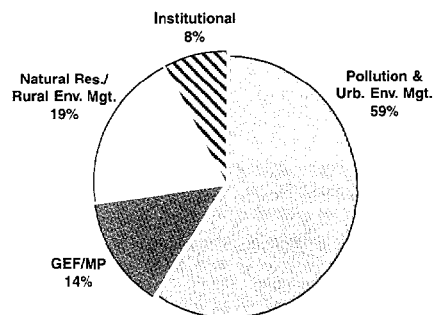
Compliance with EU environmental law. EU accession countries must continue to adapt to European environmental rules and regulations and to implement the corresponding laws. In particular in the area of wastewater treatment, considerable financial efforts will be necessary. Bank assistance will be largely in the form of technical support to identify least-cost solutions.

Facing The Environmental Heritage.

Some environmental problems left over from the Communist era will require extreme care and timely action. The prime example is the case of the Aral Sea mentioned above.

Similar consequences may still be avoided for people living in the area downstream of the Irtysh River from East Kazakhstan oblast in Kazakhstan. More than 6,000 tons of kerosene, spilled at a military airbase in Semipalatinsk, are in groundwater a few hundred meters from the Irtysh River. If this hazardous waste were to leak into the river, the health and livelihood of people over hundreds of square kilometers would be threatened. This threat, however, has been recognized, and

Projects Active during FY99 with Significant Environmental Objectives



planning has begun to clean up the hazardous waste and to secure a safe water supply for the region.

Environmentally sound economic recovery. A second set of problems stems from poverty caused by the economic collapse in the aftermath of the communist period. Economic recovery is necessary to tackle those problems, and the prime challenge is to achieve such a recovery without hazardous levels of industrial pollution and unsustainable use of natural resources.

The Former Yugoslavia. Finally, the conflict and post-conflict areas in the former Yugoslavia are facing a multitude of challenges, among which restoration of the destroyed environmental infrastructure is just one. If the international effort to restore security for war refugees is successful, environmental cleanup of the war will become a necessary condition for the resumption of normal life. In that context, the presence of landmines is particularly vexing, since it impedes reconstruction both of houses and infrastructure. In Bosnia-Herzegovina, forests and soil were most heavily impacted by the war, again because of landmines. The Bank is supporting reconstruction efforts in the former Yugoslavia. There are currently three projects (**Wood Supply and Forest Management Project** in Bosnia-Herzegovina; **Coastal Forest Reconstruction Project**, and **Eastern Slavonia Reconstruction Project** in Croatia), as well as mine clearing both in Croatia and in Bosnia-Herzegovina.

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LCR

Latin America and Caribbean Region

Antigua and Barbuda	Honduras
Argentina	Jamaica
Bahamas, The	Mexico
Barbados	Nicaragua
Belize	Organization of Eastern Caribbean States
Bolivia	Panama
Brazil	Paraguay
Chile	Peru
Colombia	St. Kitts and Nevis
Costa Rica	St. Lucia
Dominica	St. Vincent and the Grenadines
Dominican Republic	Suriname
Ecuador	Trinidad and Tobago
El Salvador	Uruguay
Grenada	Venezuela
Guatemala	
Guyana	
Haiti	



Fishermen, Mexico.

The Latin America and Caribbean Region faces a diverse and complex set of environmental and social development challenges. With a largely urban population exceeding 400 million people, the region increasingly must deal with problems such as urban-industrial pollution, traffic congestion, and transportation-related air pollution. At the same time, the region's rich forest and biodiversity resources are under pressure. The loss of these resources has dire implications both for the region and for the global environment as well.

During fiscal 1999, the LCR Region continued to develop an active portfolio of projects focusing on solutions to pollution problems in urban and industrial areas. A flagship regional program is the Clean Air Initiative (see Box). The main themes addressed by the projects under preparation or approved during 1999 are: (a) increasing the capacity to regulate and enforce pollution prevention laws; (b) working with the private sector to adopt environmental management systems in small and medium enterprises; (c) incorporating air quality management in long-term transport and traffic planning; and, (d) seeking cost-effective measures to address coastal pollution from sewerage, solid waste, and oil spills.

Other high priorities for the region include enhancing participation, sustainable forest management, and biodiversity conservation.

Disaster management is an emerging priority in the region, particularly in the aftermath of the tremendous damage in several Central American nations caused by Hurricane Mitch in late 1998. Apart from short-term needs engendered by the crisis, the Bank is actively helping nations in the region reduce their

vulnerability to future disasters (see *Box*, page 25).

Building Participatory Strategies

Projeto Umidas. In 1997 and 1998, a participatory process that involved more than 1,000 people helped design a future scenario for the Brazilian state of Rondonia. This scenario, combined with the results of expert projections, provided the basis for designing sustainable development strategies. The first phase of the study provided a diagnosis of Rondonia, a set of future scenarios and an agenda of 10 major priorities to be pursued. The second phase synthesized the results of the study and ways to orient future development policies. A report entitled *A Participatory Approach to the Sustainable Development of Rondonia* highlights the importance of considering the whole life cycle of an initiative and the multiple dimensions of sustainability—economic, social, environmental, and political-institutional.

Environment Policy Reform. In the Dominican Republic, the **National Environmental Policy Reform Project** (\$3 million) will conduct background studies, test innovative environmental policy initiatives with pilot projects, and prepare a national environmental management program in a broad-based, participatory manner. The project enjoys the support of major political parties, civil society, and the private sector.

Sustainable Forest Management

Imataca Forest Reserve, Venezuela. The Bank is assisting Venezuela in analyzing policy options for the vast mineral and biological resources of the 3.6-million hectare Imataca Forest Reserve. Imataca is also home to some 10,000 indigenous people, along with non-indigenous Venezuelan and non-

Responding to Natural Disasters in the Latin America Region

On a wide variety of fronts, the World Bank is working to help rebuild nations affected by natural disasters and to reduce the risk of damage from future events.

PROARCO. The **Amazon Emergency Fire Prevention and Control Project** was approved in fiscal 1999. It will support the Brazilian government in the prevention and eventual suppression of fires in the Amazon region in the aftermath of the fires that devastated the State of Roraima in February 1998. The project provides support for an early warning network using satellite technology and for the training of local fire brigades as a first line of defense against fires. It also seeks to educate farmers and ranchers about the proper use of fire in their activities.

Hurricane Mitch. Through a project funded by the Netherlands Government/World Bank Partnership Program, the Bank is supporting the Central American Integration Secretariat's (SICA) effort to ascertain regional needs for the reconstruction and transformation process emerging out of the Hurricane Mitch disaster, which struck the Honduras/Guatemala region in late 1998. The project is undertaking a study on vulnerability and sustainability indicators for the region.

OECS Disaster Management Program. This project, which was conceived before Hurricanes Georges and Mitch hit the region, is assisting the Organization of Eastern Caribbean States (OECS) to reduce their vulnerability to disasters by constructing physical works, improving disaster planning, and conducting community-level training. The program's first stage provides \$25 million in assistance to St. Kitts and Nevis, Dominica and St. Lucia. Disaster awareness and training of local disaster committees is being emphasized in each country.

Dominican Republic. An emergency operation was initiated immediately after Hurricane Georges hit the Dominican Republic in September 1998. The project, sponsored jointly with the Inter-American Bank and others, cost about \$111 million. Key features of the project include environmental damage prevention and mitigation. The Bank also supported efforts to improve the country's capacity to identify vulnerable areas, prepare disaster plans at the national and community level, receive and disseminate early warnings, and adopt and enforce risk-mitigation standards and codes.

Mexico. The Bank's Disaster Management Facility published *Managing Disaster Risk in Mexico: Market Incentives for Mitigation Investment*, which analyzes various aspects of natural disaster management in Mexico. As a follow-up, the Bank is preparing a **Natural Disaster Management Project** for Mexico, which will focus on improving the operations of Mexico's Fund for Natural Disasters (FONDEN) and developing mitigation programs for implementation through the federal ministries.

Venezuelan inhabitants, the majority of whom work in mining operations and support sectors. Conflict has arisen after the government issued a new management plan allowing increases in mining and commercial forestry. Based on socioeconomic and biophysical

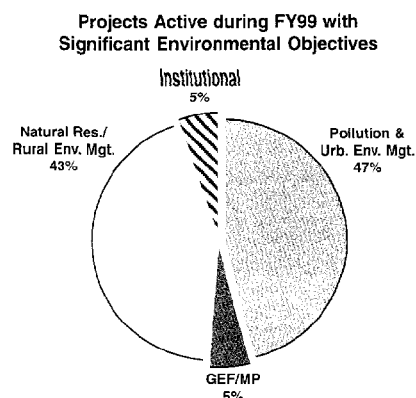
analysis supported by the Bank, the government announced that a new plan will be issued within six months. The Bank's assessment of the Imataca conflict is that environmental change is not a technical phenomenon but largely the result of political and socioeconomic

processes among actors at various levels of organization.

Peru Forest Concession. Peru is proposing a new forest management regime that would put 25 percent of the current uncontrolled national forest under permanent forest production. Under this initiative, the **Biabo Permanent Forest Zone Project** in the Peruvian Amazon is a pilot project designed to capture increased revenue by privatizing public forests while demonstrating that sustainable forest management can be achieved through private concession. The Alliance for Forest Conservation and Sustainable Use (a joint project of the Bank and the World Wide Fund for Nature) is sponsoring expert workshops to review the concession process, identify gaps and weaknesses, and propose alternatives to minimize the environmental and social risks associated with these activities.

Biodiversity Conservation

Biodiversity Strategies. The governments of Haiti and the Dominican Republic recently began work on national biodiversity protection plans, which are financed by GEF through the Bank. Both governments are committed to eventually preparing a joint biodiversity protection plan that would coordinate protection for the island of Hispaniola. These projects have become vehicles for



promoting the exchange of environmental information and coordinating the preparation of other joint projects – such as the establishment of bi-national parks and biosphere reserves.

The Haitian Ministry of Environment is also continuing to successfully implement the **Forest and Parks Protection Technical Assistance Project**. This 6-year, \$21.5 million credit focuses on establishing effective protected area management in Haiti by reducing poverty in the buffer zones of three critical national protected areas and reforming management institutions. The long process of delivering effective rural development services to local populations and establishing comanagement institutions is underway.

Mesoamerican Biological Corridor (MBC). The Bank has continued to support this conservation/development concept, which is strongly promoted in Central America under the leadership of the Central American Commission on Environment and Development (CCAD). In addition to 30 projects linked to the MBC, the LCR Region is currently managing about \$6 million in trust funds to support consolidation of the program and reduce disaster vulnerability through improved natural resource management. Some of these regional activities include preparation of a 1:250,000-scale ecosystem map for all of Central America, support to CCAD (in coordination with UNDP and UNEP), training of indigenous and Afro-Caribbean populations in the MBC in better resource management, and support for a communications strategy for the MBC.

Pollution Management

With a predominantly urban population, pollution problems in Latin America bear many similarities to those of urban areas in developed nations, most notably air pollution. The Bank is strongly supporting efforts to reduce and more effectively manage urban air pollution. One important example is the **Clean Air Initiative in Latin American Cities** (see *Box*).

Other pollution management projects in the region include:

The Clean Air Initiative in Latin American Cities

This joint undertaking of the Latin America Region and the World Bank Institute emphasizes outreach, partnering, and dissemination. The initiative is governed by a steering committee composed of representatives of city governments, private sector companies, development banks and agencies, and NGOs and foundations.

The program's main goals are to (a) promote the development and enhancement of clean air action plans; (b) advance the exchange of knowledge and experience among all partners; and (c) foster public participation and the active involvement of the private sector for the accelerated introduction of cleaner technologies.

The Clean Air Initiative has carried out the following major activities:

- **Development of a Clean Air Action Plan for the metropolitan area of Lima-Callao, Perú.** The Bank, the Clean Air Management Committee for Lima-Callao, and local authorities are developing the plan with the assistance of international experts that visited Perú in February, March, and April 1999.
- **Clean Air Action Plan for the Mexico City Metropolitan Area (MCMA).** Initiative activities in Mexico City are closely coordinated with the preparation of the Air Quality Management II Project for the MCMA, which supports preparation of the Third Air Quality Management Plan.
- **Clean Air Web Site and Distance Learning** (www.worldbank.org/wbi/cleanair). The objective of this activity is to promote regional communication, information sharing, and dissemination of best practices on air quality management.

The next two activities will be city-specific workshops in Rio de Janeiro and Buenos Aires.

- ♦ *Mexico.* **PROAIRE II** is a multisectoral initiative that aims to improve air quality in Mexico City in a cost-effective way. The project supports a 10-year action plan currently being formulated with the Mexican authorities
- ♦ *Argentina.* Launched in 1999, the **Pollution Management Project** is intended to improve the central government's capacity to promote collaboration in solving pollution issues from within government and with the private sector. Examples of collaboration include support for adoption of environmental management systems in small and medium enterprises.
- ♦ *Uruguay and Argentina.* With cofinancing from GEF, several projects intended to protect the coastal environment of Argentina and Uruguay are under preparation during 1999. These projects will address oil spill prevention and mitigation, improved pollution management at commercial ports, sustainable fisheries management, and institutional strengthening.

Global Environment

GEF medium-sized grants. While past programs often relied on large national interventions, today's portfolio is more diversified and includes smaller, localized initiatives managed by civil society. During fiscal 1999, seven Medium-Size Projects (MSPs) were approved to provide support for NGO programs related to biodiversity conservation. MSP activities range from promoting conservation in aquatic ecosystems (Ecuador) to building consensus for conservation at the ecoregion/landscape level on private lands (Venezuela).

Bank/GEF Projects. Bank/GEF assistance is being requested for a broad range of interventions that have in common the goal of harmonizing sustainable development with conservation of critical habitat. In Mexico and Peru, projects are under preparation to assist indigenous peoples to create their own communal reserves on ancestral lands. In Costa Rica, an ecological services easement program will consolidate the Mesoamerican Biological Corridor in critical habitats. In Brazil, the government has launched an

ambitious program to bring 10 percent of the Amazon under effective protection within the next 10 years. In Mesoamerica, a four-country initiative is being developed to protect and ensure the sustainable use of the Great Barrier Reef System of Mexico, Belize, Guatemala, and Honduras.

Montreal Protocol Implementation.

During fiscal 1999, new operations were prepared for Colombia and Ecuador. In addition, an innovative non-grant financing scheme will be tested in Mexico using concessional financing for replacement of CFC-chillers (building air-conditioning systems) with energy-efficient systems. This pilot is the first Montreal Protocol initiative to date that is being cofinanced by the local government.

Climate Change. The **National Strategy Study (NSS)** Program is a collaborative initiative between the government of Switzerland, the Bank, and other bilateral donors (e.g., Finland, Austria, Germany, Australia) to assist interested country governments in assessing their role in the Clean Development Mechanism (CDM), identifying potential investment projects, and developing national policies regarding the CDM.

NSS studies identify a pipeline of greenhouse gas (GHG) abatement projects and potential sources of financing. With a better understanding of the international demand for GHG offsets, the traded volume and the price of potential offsets, the country can make informed decisions about market options and opportunities. These decisions include options for establishing the necessary domestic institutions and other regulatory mechanisms that may be necessary for effectively engaging in the GHG offset business.

Amazonia Initiative. Early in 1999, the World Bank Institute and the Latin American Region jointly sponsored a

meeting in Venezuela on tropical forestry, including its relation to carbon and the climate convention. The occasion provided an opportunity to invite the ministers and/or vice-ministers of environment of Bolivia, Brazil, Colombia, Guyana, Ecuador, and Venezuela to a subsequent meeting in Bolivia to discuss the Clean Development Mechanism and how Amazon forests related to it. A third meeting in Quito explored the management of



environmental and social impacts of oil and gas concessions on the Andean countries of the Amazon basin.

New Regional Initiatives

Established in 1982 as a mechanism to exchange information and promote regional collaboration, the Forum of Environmental Ministers is now the region's principal political intergovernmental body on environmental matters.

The Forum established four priority areas for regional cooperation: (a) institutional frameworks, policies, and instruments for environmental manage-



R. HUBER

ment; (b) integrated watershed management; (c) biological diversity and protected areas; and (d) climate change. At subsequent meetings, IDB and UNDP joined forces with UNEP to provide an Interagency Technical Committee (ITC) to support the Forum. In September 1998, the Bank and FCI.AC became part of the Technical Interagency Committee.

At present the Bank is supporting the LAC Ministerial Forum and administering resources provided through the Dutch Trust Fund for the following activities:

- ◆ A focused report on environmental and sustainable development trends in the region to be presented in the fall of 1999.
- ◆ Development of a ministerial workshop to exchange information on a subject of specific interest to be defined by Ministers in ongoing consultations.
- ◆ Strengthening of the Central American Commission on Environment and Development through the establishment of an interagency technical assistance unit. This facility would receive initial financial support from UNDP, UNEP, and the World Bank (through the recently approved Netherlands/World Bank Partnership Programme).
- ◆ An environmental and vulnerability assessment of Central America to guide reconstruction and future development actions.

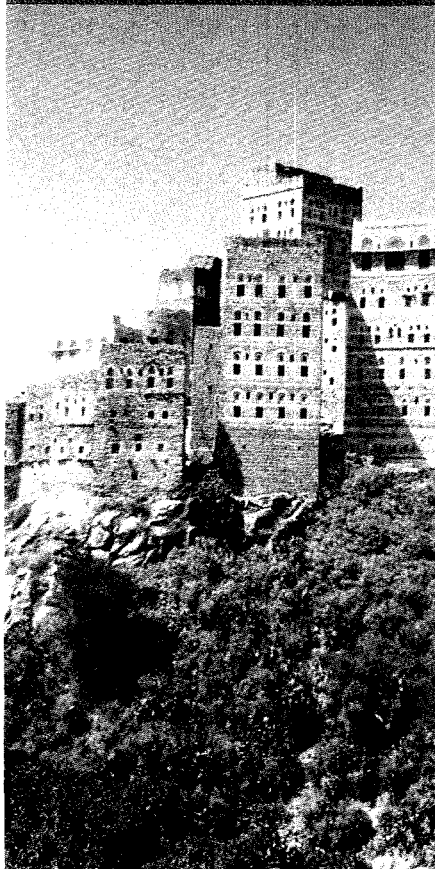
Images this page:
 Top: Panamanian flora.
 Bottom: Kuna woman, San Blas Islands, Panama.

This article was prepared by the staff of the Latin America Environmental Unit (202) 473-1841, fax (202) 676-9373.

MNA

Middle East and North Africa Region

Algeria	Morocco
Bahrain	Oman
Egypt, Arab Republic of	Qatar
Iran, Islamic Republic of	Saudi Arabia
Iraq	Syrian Arab Republic
Jordan	Tunisia
Kuwait	United Arab Emirates
Lebanon	West Bank and Gaza
Libya	Yemen, Republic of
Malta	



Traditional houses in Sana'a, Yemen.

Over the course of the past 30 years, the countries of the Middle East and North Africa (MNA) Region have experienced a period of unprecedented economic growth (1970–1985) followed by a long period of economic stagnation (1985–1999) that only now shows signs of ending. Based on the oil boom of the 1970s, MNA's rapid growth resulted in a significant decrease in the level of absolute poverty, a 50 percent reduction in the infant mortality rate, and increased access to safe water and sanitation for both rural and urban populations. The economic stagnation brought on by the drop in oil prices in the mid-1980s brought growth to a standstill and slowed improvements in other social well-being indicators. The majority of MNA countries are still viewed as middle-income and, happily, improvements both in environmental awareness and governance of environmental issues have continued over the past 15 years, despite slow economic growth.

In 1999, the region's population is expected to grow by 3.3 percent, which is equal to that of South Asia. The MNA Region is plagued by high and increasing unemployment rates. Education and health standards, particularly for women and rural populations, are still behind those of similarly developed countries in other regions. And, although great gains were made during the late 1970s and early 1980s, 45 million people live without access to safe water and 85 million people live without access to proper sanitation. Five countries are within 20 years of depleting economically available oil reserve; 11 countries are currently consuming more than 100 percent of their renewable water resources.

Food self-sufficiency and rural employment programs result in over-use of marginal land. Rapid and uncontrolled

urbanization results in increasing poverty, worsening air pollution, and poor sanitation in urban centers. The national environmental agencies, which for the most part did not even exist a decade ago, are just now beginning to develop as professional institutions with real enforcement power; however, they still have a long way to go. In short, the costs of decades of poor natural resources management continue to mount. They include:

- ♦ Impairment of public health;
- ♦ Agricultural and fishery productivity losses;
- ♦ Reduction in tourism revenue;
- ♦ Degradation of ecosystems; and
- ♦ Loss of biodiversity and reduction in amenity values.

Addressing the environmental challenges described above requires capitalizing on the positive linkages between economic growth, poverty reduction, and environmental sustainability. Restoring growth is a critical task in the region. Growth must be widely shared and sustained and depend less on the exploitation of rapidly declining oil, water, and land resources, and more on the skills and capacity of the region's people. The future of development in the region must focus on establishing the policy and legal frameworks necessary for sustainable development and growth.

Meeting the Challenges

In the 1995 publication *Towards Sustainable Development: An Environmental Strategy for the Middle East and North Africa Region*,¹ a three-pronged approach was put forth that emphasizes:

- ♦ Strengthening environmental institutions and increasing public participation;

- ◆ Improving natural resources management; and
- ◆ Arresting emerging pollution problems.

The MNA Countries have each made significant progress towards that strategy's objectives through both capital and human investments.

While the environmental threats facing the MNA countries will not soon diminish, the ability of the countries to mitigate those threats in ways that promote sustainable development are improving every year. National and local environmental institutions are being strengthened. Legal frameworks are being put into place and laws are being enforced. Environmental issues are being addressed by economic, planning, and sector ministries. Environmental NGOs are having more influence at the national and local levels. Similarly, the media is increasingly reporting on environmental issues, helping to generate public pressure for environmentally responsible activities.

The World Bank remains committed to working with each of the MNA countries to develop policies that address poverty in a sustainable manner. National Environmental Strategies and/or National Environmental Action Plans (NEAPS) have been completed in seven of the MNA countries (Algeria, Egypt, Iran, Jordan, Lebanon, Morocco, Tunisia, and Yemen). The Syria and Algeria NEAPs are scheduled for completion in fiscal 2000. The Bank is working with each of these countries to include recommendations made in the NEAPS in the countries' overall development strategy.

One area of economic growth that should promote greater sustainability is that of freer trade with the European Union, which is quickly coming to

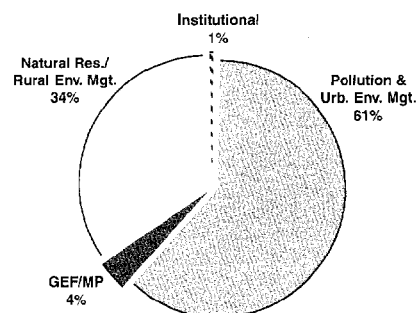
fruition. Tunisia, Morocco, and Egypt have already concluded their Association Agreements with the European Union; others like Algeria, Lebanon, Syria, and Jordan are still negotiating those agreements. Meeting EU standards on exports should result in the reduction of waste and improved environmental standards. Free trade should also encourage greater privatization, allowing market forces to help reign in unsustainable use of natural resources. The Bank, through METAP (see below), is working with many of the MNA countries on the issues of trade and environment in order to prevent environmental issues from being used as a non-tariff barrier to trade and to ensure that free trade with Europe does not mean promotion of poorly regulated domestic industry.

Working within the context of free trade and privatization, a more holistic view of development—like that of the Comprehensive Development Review—is seen as a possibility for the region.

The Investment Portfolio

In fiscal 1999, the World Bank approved 25 investment projects for a total of nearly \$1.2 billion in loans and \$440 million in International Development Association (IDA) credits. Of those projects, one was in the Environmental Assessment (EA) Category A, which requires a comprehensive environmental impact assessment and environmental monitoring plan. Another 13 were in the EA Category B, requiring substantive environmental review, and 11 were in EA Category C, having little to no negative environmental impact. In fact, approximately \$740 million out of the total \$1.64 billion approved in fiscal 1999 includes environmental components to be monitored during implementation. The MNA countries are committed to working with the Bank and our partner institutions to ensure

Projects Active during FY99 with Significant Environmental Objectives



that their development investments meet the challenge of environmental sustainability.

The Category A project financed in fiscal 1999 is the **Sana'a Emergency Power Project** in Yemen, which is a \$54 million IDA Credit. It will begin a phased approach for rehabilitation and development of the Power Sector. It will help guarantee a power supply for one of the region's poorest cities well into the next century.

The Category B projects include:

The **SOHAG Rural Development Project** in Egypt is a \$100 million IDA Trust that uses an innovative approach to improving rural services and reducing poverty through a multi-sectoral approach that includes improving irrigation and transportation infrastructure, a line of credit for villagers including women, and emphasis on improving women's education;

The **Private Sector and Agricultural Development Project** in Egypt is a \$225 million loan and \$75 million IDA credit promoting sustainable rural development and pioneering the use of financial intermediaries to finance rural development;

The **Amman Water and Sanitation Project** in Jordan is a \$55 million

IBRD loan to improve the efficiency, management, operation, and delivery of water and wastewater services for the Amman Governorate (AG);

The **Lakhdar Watershed Management Project** in Morocco is a \$4 million IBRD loan to pilot a participatory approach towards improved land use and natural resources management in mountainous areas;

The **Bethlehem 2000 Project** in the West Bank and Gaza is a \$25 million IDA Credit from the trust fund for West Bank and Gaza to provide support for the staging of the Bethlehem 2000 celebration activities and extend the existing MIDP to the Bethlehem area municipalities. In addition, the project begins to address some of the issues of tourism development and cultural preservation specific to these municipalities;

The **Solid Waste Management Project** in the West Bank and Gaza is an \$8 million IDA Credit from the trust fund for West Bank and Gaza designed to demonstrate environmentally sound and sustainable solid waste management (SWM) systems in the West Bank; and

The **Solid Waste and Environment Project** in Yemen is a \$20 million IDA Credit designed to improve solid waste collection in 15 to 20 medium- and small-sized towns in Yemen, and to introduce sustainable, locally based management of these services. The project also would strengthen environmental management to support (a) environmental assessments; (b) pilot establishment of the Environment Fund; and (c) regulations and pilot community-based protected areas and coastal zone management.

Beyond National Borders

The MNA countries are engaged in several regional environmental initiatives:

The **Mediterranean Environmental Technical Assistance Program** (METAP) celebrated its 10th year of partnership between the countries of the region² and the European Commission, the European Investment Bank, the United Nations Development Program,

and the World Bank. Now in its third phase, the METAP Regional Facility (MRF) in Cairo, Egypt, developed five pre-feasibility and feasibility studies for investment projects. One of these, Diyarbakir Sewerage, resulted in one loan from the European Investment Bank. There are now seven studies under preparation by the MRF. In addition, the MRF is working with each of the METAP countries to build capacity for environmental management. More information about METAP can be found on the World Wide Web at www.METAP.org.

In addition to the activities of the regional facility, METAP regional activities like MEDPOLICIES and the EIA Initiative (see Box) are promoting the mainstreaming of environmental issues into sectoral policy. In January 1999, MEDPOLICIES, which is implemented by the Harvard Institute for International Development, held a regional seminar in Tunis to publish the initial results of studies carried out in each of the METAP Countries. Cyprus, Egypt, Jordan, Morocco, Syria, Tunisia, and Turkey presented studies on Trade and Environment; Albania, Croatia, and Slovenia presented studies on Environmental Liabilities and Privatization; and Algeria, Lebanon, and the West Bank and Gaza presented studies on the Economic Impact of Air Pollution. Based on the results of those initial studies, MEDPOLICIES is now working with selected countries to pilot methods of stronger policy dialogue between environment ministries (or national environmental authorities) and the policymaking ministries like economy, trade, and planning.

The **MENA/MED Water Initiative** is a partnership among the countries of the Mediterranean, Middle East, and North Africa regions; the European Commission; the European Investment Bank; the World Bank; and the international donor community. Its purposes are to help countries formulate and implement policies and strategies to achieve sustainable management of limited water resources and sustainable economic growth; and to mobilize financial resources for the implementation of environmental action programs. A second regional seminar on national

water policy reform has been held in Amman in May 1999. Follow-up activities under preparation include the organization of a workshop to be held in Yemen at the end of 1999 on sustainable management of groundwater resources.

The Amman seminar was the second in a series of seminars organized by the MENA/MED Water Initiative. Participants included 52 delegates from 15 countries, together with 37 representatives from 18 donor agencies, governments, and NGOs. The first seminar was held in Cairo in June 1998 to exchange global experiences and to consider the relative merits of alternative water policy options. The main challenges in the water sector that the region faces were identified as:

- ♦ Water scarcity, quality deterioration and drought;
- ♦ Weak institutional framework and financing;
- ♦ Water-intensive agriculture and irrigation policies.

The Amman seminar moved the debate on water policy reforms from an international to a regional perspective, with the discussion focusing on the cases of Jordan, Oman, and Tunisia. These countries have contrasting hydrological and economic characteristics and their different experiences hold useful lessons for all countries in the region.

The Regional Initiative for Collaboration to Control Natural Resource Degradation (Desertification) of Arid Lands in the Middle East

continues to develop field activities and elicit donor support for developing solutions for natural resource degradation. As part of the Middle East peace process, this program links scientists and planners from Egypt, Israel, Jordan, Tunisia, and the West Bank and Gaza so they can share experience and expertise in desert land management. The first phase of the Initiative will end in December 1999. Implementation of the Initiative's national activities on the ground is substantial. Regional collaborative efforts have been constrained by the delicate political situation in the region, but current positive developments have already renewed

efforts to improve this vital aspect of the Initiative. Support for the Initiative remains strong and all of the partners have expressed enthusiasm and governmental backing for a next phase. An external review of the Initiative has been conducted and the "blue-ribbon" panel has made recommendations for the next phase that will be taken up at the next Steering Committee meeting in late September 1999.

The **Gulf of Aqaba Environmental Action Plan**, another peace process initiative, links Egypt and Israel in collaborative mechanisms to strengthen capacity to protect marine biodiversity and the coastal zone. The environmental action plan for Egypt under this initiative was prepared and discussed with officials from government, private, and public sector entities.

The **Red Sea and Gulf of Aden Environmental Strategic Action Program (SAP)** was approved by the World Bank's Board in March 1999. This \$19 million Global Environment Facility project is being jointly executed by the World Bank, the United Nations Development Program, and the United Nations Development Program through The Regional Organization for the Conservation of the Environment of the Red Sea and Gulf of Aden, which is based in Jeddah. The Bank is implementing two components, Reduction of Risks to Navigation and Integrated Coastal Zone Management. This partnership of the littoral states and international agencies aims to preserve the fragile environment by preventing pollution and unplanned coastal development in one of the world's most pristine marine environments. The prevention and readiness aspects of the SAP are of particular importance given the high volume of marine traffic through the region, especially oil tankers.

In the **Caspian Environment Program**, Iran and its neighbors (Azerbaijan, Kazakhstan, Russia, Turkmenistan) around the Caspian have joined with the World Bank, TACIS, UNDP, and UNEP to counter the negative effects of sea-level fluctuation and industrial pollution, and to promote

the sustainable use of the Caspian's unique biological resources. At a meeting in Iran in May 1998, the countries adopted the organizational framework for the program and a draft GEF program brief, which was accepted by the GEF Council in November 1998. Final arrangements are currently under negotiation to bring this project to the Bank's Board and begin implementation.

The Challenges and Opportunities Ahead

The Environmental challenges facing the MNA Region are well known and the countries are each making significant progress in addressing them. The World Bank is committed to working with those countries to improve their overall development programs and increase the knowledge base necessary to accomplish that within the framework of the MNA Regional Environmental Strategy. Specifically, the continued strengthening of national environmental institutions will allow the countries to bring environmental issues into the mainstream of their development policy and assist the Bank in ensuring those issues are included in the Country Assistance Strategies and Comprehensive Development Framework. The strategic emphasis is on institutional frameworks in environmental management, as well as actions to strengthen knowledge management, particularly in the areas of water and sanitation and financial intermediaries.

The Bank remains committed to assisting the countries to develop stronger and more reliable environmental safeguard policies. To this end, the Bank is also working with the countries to develop stronger national and local oversight institutions. As the countries finish their NEAPs, the Bank will work with them to implement and update them. The Bank is also beginning the process of updating the 1995 MNA Environmental Strategy based on the progress made over the past few years.

The MNA Region is poised to enter the new millennium with ever closer partnerships with its neighbors, and with stronger national institutions for improving the environment.

METAP EIA Initiative

The **METAP Environmental Impact Assessment Initiative** responds to the need for EIA systems, which are an important emphasis of the Euro-Mediterranean Partnership and the Bank's safeguard policies. The initiative is designed to strengthen EIA systems in the METAP countries through linkages between the EIA Center at Manchester University and the Environmental Assessment (EA) Center at the International Center for Environmental Technology (CITET) in Tunis. The outcome of those linkages, which are based on CITET's existing EIA training program and the joint work begun with the EIA Center at Manchester University, would be to provide the region with a long-term venue for developing south-south and north-south cooperation, EIA on-the-job training, and information dissemination. The specific activities that are being carried out under the EIA Initiative are:

- ♦ **Documentation resource.** CITET will continue to develop a library of EA legislation, procedures, guidelines, technical and academic reports and papers and EA reports, from all countries in the region and from relevant international organizations. A database of these documents will also be maintained and made readily accessible for searching.
- ♦ **Seminars and workshops.** The Center plans to organize at least two region-wide workshops on EA topics of current interest in methods and techniques for developing EIAs and best practices for reviewing EIAs, as well as specialized on-the-job training in water and wastewater treatment, industrial and air pollution, and solid waste management. CITET's existing laboratories will allow for hands-on training for the participants.

¹ World Bank Report #13601-MNA, February 17, 1995.

² METAP countries in the MNA region are Algeria, Egypt, Jordan, Lebanon, Morocco, Syria, Tunisia, and West Bank and Gaza.

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SAR

South Asia Region

Afghanistan
Bangladesh
Bhutan
India
Maldives
Nepal
Pakistan
Sri Lanka



Market in India.

Over the past year, the World Bank's South Asia Region committed itself to finding better ways to achieve results on the ground. This involves shifting the emphasis much more toward development *outcomes*, specifically how environmental programs can benefit the poor. This is being accomplished through systematic efforts at partnerships with local communities and aid agencies, and a multisectoral approach by World Bank staff. To improve the effectiveness of knowledge transfer and technical assistance, the World Bank's South Asia Region is shifting many of its day-to-day activities to the field offices, where high-quality staff are in a position to offer hands-on advice on a continuous basis.

New Thinking on Environmental Issues

Focusing on outcomes. In South Asia, environmental measures are among the most cost-effective ways to reduce illness and death in the population. Some 20 percent of the total burden of disease is due to environmental causes—over half from diarrheal diseases and lack of water and sanitation. In India alone, illnesses related to water and sanitation lead to about 0.5 million deaths a year of children under five, and indoor air pollution from cook stoves is estimated to cause another 0.5 million deaths a year of children and women. Urban air pollution in South Asian cities and industrial pollution account for “only” 3 percent of the burden of disease, which still translates into over 100,000 premature deaths a year, and almost 2 billion work days of lost or reduced productivity. Out of this, automobile pollution—while serious—may be responsible for only a small fraction of the total burden of disease from environmental factors (under 1 percent of the total disease burden).

To deal with these overwhelming problems, approaches must be single-mindedly focused on the desired *outcome*: How can activities and projects (whether supported by the World Bank, local or international partners) directly contribute to health improvements and poverty reduction—for example through a combination of measures to address water and sanitation needs, indoor air pollution, female education, nutrition and vaccination programs? The World Bank's South Asia Region is systematically refocusing its activities toward this “outcome-based approach.” This will help shift the emphasis away from “output delivery” to the critical changes in behavior and institutional performance that contribute to improving the well-being of the poor. No longer will success be measured in terms of the number of projects, or the construction and installation of hardware, or even the number of staff working on a given activity.

Building Partnerships. As part of an effort to promote a coordinated and holistic approach to development assistance in the region, a dialogue has been initiated with multilateral and bilateral agencies working in South Asia. Initial efforts in Sri Lanka have been very promising; for example, a round-table discussion with donors in Colombo helped identify a number of critical concerns that undermine the effectiveness of development assistance. The round-table identified future opportunities for pursuing a more coordinated approach to external assistance. A common approach and joint dialogue with the Asian Development Bank led to major commitments on the part of the government of Sri Lanka to initiate critical institutional reforms as a prerequisite for further lending to the wildlife sector.

The South Asia Region has taken the lead in promoting an innovative

approach in fostering understanding between development staff and local communities. In the **Village Immersion Program**, organized with the help of local NGOs, Bank staff volunteer to live in South Asian villages and experience the everyday life of the villagers. The staff gain valuable insight into the complex interlinkages among environmental, social, and economic development and have reported a renewed commitment to the Bank's central mission of poverty alleviation. Staff have further mainstreamed this approach into regular Bank activities by initiating immersion-type supervision missions for some rural water supply and sanitation projects; under this approach, mission-team members reside in the villages where components of the projects are being implemented.

Building collaboration. The integration of environmental issues into sectoral and thematic strategies is an effective way to mainstream pollution and natural resource management issues across sectoral activities. During the last year, the South Asia Region has considerably strengthened inter-sectoral working relationships on environmental issues. A team drawn from the energy and environment units produced a South Asia environmental strategy for the energy sector, a regional adaptation of the Bank-wide *Fuel for Thought* paper,

and will coordinate further work in the region on energy and environment issues. The South Asia Region's health and environment sector units have jointly prepared a Regional proposal to launch a South Asia Environmental Health Program and are now working together on a pilot environmental health project in India. A study on water, sanitation, and health in Andhra Pradesh, India, benefited from participation of staff from environment, health, infrastructure, and rural development.

Enhancing Bank Projects. The Bank's South Asia Region has stepped up its efforts to improve the environmental quality of its projects by taking a more proactive approach during all phases of the project cycle. During project preparation, this approach not only addresses traditional safeguard policies, but also enhances the design of projects. For example, a strategic vision was adopted to conduct regional environmental assessments for rural development projects in India and Nepal. In Bangladesh, India, and Pakistan, the Bank conducted combined environmental and social sectoral assessments for both urban and rural development projects and for highway projects. In the hospital waste management area, model studies have been designed and included in two health sector projects in India. Management-oriented training programs have been designed to strengthen environmental and social assessment capacities among central and state governments' environmental staff, municipal development fund companies, and financial intermediaries. Supervision efforts on industrial pollution and energy sector projects have been increased to ensure that the Bank's safeguard policies are fully implemented. To increase technical and procurement scrutiny of projects, Bank staff from the field offices are now heavily involved in project supervision.

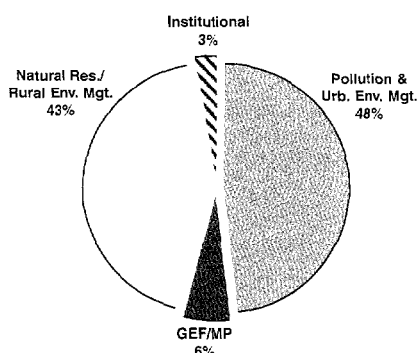
Mainstreaming Knowledge Management. On several fronts, the South Asia Region is mainstreaming information systems and knowledge management into its environmental operations. This includes the integration of environmental information systems—such as Geographic Information Systems (GIS) and other information management tools—to promote knowledge management concepts in Bank-supported projects in client countries.

South Asia Environmental Portfolio

Mitigating Environmental Health Risks. Environmental health was a focal issue in South Asia last year. Water supply and sanitation improvements have the potential to achieve significant positive environmental health impacts. A study in Andhra Pradesh, India, initiated in July 1998 to assist in the preparation of a State Environmental Action Plan, is assessing the overall burden of ill-health associated with lack of water and sanitation infrastructure and exposure to poor water quality, and outlining a cost-effective strategy for reducing this burden through a variety of interventions in rural and urban water and sanitation and pollution control.

The Bank's South Asia Region is supporting several urban and rural infrastructure projects aimed at increasing environmental health benefits, especially for the poor. The recently approved **India Second Tamil Nadu Urban Development Fund Project** will provide sanitation services for the urban poor and thereby improve environmental conditions in cities. Grants and loans under this project would be utilized for common and individual toilets, sullage, and garbage collection in over 500 poor communities through partnerships among urban local governments, community-based organizations, and NGOs. The benefi-

Projects Active during FY99 with Significant Environmental Objectives



Environmental Challenges in the South Asia Region

High Environmental Health Risk manifested by high infant and child mortality and high morbidity, especially among the rural and urban poor.

Principal causes are:

- Poor quality and unreliability of drinking water supply and lack of sanitation;
- Indoor and urban air pollution; and
- Toxic and hazardous agro-industrial waste disposal and discharges.

Weak Governance and Low Institutional Capacity in the form of weak and outdated institutions that result in little or no enforcement of environmental standards or good practice, and the continuing depletion and degradation of critical natural resources such as water and forests.

Principal causes are:

- Strongly centralized administration with little transparency, accountability, or participation;
- Negative incentives that mitigate against good performance, including uncompetitive salaries and service conditions, huge subsidies, and policy distortions;
- Aging, inefficient organizations that lack modern management skills, have not been able to sustain their technical capacity, and do not use modern knowledge management and information tools; and
- Huge financial deficits and perverse budget priorities and incentives.

Resource Depletion and Ecological Degradation that threaten the livelihood of the poor.

Principal causes are:

- No institutional framework for integrated management of natural resources, inadequate legal and policy framework and lack of incentives for resource conservation and protection;
- Lack of public awareness of the value and importance of healthy and sustainable ecosystems, or the causes of change that are diminishing their value; and
- Users and resource managers lack information on which they can make sound short- and long-term decisions because there is little comprehensive and modern planning and analysis, nor efforts to collect and compile reliable data.

ciaries will contribute part of the costs as well as labor for construction of these facilities. A similar participatory and partnership approach will be piloted for provision of water supply, sanitation, and solid waste management in low-income communities under another newly approved project, the **Bangladesh Municipal Services Project**.

In Bangladesh, the World Bank is also tackling a serious water-related health problem: that of arsenic contamination in groundwater, where tens of thousands of people are being exposed to high concentrations of arsenic from contaminated wells. The **Arsenic Mitigation/Water Supply Project** addresses the urgent need to provide clean water to the Bangladeshi people dependent on the arsenic-contaminated groundwater.

The project involves the identification of the extent of the contamination, research on viable technical options, and on-site mitigation efforts. Local communities are being involved to work with various government agencies and other stakeholders to devise strategies for long-term action.

There are many challenges in improving urban air quality in South Asia. Some activities underway include the integration of air quality concerns into urban transport projects in the region, and the promotion of integrated air quality management concepts, e.g., in the **Air Quality Management Learning and Innovation Loan** being developed for Dhaka. Furthermore, the regional environmental strategy for the energy sector adopts a holistic approach to

environmental outcomes and attaches the highest priority to mitigating indoor and urban air pollution on the basis of their health impacts. This implies a shift in air pollution mitigation focus from large-scale sources such as power plants to household energy and other small pollution sources, which (combined) are responsible for the bulk of human exposure to harmful air pollutants.

Natural Resources Management. The South Asia Region is involved in many activities to promote sustainable natural resources management. For example:

- ♦ In the last year, a second **Sodic Lands Reclamation Project** was initiated in Uttar Pradesh, India, to supplement the activities of the first one launched in 1993, which has had a significant impact on poverty and institutional development. The primary beneficiaries targeted are poor farmers on marginal lands. The project seeks to integrate various innovative technical, scientific, and social aspects into project design, implementation, and monitoring, which includes extensive community participation, use of remote sensing and GIS, extensive monitoring systems, and applied research.
- ♦ The new **Integrated Watershed Development (Hills) II Project**, although a follow-up to a project that closed last year, has radically changed its implementation approach to being a community-led project that seeks to increase the productive potential and promote sustainable watershed management in five Indian states in the fragile and highly degraded Shivaliks Hills, the lowest of the Himalayan ranges.
- ♦ The **Fisheries IV** project in Bangladesh aims to address the many environmental problems stemming from unplanned shrimp and fish production, including water quality problems, disease control, wetland and mangrove deforestation, and agricultural land degradation. It would make shrimp and fish production for domestic consumption and exports more environmentally friendly and sustainable. This project seeks to alleviate poverty by creating



Pakistan market.

more jobs in the fishing industry, especially for women and the very poor. Beneficiaries and NGOs are being directly involved in management decisions through extensive consultations throughout project preparation and implementation.

Strengthening Environmental Management Capacity. Weak institutional capacity is a leading factor responsible for the continuing environmental problems in the region. Bank supported activities include both *software* (training and other technical assistance) and *hardware* (equipment and facilities) for environmental institutions at the central and provincial levels and project financial intermediaries. In India, the recently closed **Industrial Pollution Control Project** and continuing **Industrial Pollution Prevention Project** are being implemented in four states each and have such capacity-building components. The **Environmental Management Capacity Building Project** is also making progress in enhancing national and local capacity in various aspects of environmental management. Examples of Bank activities include assisting in the development of state-level environmental action plans; a Zoning Atlas for industrial siting with environmental considerations; waste minimization circles (pollution prevention technical assistance through the concept of knowledge-sharing); and a GIS-based hazardous waste tracking system.

In line with the regional trend towards decentralization, the **Environmental Action Project** in Sri Lanka has been re-focused during the mid-term review from concentrating technical assistance on the central ministry to building environmental management capacity at the provincial/local level and promoting public-private partnerships.

The recently closed **Pakistan Environmental and Resource Conservation Project (EPRCP)** reflects the best traditional thinking on how to build environmental institutions in countries characterized by severe environmental degradation, extensive poverty, and nonexistent or weak and heavily fragmented institutional and policy frameworks. Part of a 15-year policy dialogue and 7-year implementation effort, the project helped Pakistan enact comprehensive environmental legislation and promote a general awareness about environmental issues. The project provides valuable lessons to future projects on the need to involve a broad range of stakeholders, inter-sectoral coordination, improving the quality of Bank technical assistance, quality-entry and supervision, and the effectiveness of "stand-alone" environmental operations.

Mainstreaming Global Concerns. The recent decentralization of Global Environment Facility (GEF) coordination activities to the Regions has provided the Bank's South Asia Region the opportunity to offer its clients a

wider range of financial instruments, as well as analytical and advisory services and external partnerships, while maintaining a coherent approach that is consistent with Country Assistance Strategies. The integration of GEF into the Bank portfolio includes cofinancing arrangements such as in the

Bangladesh Fisheries IV Project. The South Asia Region is making a serious effort to better understand the tradeoffs between local and global environmental outcomes, especially in the areas of energy and natural resource management. The Region hopes to enhance effective utilization of GEF resources to support mainstream Bank environmental activities.

The on-going Montreal Protocol program in South Asia has continued to expand. In India, with the maturing of the portfolio of sub-projects, implementation picked up in the year, and ODS phaseout of 580 metric tons in 21 sub-projects could be recorded. An additional 4 sub-projects with funding of \$1.6 million were approved, bringing the total number of approved sub-projects to 81, with commitments of \$26.8 million. In addition, a proposal for accelerated phaseout of production of CFCs in India was submitted to the Executive Committee on behalf of India and is under consideration. Four new projects with funding of \$1.9 million were approved for implementation during the year in Pakistan. Importantly, with the resolution of issues dealing with import duties and taxes on imported equipment, major bottlenecks for implementation were removed, and implementation of projects approved in earlier years could finally begin.

The Road Ahead...

A major rethinking of our environmental strategies and action plans is starting to take shape with a shift in focus toward strategic *outcomes*. The big challenge will be for all stakeholders to agree on which outcomes matter most, offering hope and opportunity not only for this generation, but for future generations to come. That is what sustainable development is all about.

This article was prepared by the staff of the South Asia Environment Unit (202) 473-2606, fax (202) 522-1664.



International Finance Corporation IFC's mission—To promote private sector investment in developing countries, which will reduce poverty and improve people's lives.

The International Finance Corporation (IFC) is the private sector development arm of the World Bank Group and is the largest multilateral source of loan and equity financing for private investments in developing countries. IFC is committed to financing environmentally and socially sound projects in its member countries.

"It can be likened to a 'balance sheet,' with the left side focusing on macroeconomic data while the right side encompasses structural, social, and human aspects of development."

— Peter L. Woicke



Peter L. Woicke, Executive Vice President International Finance Corporation and Managing Director, Private Sector Operations, World Bank Group

Promoting Sustainable Private Sector Investment

Excerpts from a presentation to HRH The Prince of Wales' Business and the Environment Program (UK)

It is increasingly clear that sustainable environmental management is good for business. This is especially true as the private sector continues to be the engine of economic growth in both industrialized and developing countries.

Jim Wolfensohn re-articulated recently the role of the World Bank Group within a so-called "Comprehensive Development Framework." This framework sets forth a holistic approach to development. It can be likened to a "balance sheet," with the left side focusing on macroeconomic data while the right side encompasses structural, social, and human aspects of development. Like the human brain, the right and left sides of the balance sheet would complement one another. Development can only be successful if a judicial system is in place, good governance is an accepted principle, a financial system is sound, and health and education systems provide people with protection and give them a chance to advance.

By attempting to establish high standards of environmental management, the World Bank Group can play an important, positive catalytic and demonstration role. This puts an enormous responsibility on our shoulders. The shareholders of our institutions, for example, the countries of the world, don't always see eye-to-eye on how far and fast this responsibility extends.

The global environmental agenda is largely driven by industrialized countries from a position of wealth, well-established institutions, and strong financial and industrial sectors. This agenda recognizes that, in the future, the main driver of economic growth and increases in demand for basic products and services will, however, come from developing countries. This will put a

heavy burden on the local and global environment and will profoundly change the social fabric. Rich countries, which have gained their wealth at times at the expense of the environment, rightly want to avoid the mistakes of the past and protect critical natural environments in developing countries. Developing countries understand this need, but their priorities are often different. Food supplies, access to energy, education and basic health services—all these immediate needs of the poor—have to be addressed with urgency and often appear to be in conflict with the long-term objectives of sustainable development.

The international community has recognized the need to support developing countries in financing the cost of addressing global environmental problems. In this spirit, international conventions are established. For instance, the Global Environment Facility (GEF) was created to assist in financing the costs related to global climate change, preservation of biodiversity, and pollution of international waters. However, the GEF, now replenished at a level of \$2.75 billion, can play only a small, catalytic role in addressing these problems. Governments also have to do their part in creating the institutional and regulatory environment to provide market incentives toward this objective.

Increasingly, however, it falls upon the private sector to play an important role in providing finance to developing countries and in particular in transferring technology that allows developing countries to build up industrial and agricultural sectors that are socially responsible, clean and eco-efficient. Again, a holistic approach is required.

While IFC may be a relatively small player in the broad context of private

investment in developing countries, we have learned a great deal from our global experiences. We view the IFC projects described in this article as positive catalytic investments that have had a true demonstration effect.

While there are a number of leading industrial companies who have set high environmental and social standards for their operations, much more has to be done. Industrial companies are increasingly recognizing this, but the financial sector seems to be lagging behind. The time is gone when industrial companies could consider themselves good corporate citizens on the basis of a license to operate and being in compliance with local laws and regulations. Today, a private sector company in a developing country has to consider its impact on the communities affected by its operations and on the broader environment. The executives of leading companies can no longer be just good operations and finance managers. They have to be able to manage with due attention to the broader political, environmental, social, and community impacts as well.

The private sector may also have to assume some of the traditional government roles, particularly in countries where the institutional framework is weak. Financial institutions can no longer just look at the commercial performance of a creditor, but have to consider their broader performance in the social and environmental areas. This is not just to respond to the pressures of civil society and to do good. It is essential to create a sustainable business environment over the long term. We in the World Bank Group and particularly in the IFC, who work with the private sector, have to convey this message, use our influence to push in this direction, and tailor our advisory services and our financing to achieve these objectives.

The Comprehensive Development Framework considers not only economic matters in development, but environmental and social ones as well. IFC is increasingly seeking to ensure that this more holistic form of "sustainability"—that is, financial, environmental, and

IFC invested in **Alexandria Carbon Black (ACB) Company S.A.E. (Egypt)** in mid-1992. After conducting a comprehensive environmental impact assessment, the company took several steps to protect natural resources in its operations. It invested in vacuum extraction, thereby minimizing dust emissions during product packaging; constructed a containment pond for production effluents rather than discharging to the sea; and converted from burning fuel oil to natural gas for heat and energy requirements, using waste gas for co-generation. Further added value was created when ACB sold some of this cleaner energy stream to its nearest customer, thereby reducing their demand for and emissions from fossil fuel as well.

IFC and its private-sector partners have helped make ACB the world's only carbon black company to receive ISO 9002 (quality) and ISO 14001 (environmental) certification. The project also included investment and technology transfer from U.S. carbon black leader Continental Carbon, and demonstrated how private enterprises in developing countries can promote economic development through "South-South" co-operation (in this case between Egyptian, Indian, and Indonesian shareholders).

Para Pigmentos S.A. (PPSA) involves the development of a 44 million-ton kaolin deposit in northeastern Brazil for the supply of kaolin primarily to the paper industry. PPSA successfully completed project construction at a time when state governments in Brazil expected private enterprise to contribute to the social development of local communities.

Through the development of good relationships with local government, universities, citizens organizations, as well as local residents—and by understanding their traditions and needs—PPSA was able to build consensus and help residents address environmental and social concerns about the project. Construction also displaced nine local families. PPSA relocated them, building 11 houses, a church, school building, and community center as well as providing water and electrical utilities. In consultation with Brazil's indigenous-affairs agency (FUNAI) and Para State University, PPSA has also developed and implemented an extensive social development and medical program for the indigenous peoples living around the facility.

social considerations—share the 1st tier on an equal basis. Indeed, if a project is not financially sustainable, it will not and can not proceed. Of equal importance, if a project is not environmentally and socially sustainable, it will not proceed either.

As a multilateral development institution, IFC must lead in promoting a sustainable private sector, but we also must be pragmatic. IFC has concentrated increasingly on environmental and social due diligence because we realize that environmental and social issues can be good for business. Indeed, ensuring that our projects are environmentally and socially responsible is NOT a fad. We are well aware that if we don't address these issues early on and in a systematic manner, there may be reputational risks and, ultimately, financial repercussions for both IFC and our clients. And, most importantly, if we are to improve the lives of people

in developing countries, we must encourage public awareness and culturally appropriate consultation on environmental and social issues. IFC's public consultation *Good Practice Manual* has provided solid, practical advice to our clients in helping them to achieve this goal.

How does IFC help alleviate these risks? As the leading multilateral financial institution working in the private sector in the developing world, we also work to influence other private financing institutions and other multilateral development banks through policy dialogue and financing joint projects. We speak regularly with these institutions to ensure a common approach to environmental and social issues. We also continue to coordinate and consult very closely with NGOs. We look to NGOs as partners on policy dialogue and, more recently, even as potential project partners.

In 1992, the **Kunda Cement Plant** in Estonia had operated for 120 years with no major renovation since the 1960s. Old equipment resulted in more than 82,000 tons per year of dust emissions, as well as high levels of sulfur- and nitrogen-oxide emissions. Today, the air has cleared, thanks in part to IFC's investment. The cement works were restructured into Kunda Nordic Cement (KNC), a modern, efficient, and privately held enterprise.

KNC now stands as a model of how to produce effectively for the market while also safeguarding the environment. New equipment was installed, reducing dust emissions to just over 1,000 tons per year. The benefits of improved air quality also extend throughout Estonia, as far away as Finland, Sweden, Norway, Russia, Belarus, and Poland.

Had the Kunda factory failed to change its operations in 1992, environmental and business concerns would have probably forced the plant to close. Instead, the plant has continued to produce cement at the same level as during the Soviet era, pay salaries to local workers, purchase goods worth an average \$5 million per year, and contract—on average—\$3 million per year in services. Reduced dust emissions have also made the town cleaner and reduced metal corrosion, improving Kunda's public image and attractiveness for future investment and tourism.

C. CARINEMARK

harmful child labor, and how to plan for layoffs as a result of major privatizations or downsizing. We may not have all the answers, but we try to be responsive and pragmatic in our advice and due diligence efforts.

IFC adopted recently a policy statement prohibiting its projects from engaging in harmful child labor practices. The policy focuses on eliminating work that consists of the employment of children that is economically exploitative, or is likely to be hazardous to, or interfere with, the child's education, or to be harmful to the child's health, or physical, mental, spiritual, moral, or social development. Following on the preparation of an interim guidance note, IFC is seeking to develop practical guidance geared towards our clients in the private sector.

As part of this new development agenda, IFC continues to seek out new sectors (for example, health and education), fund innovative projects, and lead new initiatives. IFC currently has a unit designed specifically to act as a catalyst

**Environmental
Projects Unit**

An example of how the IFC is transforming risk into opportunity is through

**Financial Markets
Environmental Services Unit**

our innovative environmental

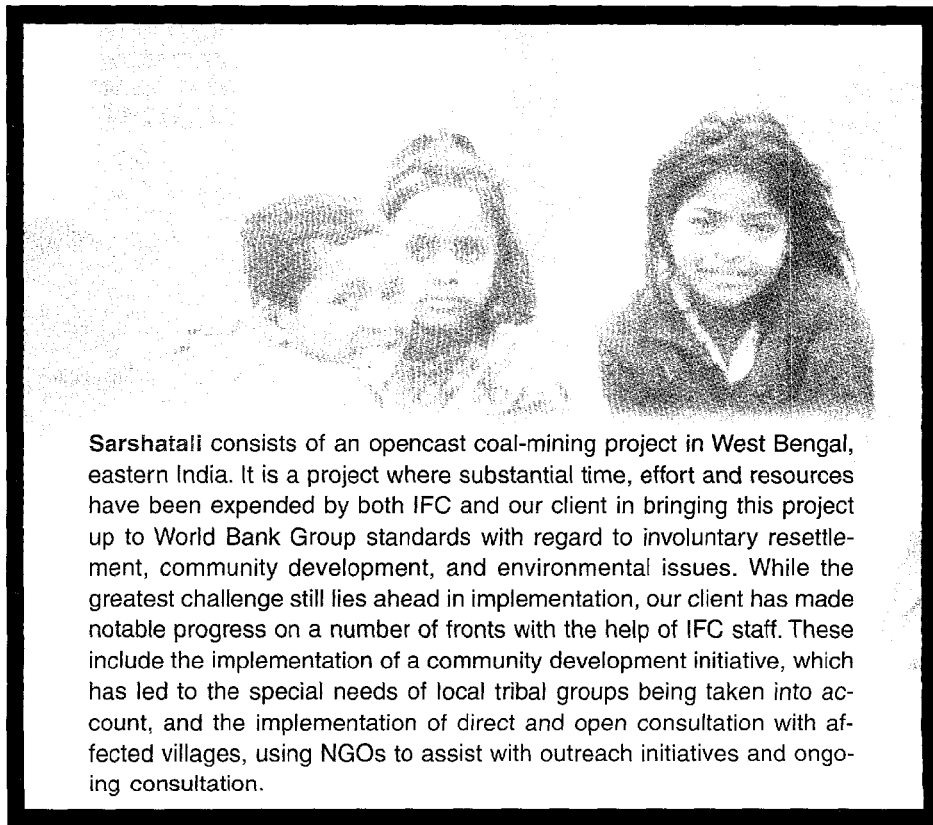
training of senior officials at IFC-supported financial institutions—significant because about one third of IFC's business last year was providing direct support to the financial sector.

IFC's Financial Markets Environmental Services Unit also conducts a quarterly weeklong workshop that teaches financial institutions how to transform increasing risk posed by environmental and social issues into financial opportunity—and therefore competitive advantage. This adds to IFC's development impact by affecting the way in which financial institutions in developing countries view environmental risk.

It is also important to remember that the social side of development continues to rise in importance. Development is about people, and part of our strategic approach and mandate is to reduce poverty and improve people's lives. It is no secret, however, that there may be tension between achieving fully realized economic development, social development, and environmental protection. We are therefore trying to bring a balanced, pragmatic approach to our transactions.

Perhaps the most important indication that sustainable environmental and

social practices are indeed good business is that our developing country clients are increasingly coming to us for advice on how to deal with these issues. Over the past few years, IFC's work in the social development area has expanded rapidly. We presently provide advice to our clients on such diverse issues as resettlement implementation and monitoring, community development, how industry and our clients deal with



Sarshatali consists of an opencast coal-mining project in West Bengal, eastern India. It is a project where substantial time, effort and resources have been expended by both IFC and our client in bringing this project up to World Bank Group standards with regard to involuntary resettlement, community development, and environmental issues. While the greatest challenge still lies ahead in implementation, our client has made notable progress on a number of fronts with the help of IFC staff. These include the implementation of a community development initiative, which has led to the special needs of local tribal groups being taken into account, and the implementation of direct and open consultation with affected villages, using NGOs to assist with outreach initiatives and ongoing consultation.

D. FOHLEN

In the Ivory Coast, the community of Blingue, a shantytown partially moved to make way for the **Riviera Marcory** approach road, has been in existence for over 40 years. The population consists of poor migrants from neighboring Mali and Burkina Faso; however, the community is a cohesive entity and well established. People living there had no land title or security of tenure, minimal sanitation, and poor water supply. The government of the Ivory Coast paid for the majority of the compensation for this project.

IFC's investment in Riviera Marcory has set a standard for important new infrastructure investments anticipated in the Ivory Coast, which now has one of the best track records in resettlement in Sub-Saharan Africa. Riviera Marcory has also set a precedent by involving civil society in a context where formerly all operations would have been handled by the state. The NGO CARITAS managed most of the resettlement on the ground. Local leaders and notable representatives of civil society played a key oversight and dispute resolution role. The project has also stimulated cooperation between the World Bank and the government in the development of national policies and capacity building.

in identifying, developing, and structuring projects with specific environmental goals.

In supporting projects ranging from renewable energy to clean water supply, the Environmental Projects Unit draws on IFC's own resources as well as concessional funding from sources such as the Global Environment Facility (GEF). The unit will also continue to pursue new ventures, such as projects that mitigate climate change pursuant to the Kyoto Protocol—including potential opportunities to develop funds that invest in greenhouse gas emissions reduction.

IFC does not mind the responsibility to conduct environmental and social due diligence on our mainstream projects, because we know that in the long run

we are adding value to our transactions. Indeed, we help make better projects. As long as we can contribute to making all of our projects more environmentally and socially sound from the outset, our on-the-ground development impact can be immense.

Improving Accountability: IFC and MIGA Compliance Advisor/Ombudsman

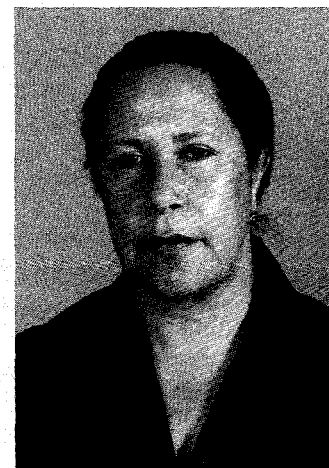
International development institutions are also being called on to be more accountable to the taxpayers that support them and to the people their projects affect. IFC is committed to improving its accountability to project affected people and other interested parties.

To achieve this commitment, IFC, together with MIGA, has embarked on a unique and innovative idea through a vice-presidential level appointment of an environmental and social Compliance Advisor/Ombudsman (CAO). The CAO will report directly to the President of the World Bank Group.

The CAO's role will be to act as a problem-solver to address external complaints and concerns in a pragmatic, transparent and solution-driven manner. The CAO will also provide practical advice to IFC management and staff on particularly sensitive or complex environmental and social issues and will be a conduit for complainants to be heard.

Last fall, IFC and MIGA appointed an outstanding external search committee representing a variety of perspectives from both the NGO and business communities to add credibility to the search process.

Ms. Meg Taylor of Papua New Guinea (PNG) was selected as the first CAO from a long list of distinguished individuals. Ms. Taylor, a former ambassador to the United States from PNG, brings a wealth of experience to the position. In addition to her skills in diplomacy and conflict resolution, Ms. Taylor has been a consultant on projects dealing with complex environmental and social issues for many years. She has also served on the boards of both



Meg Taylor, newly appointed Compliance Advisor/Ombudsman at IFC and MIGA.

WORLD BANK

NGOs and of several private sector companies in PNG in the natural resources, financial, and agricultural sectors.

Through the fall of 1999, Ms. Taylor will be developing procedures for access to the CAO office through a consultative process involving both NGOs and the business community. We invite interested parties to keep in touch with IFC and MIGA on how this interesting position evolves over time.

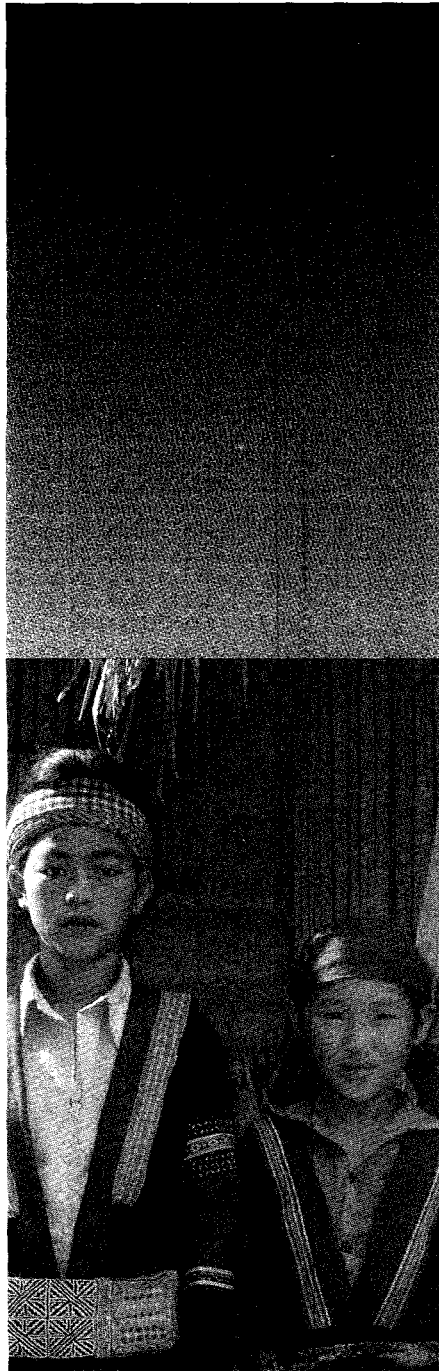
Finally, it's clear that the issue of "sustainability" is central to our core objective of poverty alleviation. They are inextricably linked. "Sustainability" includes not only addressing economic and financial issues, but also environmental and social development issues, including how our clients and the private sector deal with local communities in a socially responsible and accountable manner.

To find out more about IFC's commitment to ensuring environmentally and socially responsible investment, visit IFC's website on www.ifc.org/enviro.

This article has been prepared by Lis Culbard, (202) 473-7022, fax (202) 974-4348, of IFC's Environment and Social Review Unit and Shawn Miller (202) 473-1304 of IFC's Corporate Relations Unit.



Multilateral Investment Guarantee Agency



J. BLASER

Sustainable economic growth in many developing and transitional countries requires the stimulation of private enterprise and flow of foreign capital.

The Multilateral Investment Guarantee Agency (MIGA) was established as a member of the World Bank Group in 1988. MIGA's creation was in direct response to the debt crisis of the 1980s, and the subsequent realization among political leaders that sustainable economic growth in many developing and transitional countries required the stimulation of private enterprise and flow of foreign capital. For this to happen, however, many investors and lenders needed comfort that their respective investments would be protected against certain types of political risks. MIGA's establishment was an attempt to address shortcomings in the investment insurance (guarantee) industry, and provide a risk-mitigation service that was not readily available elsewhere.

To fulfill its mission, MIGA was given limited programmatic means, including (a) an investment insurance (guarantee) program, which provides political risk coverage to foreign investors from any of its member countries; and (b) a technical assistance program, which assists developing member countries in attracting foreign direct investment. MIGA neither invests nor lends money to investors, nor does it propose or design projects. Like any other form of insurance, investors and lenders who want this coverage pay premiums.

MIGA's Environmental and Social Safeguard Policies

When MIGA was created as a separate development institution, a deliberate decision was made that MIGA would carry out its mandate under direction provided by its Convention and Operational Regulations, rather than the IBRD/IFC systems of Articles, Operational Directives, Policies, and Procedures. MIGA's Convention and

Operational Regulations are predicated, in part, on standard practices of the investment insurance industry. In addition, the Convention and Operational Regulations provide the host country with a powerful role in determining the acceptability of prospective foreign direct investment to be insured by MIGA.

It is MIGA's policy that all the investments it facilitates through its guarantee program are carried out in an environmentally and socially responsible manner. Since mid-1990, MIGA has been applying World Bank environmental policies and guidelines to MIGA projects, with the environmental counsel and advice of the IFC. Thus, MIGA has taken care that the projects it insures are operated in accordance with internationally recognized environmental standards and practices.

At the recommendation of the Board of Directors, MIGA began drafting in 1997 its own specific policies. MIGA's board instructed MIGA management to find an appropriate balance in MIGA's proposed environmental assessment and disclosure policies with respect to its role as a provider of political risk insurance, as a development institution, and as a member of the World Bank Group. Achieving this balance was of particular concern as MIGA expands its reinsurance and coinsurance activities, because such activities require a relatively high degree of harmonization between insurers in terms of underwriting, contractual requirements, and policy wording. Moreover, the Board expressed concern that MIGA be able to continue to fulfill its mission by providing a valuable risk mitigation service to its clients. Therefore, its Board instructed MIGA to review its portfolio and to provide an analysis of the types of investors that rely

on MIGA so that the impacts of the proposed environmental and disclosure policies could be carefully weighed.

MIGA's clients are private sector investors or lenders, though publicly owned investors can also be eligible if they operate on a commercial basis. MIGA's guarantees (i.e., insurance contracts) can be broadly divided between those involving financial sector investments and those involving project-related investments. Financial sector investments typically involve the establishment, expansion, or investment in local financial institutions. Project-related investments are in sectors such as manufacturing, agribusiness, infrastructure, and resource extraction. About 30 percent of MIGA's current contracts are for investments in the financial sector, and therefore are not tied to specific projects. Another 10 percent of MIGA's contracts are held by lenders to specific projects.

The remaining 60 percent of MIGA's contracts are for various types of investors in projects. However, very few of these contracts have been issued to majority owners in the project. Overall, about 15 percent of MIGA's contract holders are majority owners. In fact, among MIGA's clients, the median ownership in a project is about 33 percent (i.e., half of MIGA's contracts are with investors or lenders with less than 33 percent interest in the project). These statistics clearly highlight the importance of MIGA to minority partners in projects, and to the financial sector.

MIGA's draft environmental assessment and disclosure policies, and the procedures for implementing them, were the subject of extensive discussions in 1998 by MIGA's Board and management. These included a period for

public review and comment, which was a valuable contribution to finalizing an appropriate policy framework for MIGA. With some changes to the texts, the Board approved MIGA's environmental assessment and disclosure policies and procedures; they took effect with all new applications received after June 30, 1999. The approved policies and procedures are now available on MIGA's web site (www.miga.org).

The environmental assessment policy formalizes an approach to environmental review that has been taken by MIGA for many years. The disclosure policy now encompasses the required disclosure by MIGA of environmental information for projects considered environmentally and socially sensitive (i.e., Category A projects).

In addition to these MIGA policies, various other environmental and social policies provide additional guidance to MIGA staff in determining the soundness of a project's contribution to the development of the host country. Thus, it is MIGA's policy that the projects it insures are consonant (if applicable) with the following environmental and social policies developed by the IFC: *Natural Habitats; Forestry; Indigenous Peoples; Safeguarding Cultural Property in IFC-Financed Projects; Involuntary Resettlement; Pest Management; Safety of Dams, and Projects on International Waterways*. Their application is addressed in the MIGA environmental review procedures, along with the application of MIGA's environmental assessment and disclosure policies.

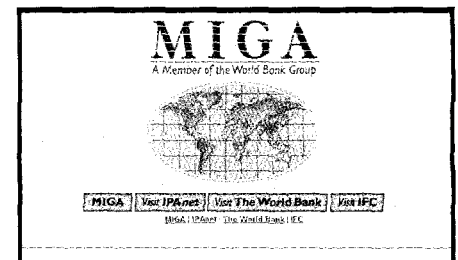
MIGA's Business Processes

MIGA's role as a provider of investment insurance requires a very different, and shorter, project cycle relative to that of a lender or investor such as the IBRD and IFC. MIGA's Operational

Regulations direct MIGA to reach a prompt decision on the issuance of a guarantee, and, to the extent possible, to make the decision within 120 days of receiving the completed application.

In essence, a potential investor applies for political risk insurance coverage, and MIGA, after determining whether the proposed investor and the investment are eligible, decides whether to underwrite the risk. During the underwriting process, MIGA reviews the economic and environmental soundness of the applicant's proposed investment, and assesses the development impacts. A paper and a management recommendation are presented to the Board of Directors prior to issuance of a contract. In addition, host-country approval of MIGA's decision to offer a contract must be obtained.

In association with MIGA's business process review, MIGA management expects that the overall effect of the new environmental assessment and disclosure policies and procedures will be a more efficient underwriting process and continued assurance that the agency is facilitating environmentally and socially sound and sustainable foreign direct investment. Additional information regarding these and other environmental matters at MIGA is available on MIGA's web site, www.miga.org (see below).



This article was prepared by Harvey Van Veldhuizen of MIGA, (202) 473-3390, fax (202) 522-2630.

Poverty and Environment



MORE than ever, alleviating poverty is the World Bank's central mission. But the Bank is constantly rethinking that effort, and particularly the role of environmental work in that effort. The Bank's new environment strategy is putting particular emphasis on understanding the contribution of environmental activities to poverty reduction.

First, what is poverty? Like "environment," poverty is difficult to define. It is cross-sectoral and multidisciplinary and can mean different things to different people.

Traditionally, in the Bank and elsewhere, indicators of income and consumption have been used to define poverty. That remains an important aspect of poverty, but the definition is broadening to include issues such as health, education, security, and political voice.¹ Next year's World Development Report will focus on three dimensions of poverty: empowerment, security, and opportunity. The Bank's work on environment and poverty follows this broader definition, thinking of income poverty as well as other types of poverty.

Second, how are environmental activities linked to poverty reduction? One direct link is through the health of the poor. Many studies have shown that clean drinking water and sanitation are important for basic health. Recent work is allowing the Bank to quantify the importance of

water and sanitation. One study estimates the causes of death and illness of the bottom 20 percent of the world's population by income (GDP per capita) compared to those of the richest 20 percent. It found that the two biggest causes of death of the poor were respiratory infections and diarrheal diseases.² Both are linked to environmental factors (dirty water and dirty air). It also found that diseases with strong links to environmental factors are highly concentrated among the poor. Sixty percent of all malaria deaths, for example, occur amongst the poorest 20 percent of the world's population. Half of all deaths from diarrhea are among the poorest 20 percent. Another Bank study estimates that, in the Indian state of Andhra Pradesh, the Bank could reduce the burden of disease by 17 percent with three activities—providing clean water from taps inside the house, providing private latrines, and reducing indoor air pollution through clean cooking fuel.

Environmental conditions also affect the livelihoods of poor people. Poverty is overwhelmingly rural in most countries of the world, and the poor often depend on natural resources. Poor women and children can spend several hours a day collecting water and fuelwood. Often, poor people have developed complex and effective mechanisms for managing natural resources, even over long time periods. In some circumstances, however, these mechanisms can break down and lead to a deterioration in natural resources so severe that people can no longer support themselves. What causes these mechanisms to break down varies from place to place and depends on complex interactions of social, economic, and natural factors. Potential solutions also vary enormously.

Natural disasters—such as floods, storms, droughts, and landslides—have a disproportionate effect on poor people. This is because they often live on vulnerable land, flood plains, or steep slopes and in precarious housing. And, perhaps, more importantly, they lack assets, savings, or other resources to meet their basic needs in the aftermath of a disaster.

LOOKING FOR WATER

Oldadai, Arusha, Tanzania. "Women are most affected because they have to lose most of their time searching for water. During the dry season from August to January, when the springs become dry, we have to walk 2 km to Kishimbo to get water. When we reach there, we find that there are so many people lined up for water, it takes six hours to get one bucket of water."

Southwest Province, Cameroon. "Sometimes... the water is brown. We call it tea, but we drink it anyway."

Miti, Kilimanjaro, Tanzania. "Water is scarce. There is only one stream which becomes dry during the dry season, June to September. The stream is about 1.5 km from here. Searching for water affects women and children, especially school children. When they come back from school they immediately have to leave to look for water rather than do their studies. You cannot build proper mud-brick houses because you need water. People have to buy water at 400 shillings per tank (200 liters)."

Kansur, Pakistan. "The most pressing needs of poor urban communities relate to water and more particularly sanitation. In the absence of latrines people are forced to use open spaces.....For women this was expressed as representing a particular problem as they are confined to relieving themselves before dawn or after dusk and are often victims of sexual harassment or attack."

Is it true that poor people often degrade the environment they depend on? People often say that the poor are compelled to exploit marginal areas, which are particularly vulnerable to degradation. Another commonly cited trend is that the poor have shorter time horizons than the non-poor and are forced to deplete the resources on which they depend merely to feed their family. Circumstances do exist where both of these things are true. But there are no general trends, indeed there are countless examples to the contrary. And the notion that environmental degradation increases poverty, which in turn worsens the degradation, is certainly not inevitable and does not appear to be a useful way to think about the relationship between the poor and the natural resources on which they depend.

In each situation, when planning Bank interventions it is more useful to assess whether specific policies or interventions designed to improve natural resources management have had systematic impacts on the poor's wellbeing. And, when thinking about natural resource interventions, this needs to address who has access to resources and what policies, social relations, institutions, and policies shape the terms of that access. Activities such as the **Uttar Pradesh Sodice Lands Reclamation Project** in India have seen substantial improvements in the wellbeing of local communities through poverty-focused natural resource management.

Recognizing that the poor are the true experts on poverty, the Bank has undertaken a program called "Voices of the Poor." This program uses participatory and qualitative methods to let poor people in some 70 countries express their views about their wellbeing. To ensure that information is not being filtered through the lenses of outsiders, data is gathered and analyzed in the field by and with poor people themselves. Many of these studies ask the poor to list or rank the problems that most affect them. These lists vary considerably from country to country and between rural and urban situations. Two items feature prominently in almost all of these exercises, however: access to and quality of drinking water, and issues relating to natural resources (droughts, floods, availability of fuelwood, pollution, etc.). In qualitative surveys in the Sierra in Ecuador, for example, respondents consistently identified lack of land and poor quality of land (steep terrain, erosion) as primary reasons for their poverty.³ The study has also examined poor people's concerns about water and sanitation in Tanzania and Cameroon (see *Box*, page 42).⁴

What kinds of environmental activities most help reduce poverty? Projects that provide safe water from private taps and that provide private latrines or toilets to poor people will play a major part in improving the health of the poor, as will projects that reduce indoor air pollution in rural areas. Of course, identifying these priorities is far easier than implementing projects that are both affordable and sustainable. Increasingly, however, we have examples where such poverty-focused activities do succeed. A well-known example in the water sector is Brazil's Prosanear initiative, which provides low-cost water supply and sanitation to poor communities in several states, many with World Bank financing. Environmental work as part of cross-sectoral initiatives to combat vector-borne diseases such as malaria would also have a major positive effect on the health of the poor.

Projects that improve the conditions of the natural resources on which poor people depend will also do much to improve their wellbeing. Here the causal links are even more complex and the points of intervention will vary from case to case. Interventions need to deal with the interactions between resource allocation, social relations, and policies that govern each particular case. The **Eastern Anatolia Watershed Rehabilitation Project** in Turkey is a good example of an initiative that followed such an approach and resulted in positive social and poverty impacts as well as improving the environment. In addition, projects that help alleviate the effects of natural disasters—predicting and preparing, as well as efforts to provide resources to those affected—can also have a major impact on the well-being of the poor.

¹ See, for example, Bourguignon, F. and S. R. Chakravarty. *A Family of Multidimensional Poverty Measures*. Working Paper, DELTA, Paris. January, 1998.

² Gwatkin, Davidson R., and Michel Guillot. *The Burden of Disease Among the Global Poor: Current Situation, Future Trends and Implications for Strategy*. Global Forum on Health Research Working Paper. July 1999. A shorter version of this paper will be published in *The Lancet*.

³ World Bank. *Ecuador: Poverty Report*. 1996

⁴ Narayan, Deepa. *Voices of the Poor: Poverty and Social Capital in Tanzania*. Environmentally and Socially Sustainable Development Studies and Monographs Series 20. October, 1997. World Bank. Icameroon: Diversity, Growth and Poverty Reduction. April 1995. For information on the Voices of the Poor project, see <http://www.worldbank.org/poverty/>. See World Bank poverty assessments and participatory poverty assessments published by the World Bank Intoshop for results of ranking exercises. Several authors (e.g. Robert Chambers from IDS in Sussex) have published participatory poverty analyses that include ranking exercises for various countries.

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Health and Environment



PREMATURE death and illness due to environmental health risks account for one fifth of the total burden of disease in the developing world—comparable to that of malnutrition (15 percent), and larger than all the other preventable risk factors and groups of disease causes (see *Box*).

In developing countries, an increasing health burden from modern forms of exposure to urban, industrial, and agrochemical pollution adds to traditional household risks, which still play the larger role. On the global scale the lack of access to clean water and sanitation and indoor air pollution are the two principal causes of illness and death, which predominantly affect children and women in poor families. In all developing countries, over 2 million people, primarily young children and women, may die as a result of indoor exposure from dirty solid fuels each year. The health burden from poor water supply and sanitation is even larger.

Regional Differences

Among regions, the burden of disease from environmental causes varies considerably (see *Table*), as measured

WHAT IS ENVIRONMENTAL HEALTH?

The definition of environmental health is still evolving. The conventional list of main health hazards in the household and community environment includes the following:

Traditional hazards—Lack of safe water; inadequate sanitation and waste disposal; indoor air pollution; vector-borne diseases (malaria, etc.).

Modern hazards—Urban air pollution; agro-industrial chemicals, and waste.

Other health hazards may be added—at least partially—to the environmental health category, such as food contamination, occupational safety, and natural disasters. The health and environment nexus is broader than environmental health *per se*; for example, it may include health care waste management; health impact of land degradation and impoverishment; and the impact of biodiversity loss on medicinal plants. These issues, however, are outside the scope of this note.

Source: WHO website.

in Disability Adjusted Life Years or DALYs (see *Box*, next page). Inadequate water supply and sanitation (WSS) pose the largest threat to human health in Bank client countries, except for China and the transition economies of Europe, where air pollution causes the most damage. Indoor air pollution is the highest in Asia and Africa. Malaria has taken a heavy toll on the population of Sub-Saharan Africa. Even though it is not nearly as significant in other regions, it is the third-highest environmental health threat globally.

Traditional environmental health hazards exceed the impact of modern hazards by a ratio of over 10 for Africa, 6 to 10 for Asian countries and 2.5 for Latin America. Conversely, modern threats to human health prevail in rich countries and European economies in transition.

Overall, the environmental health burden as a percentage of the total disease burden is the



C. CARMEMARK

India.

Burden of Disease from Major Environmental Risks (worksheet)

Environmental health group	Percent of total DALYs in each country group							
	AFR	India	China	Asia & Pacific	LCR	FSE	LDCs	EME
Water supply&sanitation	13	11	4.5	10	7	2	9	1.5
Malaria	9	0.5	0	1.5	0	0	3	0
Indoor air pollution	5.5	6	9.5	4	0.5	0	5	0
Urban air pollutio	1	2	5	2	3	3	2	1
Agro-industrial waste	1	1	1.5	1.5	2	2	1	2.5
All causes	29.5	20.5	20.5	19	12.5	7	21	5

Note: AFR—Africa, LCR—Latin America, FSE—former socialist economies of Europe (does not include Central Asia); LDCs (less developed countries) comprise all regions/countries in the first six columns; EME—established market economies. Regions slightly differ from World Bank regions. See a definition in WDR 1993 and Murray and Lopez 1996. Note that Asia and Pacific includes countries from East and South Asia, except for China, India, and Pakistan.

Source: Murray and Lopez 1996, Smith 1998.

highest in the regions that house the majority of the world's poor (30 percent in Africa and 20 percent in Asia) and the smallest in industrialized countries. Within individual countries, it is again the poor who suffer disproportionately from unsafe environmental conditions at the household and community levels.

Health and Poverty

The observed relationships between the burden of environmental diseases, traditional environmental risks, and wealth *makes environmental health a principal indicator of development and a major element in achieving the Bank's primary objective of poverty reduction.* While the total burden of

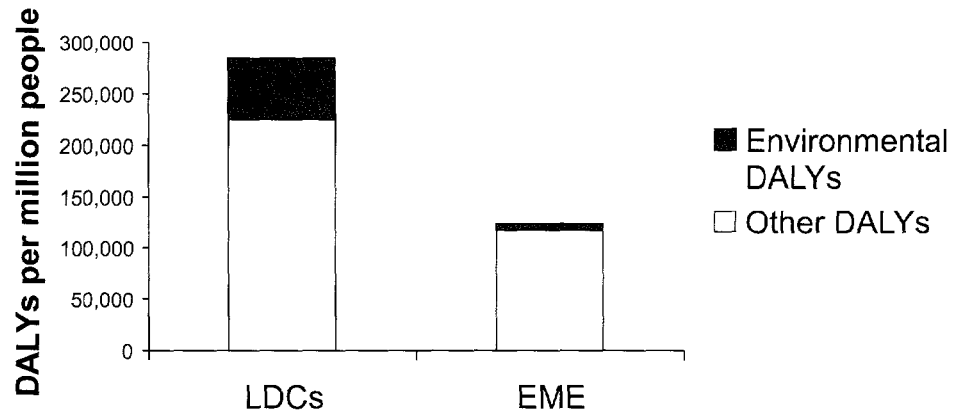
DALYs as a Measure of the Burden of Disease

DALYs (disability-adjusted life years) are a standard measure of the burden of disease. The concept of DALYs combines life years lost due to premature death and fractions of years of healthy life lost as a result of illness or disability. A weighting function that incorporates discounting is used for years of life lost at each age to reflect the different social weights that are usually given to illness and premature mortality at different ages. The combination of discounting and age weights produces the pattern of DALY lost by a death at each age. For example, the death of a baby girl represents a loss of 32.5 DALYs, and a female death at age 60 represents 12 lost DALYs (values are slightly lower for males).

The use of DALYs as a measure of the burden of disease has provided a consistent basis for systematic comparisons of the cost-effectiveness of alternative interventions designed to improve health. When combined with the results of large epidemiological studies, it enables public health specialists to identify priorities and focus attention upon developing programs that have the potential to generate large improvements in the health status of poor households in the developing world.

Source: Murray and Lopez, 1996.

Burden of Disease and Environmental Risks: Developing versus Developed Countries, 1900s



Source: Murray and Lopez (1996), Smith (1998).

disease in rich countries, expressed in DALYs per million people, is about half of that in developing countries, the disease burden from environmental risks is smaller by a factor of 10 (see *Figure*).

Improving Environmental Health

Environmental health risks can be prevented or significantly mitigated through a variety of economic activities in different sectors.

For mitigating traditional environmental risks, better infrastructure and energy services for households and communities are the key measures, together with improved housing and vector control interventions. For reducing modern risks, pollution prevention and abatement measures through setting and enforcing environmental standards, developing the culture of environmental compliance, and creating effective incentives are needed. In Sub-Saharan Africa, for example, remedial measures outside health care systems, such as improved water and sanitation, household energy, housing, vector control, and pollution management, are estimated to reduce the total burden of disease by 23 to 29 percent. Health care interventions aimed at the same clusters of diseases that are affected by environmental factors (e.g., diarrhea, respiratory symptoms, eye

diseases, malaria) can reduce the disease burden a further 23 to 28 percent. Most environmental interventions are very cost-effective as a means of achieving health outcomes (see *Box*).

This illustrates two important points: (a) health, especially the environmental health component, is a principal outcome of many interventions and project activities outside the health sector; and (b) a key development objective of improving people's health requires a holistic approach to mitigating major risks by integrating efforts inside and outside health care systems. This approach is particularly important for improving the health of the poor—the group most vulnerable to both main environmental hazards and deficiencies in health services provision.

Bank experience with environmental health as a primary project objective has been limited due to (a) lack of awareness of the scale of the problems and of the means of dealing with them; and (b) the complex and multisectoral nature of the causes of the problems. The *Bridging Environmental Health Gaps* initiative in the Africa region has been a major exercise to date. There is, however, a growing interest in these issues both by Bank clients and Bank staff, facilitated by a sharpened focus on poverty and outcome-oriented activities.

Cost-Effectiveness of Interventions to Improve Environmental Health

A review of selected studies undertaken by the World Bank to assess the effectiveness of measures outside the health sector in achieving health improvements (i.e. preventing the loss of DALYs) provided the following estimates of the costs per DALY saved for various interventions:

- Hygiene behavior change (WSS)—\$20 per DALY (EHP 1998)
- Malaria control—\$ 35–75 per DALY (Mills, 1997)
- Improved stoves (indoor air)—\$50–100 per DALY (Smith 1998)
- Improved quality of urban air—large variations, from negative costs (e.g., replacement of two-strokes engines) to \$20,000 per DALY and more for some pollution control measures. WDR 1993 suggests that interventions up to \$150 per DALY saved should be considered cost-effective.

Source: World Bank estimates.

Health and the New Environment Strategy

Current work on a new World Bank Environment Strategy pays serious attention to environmental health by promoting three major types of activities:

- ♦ Improve knowledge of environmental health problems and develop an appropriate response, taking account of institutional, financial and social constraints; launch advocacy and dissemination activities; deepen collaboration with strategic partners such as World Health Organization (WHO), UN agencies, and bi-lateral organizations with experience in environmental health;
- ♦ Integrate critical environmental health issues in the operations of the relevant sectors, such as indoor air pollution in energy operations; health considerations in WSS projects; urban air pollution in city development strategies; quality of fuels in petroleum sector restructuring work; and
- ♦ Adopt a holistic approach to development impacts consistent with the Comprehensive Development Framework (CDF), which focuses on tangible improvements in human health and facilitates cross-sectoral collaboration inside the Bank and in client countries to achieve these impacts (e.g., “child survival” programs composed of multisectoral interventions that are most crucial for reducing child mortality).



On the global scale the lack of access to clean water and sanitation and indoor air pollution are the two principal causes of illness and death, which predominantly affect children and women in poor families.

This article was prepared by Kseniya Levovsky, (202) 473-6120, fax (202) 522-1664.

Energy and Environment



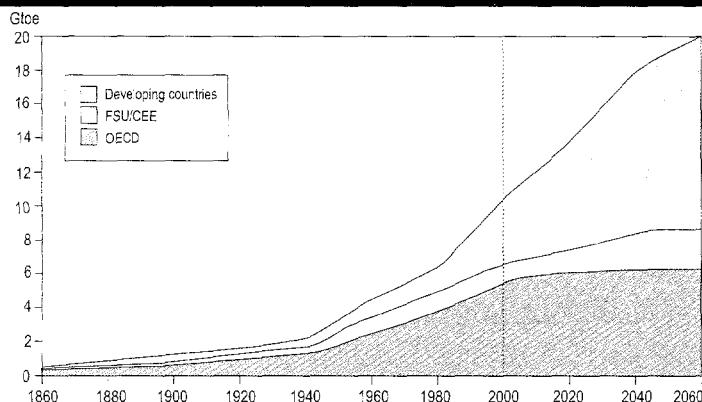
THE links between energy and environment present a difficult paradox in the development debate. Energy is vital to economic development; poverty will not be reduced without greater use of modern forms of energy. At the same time, the provision of energy services—especially through the combustion of fossil fuels and biomass—can create and contribute to adverse environmental effects such as indoor and urban air pollution, acid rain, and global climate change.

Dealing with the implications of rapid growth in energy demand presents a tremendous challenge

regarding future emissions of greenhouse gases and their likely impact on global climate. Even in scenarios with fairly optimistic assumptions about the growth of hydropower and other forms of renewable energy, carbon emissions from burning fossil fuels are predicted to increase quite dramatically. They will probably double, from a total of 6.5 gigatons today to 13.8 gigatons by 2050, according to mid-range scenarios developed by the Intergovernmental Panel on Climate Change.

While the industrialized world is now having to deal with the environmental legacy of its past energy use and policies, the developing world has the opportunity to ensure a more benign relationship between economic growth and energy consumption by pursuing efficient production processes and reducing waste, by using fuels more efficiently, and by relying more on renewables.

PRIMARY ENERGY CONSUMPTION



Notes: The graph for the period 2000–2060 shows a scenario of future energy consumption based on current trends.
Source: World Energy Council, World Bank.

for the Bank. The World Energy Council forecasts that—based on current trends—world energy use will grow at 1.4 percent annually until 2020, with growth in OECD countries of 0.7 percent and growth in developing countries of 2.6 percent. According to this scenario, developing countries will have reached the level of total consumption in OECD countries by 2015 (see *Figure, below*). By 2050, they will have doubled it. But even then, the level of energy consumption per head of population in developing countries will be only one quarter of that in OECD countries (see *Figure*).

There are significant environmental implications to this global growth in energy use, particularly

A New Environmental Strategy for Energy

The World Bank Group has recently completed a review of the key environmental issues in the energy sector and the options for addressing them. Based on the review and consultations with internal and external stakeholders, the Environment Department and the Energy, Mining & Telecommunications Department of the World Bank, in collaboration with the International Finance Corporation, prepared an environmental strategy for the energy sector. This sector strategy paper, entitled *Fuel for Thought: Environmental Strategy for the Energy Sector*, attempts to improve our understanding of policy and lending priorities at the nexus of energy and environment. It will also serve as the basis for more detailed operational guidelines that will help shape country-specific assistance programs.

The review was conducted over several years. In 1996, an issues paper was written and discussed with NGOs, industry representatives and donor agencies. During the preparation of a background discussion paper, consultations were held with Bank staff and a subcommittee of the Executive Board. The discussion paper was also posted on the Internet, and a virtual consultation with external stakeholders was carried out over a six-week period in mid-1997. Comments from more

than 50 organizations and individuals were received and posted for common access.

Based on feedback from internal and external stakeholders, the paper was revised, and presented to the Board of Executive Directors on November 24, 1998. The Board made a number of substantive suggestions, and requested that a further round of external consultation be held. Consequently, a second round of virtual consultation took place in early 1999, after which the paper was revised, and monitorable progress indicators developed. The final version of *Fuel for Thought* was reviewed by the Board on July 20, 1999. The Board discussed the paper in depth, recommended minor revisions, and mandated staff to move on to the implementation of the strategy.

Fuel for Thought builds on the Bank's existing policies and activities and draws from lessons of experience. It involves three key instruments: policy assistance, knowledge management, and support for environmental best practice. In pursuing this strategy, the Bank will apply the basic principles of (a) creating a framework for environmentally sound energy sector development; (b) addressing local and regional environmental and social impacts as a first priority; and (c) helping to tackle climate change.

The Bank will not only recommit itself to putting into practice its existing policies, but it will also promote several new approaches in the field of energy and the environment. Specifically, it will:

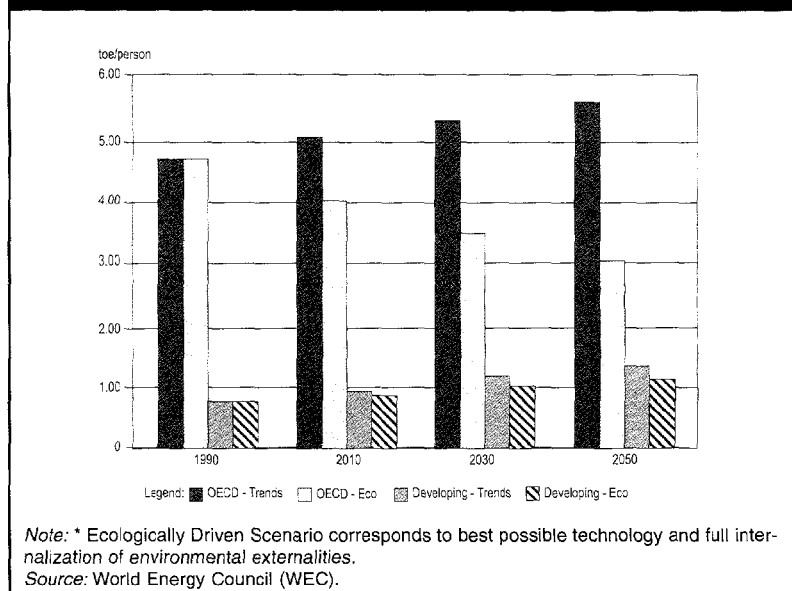
- ◆ Do more work upstream to guide lending for projects within the priorities laid out in the Country Assistance Strategies, and set priorities for action across the whole energy chain;
- ◆ Bring environmentally friendly technologies and practice into the mainstream of its operations through the use of new lending instruments such as "Learning and Innovation Loans" (LILs) and "Adaptable Program Loans" (APLs);
- ◆ Help to improve standards of analysis for environmental problems and monitoring of projects aimed at solving them;
- ◆ Support worldwide efforts to avert the threat of climate change by encouraging the use of new technologies that reduce greenhouse gas emissions and by helping establish a global market in carbon emissions offsets and credits, which should help cut the costs of averting climate change;
- ◆ Develop new partnerships, such as a new Strategic Partnership with the Global Environ-

ment Facility, which will seek to boost investment in large-scale renewable energy projects through increasing World Bank Group financing and leveraging other financing; and,

- ◆ Improve its specialist skills, particularly within the fields of renewable energy, energy efficiency, and energy sector reform.

Energy and Environment

Per Capita Energy Consumption in OECD and Developing Countries, 1990–2050 according to Ecologically Driven (Eco)* and Current Trends (Trends) Scenarios



Accurate monitoring of progress in implementing the strategy is essential. This will be done using indicators that focus on the *outcomes* of intervention, rather than their inputs, i.e. how much the Bank Group's activities contribute to clients' comprehensive development. Management will report on progress in two years' time, with an interim review after one year.

The environmental strategy for the energy sector is aimed at two broad audiences. The first is internal—the World Bank Group's Executive Board, senior management, and sector staff. The second is external—the Bank's client countries, partners, nongovernmental organizations, and the international community concerned with energy and environmental issues.

For more information . . .

The papers documenting the evolution of the World Bank Group's environmental strategy for the energy sector, including the final, Board-endorsed version, are posted at the World Bank's Global Climate Change website at <http://www.esd.worldbank.org/cc/> under the Energy-Environment Strategy. In addition, general information on the Bank's work in the energy sector can be found at <http://www.worldbank.org/html/fpd/energy/>.

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Building a New Natural Resources Management Strategy



APPROACHES to natural resources management will be a key component of the Bank's new environment and sustainable development strategy, which is currently in preparation. In preparing the strategy,

specialists have been reviewing the profile of NRM projects and responses to them across the Bank in an effort to understand which have been effective and where improvement is needed.

of land and property rights, and industrial air and water pollution.

As these examples suggest, the diversity of NRM issues among regions requires careful tailoring of NRM regional strategies going forward.

In order to better integrate its work with the mission of the Bank and its emphasis on human development, the ESSD family has begun a strategic shift in thinking about the performance of environmental activities in terms of how they contribute to development outcomes and particularly poverty reduction. In the past, environmental management approaches have focused on solving specific environmental externalities, through institution and capacity building, remediation, and/or prevention of pollution and natural resource degradation. The "outcome-based approach" shifts the focus away from "output delivery" to the critical changes in behavior and institutional performance that will contribute to improving the well-being of the poor.

There is a general assumption that poor people, particularly in rural areas, directly depend on natural resources for their livelihoods, yet the pathways through which NRM enhances the well being of the poor are less well understood and documented. Future work will focus on these issues.

Emerging Trends in Natural Resources Management

Most developing countries have been heavily reliant on the use of natural resources to support their economic growth. In East Asia, examples include tree and cash-crop development on previously forested land in Thailand, Indonesia, Malaysia, and the Philippines; expansion of irrigated agricultural production through groundwater exploitation; surface diversions and new reservoir development in China, Indonesia, and the Philippines; establishment of fast-growing timber plantations in China and Malaysia; and conversions of agricultural land to urban and industrial uses throughout the region. In the Middle East and North Africa, development is putting pressure on the region's scarce water

In the preparation of this new strategy, one of the challenges facing the Bank is the diversity of NRM issues across regions. For example:

- ◆ In Sub-Saharan Africa, there is a growing scarcity of arable land, rangeland, surface water and groundwater, fuelwood, and biodiversity;
- ◆ In the Middle East and North Africa, the issues include scarcity of energy resources,

scarcity of water (11 countries already exceed sustainable renewable levels), urban and industrial pollution, overgrazing of fragile pasture lands, conversion of fragile grazing lands to unsustainable cereal-based production, and degradation of coastal zones and biodiversity.

- ◆ In East Asia and the Pacific, the issues include unabated degradation and loss of forest resources, consequent loss of biodiversity, soil erosion and sedimentation of water courses, degradation of water resources, and degradation of coastal resources, including fisheries and marine biodiversity;
- ◆ In Latin America and the Caribbean, the issues include degradation and conversion in Pre-frontier areas, degradation and deterioration in Post-frontier areas, competition for scarce water resources, competition for fisheries resources, unsustainable coastal development, uncertainty



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resources; Jordan and Yemen are currently thought to be extracting water at unsustainable rates.

This strategy imposed many hidden costs, including the loss of biodiversity, agro-chemical pollution, and adverse sociocultural impacts. It was greatly worsened by the fact that most governments placed a relatively low priority on the sound management of natural resources. The resulting legacy of natural resources degradation around the world is well-documented.

- ◆ At the global level, some estimates suggest that 1.2 billion hectares, or about 11 percent of the world's vegetated surface, has been moderately or strongly degraded since 1945. Sub-Saharan Africa is thought to be the most affected.
- ◆ A recent review for the Latin America and Caribbean region concluded that the rate of forest loss has accelerated continuously since the 1960s, despite the increased attention to the issue. In East Asia, estimates of annual national deforestation rates range from 0.3 percent in Papua New Guinea to 4 percent in Thailand.
- ◆ Some 90 percent of the world's major fisheries have collapsed because of over-fishing.
- ◆ Freshwater ecosystems are being altered at alarming rates. In 1950, there were 5,270 large dams; today there are over 36,500. The degradation of water resources is also cause for great concern. In many regions, water extraction exceeds the capacity of rivers.
- ◆ Biodiversity and most ecosystem types are also shrinking at alarming rates.

The continued degradation of natural resources has two critical implications for developing countries. First, it suggests that the use of natural resources as an engine of economic growth must be accompanied by much greater husbanding of resources if the resource base is to remain sustainable and productive. Second, and particularly in the context of the Bank's core mission of poverty alleviation, it suggests that the benefits of resource-based growth must be shared equally and fairly within and among countries.

These two factors, along with the relatively mixed performance of natural resources projects in the

1960s and 1970s, has driven the Bank to a substantial rethinking of its strategy for natural resources management. This is taking place amidst a broad and gradual shift from "curative" solutions of natural resource problems to "preventive" solutions dealing with the underlying causes of natural resource degradation.

Natural resources management also has an important place in the Bank's rural development strategy. In the Bank's 1997 rural sector strategy paper—*Rural Development: From Vision to Action*—it was noted that rural development must focus on the entire rural productive system. Water resources allocation and comprehensive watershed management incorporate irrigation and drainage. The management of natural resources in sustainable production systems treats agriculture, forestry, and livestock as part of a larger system. Human capital development, infrastructure, and social development are integrated into rural development strategies and programs.

The NRM Portfolio

The Bank in early 1998 completed a portfolio review of NRM projects. Of the 65 projects that comprised the Bank's active NRM portfolio, the review identified three distinct types of projects, as well as several combinations, each of which faced somewhat different implementation challenges. The three basic types of NRM projects are those primarily designed to:

- ◆ Promote sustainable agricultural, forestry, and fisheries development and/or water resource use through the use of environmentally sound resource management techniques (such as soil conservation and sustainable forest, fisheries, and water resource management);
- ◆ Conserve and protect specific ecosystems and associated biodiversity (e.g., establishment or consolidation of national parks, wildlife reserves, etc.); and
- ◆ Strengthen national and/or subnational institutional capacity to achieve improved NRM (for example, development and use of rural land cadastres, geographic information systems, and other tools).

"Hybrid" projects include those combining production and conservation, or conservation and

institutional objectives and components. The study found that virtually all NRM operations involve some institutional development measures. Some also contain components to protect indigenous people and/or other vulnerable social groups.

An examination of both highly satisfactory and unsatisfactory NRM operations in the active portfolio found that the following attributes were often associated with good performance:

- ◆ They involve “win-win” approaches from both an economic and an environmental standpoint (e.g., improved soil and water management results in both tangible economic benefits at the farm and community levels and measurable environmental benefits at the microcatchment level);
- ◆ They entail high levels of beneficiary participation in project or subproject planning and implementation;
- ◆ They build upon locally generated solutions to resource management problems;
- ◆ There is strong borrower and beneficiary ownership of the interventions involved;
- ◆ They involve stable, competent, flexible, and demand-responsive executing agencies that identify closely with project objectives; and
- ◆ Their designs are not overly demanding in relation to the capacity of local institutions.

In contrast, most NRM projects at risk (as well as those that have had unsatisfactory outcomes) are characterized by the absence of many of these features.

The review’s general recommendations for improving NRM project quality and performance included the following:

Project objectives should be firmly agreed by all major stakeholders. This implies a need (a) for the involvement of affected stakeholders in project preparation from the outset; and (b) especially in non win-win situations, where there is potential for conflict among these interests over resource use, to carry out a systematic social assessment to determine who the relevant stakeholders are and what their “stakes” in the project are likely to be.

Project design should be compatible with the capacity of the (public and private) institutions responsible for implementation.

Project design should be based on the best possible understanding of the underlying ecosystem functions and services and the extent to which the proposed economic utilization is biologically sustainable. This implies a need for more systematic review of links between ecosystem functions and health of the natural resources concerned as well as the key biological and environmental factors enabling utilization at levels supported by the project.

More attention should be given to policy considerations, especially resource pricing, land tenure and access rights, and treatment of public and private goods, including common resources.

Careful attention should be given to the assessment of alternative approaches for achieving development objectives. Specific projects should ideally be developed as part of longer-term strategic national programs to improve the effectiveness and sustainability of natural resources management.

New or innovative approaches to NRM should be “piloted” during project preparation or through small components before being attempted on a larger scale in order to build local capacity and promote “learning by doing.”

Task managers need to be made more aware of the extent to which underlying country economic, political, and/or institutional factors may “derail” project implementation.

Strong partnerships and cooperation with other donors and NGOs that are active in natural resource management at the country level need to be established and maintained.

Case Study: NRM in East Asia

The evolution of the Bank’s approach toward natural resources management is also evident in a June 1999 Bank study entitled *Natural Resources Management: A Strategic Framework for East Asia and the Pacific*.

In this review, NRM projects were defined as those involving one or more of three types of activity:

- ◆ New, expanded or altered natural systems (Type A projects);

- ◆ Changes in the operational practices of natural resources management systems (Type B projects); and
- ◆ Alterations to the structural elements that influence the way in which natural resources are managed or decisions are made as to how natural resources should be used (Type C projects).

Based on this classification scheme, the NRM portfolio comprised 86 projects (77 percent of the rural development total in the Region) and an investment of \$8.4 billion (71 percent of the total). China and Indonesia accounted for the bulk of the NRM lending portfolio, with 63 percent of total projects and 82 percent of the investment volume.

The majority of the investment was in Type A projects, accounting for about 60 percent of total Bank investment, while Type B accounted for 18 percent and Type C for 23 percent. Lending volume is somewhat misleading, however, since it masks differences in average project size and, more specifically, the size of projects in China. When project numbers are considered, there is a more even distribution between the three types of investments: Type A projects account for about 37 percent of the total, Type B for 29 percent, and Type C for 34 percent.

A notable feature of the 1990-2000 NRM portfolio is the substantial change it represents over the portfolio of previous decades. In several countries during the 1990s, there has been a substantial increase in Type C investments, in which Bank lending is being used to leverage change in the institutional and regulatory frameworks that govern the ways in which natural resources are used. This is particularly noticeable in a country such as Indonesia, where the investment pattern in the 1970s and 1980s was characterized by a series of irrigation and tree crops development projects. These projects focused almost exclusively on hardware with little if any attention being paid to the difficult institutional and policy issues bearing on resource management in these sectors.

Today, many NRM projects in the EAP Region represent the application of cutting-edge approaches and best practices.

The Indonesia program includes a variety of experimental and highly innovative investments

addressing issues such as biodiversity conservation and integrated pest management that were not on the lending agenda in the 1980s. On biodiversity, the program is encouraging community-based approaches to conservation and natural resources management through projects such as **Kerinci Seblat Integrated Conservation and Development Project (ICDP)** and the **Coral Reef Rehabilitation and Management Program (COREMAP)**. In water resources, the program is already supporting pilot programs on river basin management (**Java Irrigation and Water Resources Management Project**) and promotion of water user's associations combined with the introduction of irrigation service fees (**Irrigation Sub-sector II Project**). Several agricultural sectoral adjustment loans currently under preparation intend to underwrite significant changes in the legal and regulatory framework governing both forestry and water resources management in Indonesia.



WORLD BANK

In the Philippines, the commodity-based projects of the 1980s were replaced in the early 1990s in part by a series of investments promoting decentralization and community-based development as solutions to unsustainable development of fragile upland areas and the protection of nature conservation areas. The diverse pipeline is expected to continue, since the recently completed Philippines Rural Development Strategy and Sector Strategy Note has identified significant lending and non-lending services on NRM.

This article was prepared by Ken Newcombe, (202) 473-6010, fax (202) 477-0565, with assistance from Aziz Bouzaher.

Forestry Sector



HERE is a convergence between the principles of partnership embodied in the Bank's *Comprehensive Development Framework* and the Bank's new emphasis on outreach for consultation and partnerships in improving the focus and quality of our work in the forest sector.

In striving to improve forest sector management, our country clients face the same challenges that

confront them more broadly at the macroeconomic level in striving for poverty alleviation and sustainable development. They must strike a balance between short-term welfare needs of the rural poor, whose well-being depends on access to forest products; formal sector economic production of timber and other forest products; and the need to conserve forests for the non-monetized services they provide to the local economy and for their local and global heritage values, such as unique biodiversity and cultures.

ESSD is managing the preparation of a new forest strategy for the Bank and is working in partner-

ship with the Bank's Regional Departments, the independent Operations Evaluation Department

(OED), and a broad array of external stakeholders.

To help adapt the Bank to the new forest paradigms that are arising and that will continue to develop as the policy and strategy exercise unfolds, ESSD is restructuring and reviewing its engagement in the forests sector. Changes in operational approaches and organization are being introduced:

- To further apply the structural adjustment instrument to pursue forest development;
- To take better advantage of the Bank's convening power to promote multi-stakeholder contributions to the development of forest sector strategies at the client-country level;
- To emphasize the strategic use of public-private partnerships at a global level to better inform our clients of needs, issues and opportunities for improved forest management, including conservation.

New Partnerships

In the area of public-private partnerships, several important initiatives are underway.

The *Alliance for Forest Conservation and Sustainable Use*, in which the Bank and the World Wide Fund for Nature (WWF) are the managing partners, pursues clear and measurable targets for forest conservation and management worldwide. The alliance strives to help others to (a) increase the volume and quality of their work in conservation and forest management; (b) illuminate trends and market opportunities; and (c) provide seed money that could mobilize project preparation and investment finance to support country and private sector initiatives (see *Box*).

The Forest Market Transformation Initiatives includes the CEO's *Ad Hoc Forum on Forests, Forest Trends* and the *Concession Management Program*.

Finally, the partnership effort includes more active participation by the Bank in international forums and interactions on forest issues, such as the Intergovernmental Forum on Forests (IFF) and the Interagency Task Force on Forests (ITFF).



An epiphyte. Rain forest, Costa Rica.

J. BLASER



Land conversion in the Caparo Forest Reserve, Venezuela.

J. BLASER

Market Transformation

Market Transformation Initiatives focus on encouraging the private sector's leadership role in transforming industry practice to support improved forest management and conservation, in partnership with other stakeholders with shared objectives and interests. The main focus of these initiatives is *facilitating consultation, analysis, and knowledge sharing that will influence thinking and commercial practice towards more sustainable timber harvest.* Another focus is the development of markets for forest goods and services that may provide incentives to maintain healthy forest ecosystems, such as carbon forestry, water purification, and ecotourism.

The *CEO's Forum* assembles NGOs, indigenous peoples groups, and top managers from the companies that influence global timber, pulp and paper trade, to work together on the major issues in forest degradation and loss globally. The Forum's third meeting in two years will be held on November 1st. CEO representatives will report on progress in defining extinction-risk forests; developing codes of conduct for improved forest management in West Africa; forest sector policy change in Russia and Indonesia; developments in certification and verification of improved forest management; and the role of plantations.

Forest Trends was formally launched as an independent body in April 1999 and has appointed an international Board of Directors from industry

and NGOs. Its work on carbon forestry markets, alternative fibers, and improved forest management is well underway. In October, it will convene in the Netherlands in the largest single gathering ever of industry practicing improved forest management. The focus will be on constraints and market opportunities for this growing segment of the forest products industry. The Bank's Concession Management Program has helped governments and large-scale timber concession operators in West Africa and Peru define good practice in forest management to minimize forest degradation and enhance biodiversity and social outcomes of timber extraction.

Mainstreaming Knowledge in Forests

Considerable progress has been made in building the mechanisms and content of the forest network of knowledge and information for use within and outside the Bank. The community of practice engaged in the forests sector and related work in the Bank is small and still rather fragmented. Some informal coalitions in the natural resources management area are developing in the Bank at regional and cross-regional levels. It will be a major task of ESSD to build upon these developments and continue to break down the organizational boundaries so that more effective use can be made of the limited resources of expertise available within the Bank.

One major approach of this objective will be an increased emphasis on involvement of the ESSD

Forests Team in selected operational projects and program preparation exercises, especially at the early, conceptual stages of development, and particularly for operations that stretch the boundaries of innovation and coverage in the sector.

A second approach will be the development of major pieces of applied research and development work in critical areas such as forest concession management, linkages between improved forest management and biodiversity conservation, the application of structural and sector adjustment mechanisms, and dealing with the poverty issue through forests and woodlands in forest-poor regions.

Forest Policy Implementation Review and Strategy

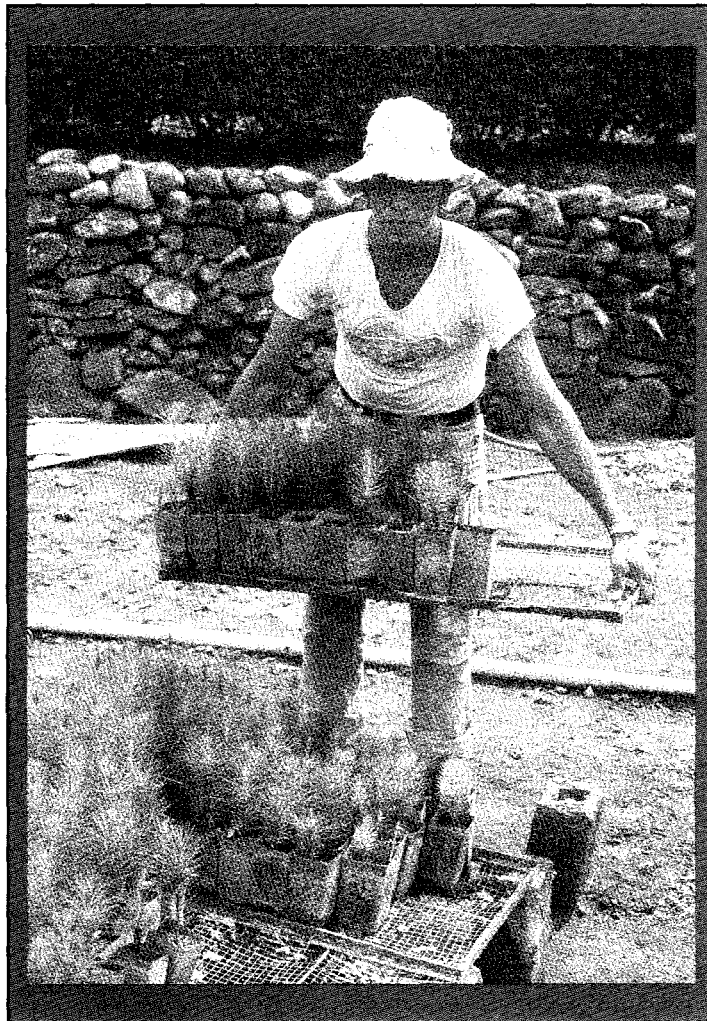
In light of the serious problems facing the forests of the world, we have embarked on a Forest Policy Implementation Review and Strategy process, which goes well beyond the more traditional retrospective portfolio review. It is addressing broader cross-sectoral issues and soliciting input and advice from a range of stakeholders. It is a joint effort between OED and operations, with OED providing analytical inputs at the different phases of the review. The goal is that the Bank's forest review and strategy will have ownership both within and outside the Bank, and will be built on a transparent and open debate with interested parties. The consultative process consists of three phases:

The first phase, currently underway, aims to gather and distill stakeholder perceptions of key issues, and is supported by a number of analytical studies encapsulating current knowledge and views on the key issues and questions to be addressed.

The second phase (early 2000) will focus on debating controversial issues through a series of eight regional consultations (one in each of the Bank's client regions) as well as one in each of North America and Western Europe, bringing together a diversity of stakeholders from government, civil society and the private sector, and examining where the World Bank's comparative advantage lies in addressing issues in the forest sector.

The third and final phase will draw on these studies and discussions to provide one more opportunity for stakeholders to interact with the Bank on the draft strategy.

This whole process is being carried out in partnership with The World Conservation Union (IUCN) to draw on their considerable expertise and diverse membership.



R. HUBER

Pinus sp. seedlings grown in the nursery, ready to outplant to the highlands of Ecuador.

THE ALLIANCE FOR FOREST CONSERVATION AND SUSTAINABLE USE

In April 1998, World Bank President Jim Wolfensohn and World Wide Fund for Nature Director General Claude Martin shook hands on an alliance between the two organizations to promote forest conservation. Just 18 months later, alliance activities are spanning the globe.

The Alliance occurs at a critical moment. More than half of the Earth's original forest cover is gone – most of it within the last 30 years. A recent review for the Latin America and Caribbean region concluded that the rate of forest loss has accelerated continuously since the 1960s, despite the increased attention to the issue. In East Asia, estimates of annual national deforestation rates range from 0.3 percent in Papua New Guinea to 4 percent in Thailand.

Specifically, the Alliance partners agreed to work together to support countries to achieve the following targets by the year 2005: (a) an additional 50 million hectares of new forest protected areas, plus a comparable area of existing but poorly managed reserves under effective protection, and (b) 200 million hectares of the world's production forests under independently certified sustainable management.

In its first full year of operations, the *Alliance for Forest Conservation and Sustainable Use* has helped obtain commitments from governments to bring under effective conservation an additional 34 million hectares of forest ecosystems in Brazil, Peru, and the Congo Basin. It has supported activities in 22 countries to catalyze improved forest management and conservation.

At the global level, the Alliance partners have joined hands with other major conservation NGOs and development agencies to support countries such as Vietnam, Russia, and Ghana to define and implement standards and codes of conduct. This can lead to independently verified or certified improved forest management and to better market access in markets sensitized to the need for timber products from well-managed forests.

In the last year, the Alliance has teamed up with others such as IUCN and WCMC to develop objective measures of effective protection of forests. Another partnership with the US Council on Foreign Relations, WRI, and the Loundsberry Foundation would develop a shared vision of desirable outcomes for the world's forests in 2050 and focus efforts on the most important resource management and policy issues affecting forest outcomes and undermining sustainable development.

To date, the alliance also has:

- Identified independent certification baseline conditions for approximately 80 million hectares in China, Indonesia, ECA, Peru, CAR, Cameroon, Gabon, and others;
- Promoted WB/WWF synergies through 40 country teams, pilot projects in 22 countries, and various joint missions in the Solomon Islands, Papua New Guinea, Madagascar, Georgia, Peru, Indonesia, and Cameroon, among others;
- Secured \$8 million in funding.

The Alliance works as a catalyst through its seed projects, dialogue and exchange of ideas. Most of these activities are not directly financed by either institution, though it often leads to leveraging investments from other sources. Examples of this include Vietnam, where alliance involvement has provided leverage for mobilizing \$1.2 million of private sector investment from Scan-Corn, a leading furniture manufacturing company.

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Integrating the Environment in Water Resources Management— Emerging Innovations



Water is already a scarce resource in many parts of the world. The problem is likely to worsen, based on current trends in water use coupled with projected increases in demand due to the growing needs of rising populations.

Several factors contribute to water scarcity, including variability in climate, demographic patterns, and unsustainable water-use patterns. Local scarcity can be compounded by the degradation of the water resource base, which can reduce use further downstream or increase the cost for other consumptive uses. Factors contributing to the degradation of water resources include (a) excessive abstractions from surface and groundwater sources, which can impact instream uses and reduce the ability to dilute waste discharges; (b) increasing water pollution from untreated/partially treated waste discharges from municipalities, industrial and mining operations, and agricultural runoff, which can increase the cost of treating water for downstream uses; (c) loss and encroachment of sensitive wetlands, which can compromise important hydrological and ecological functions; (d) unsustainable land use, which can increase soil erosion and sediment transport and reduce the economic life of the water infrastructure; (e) proliferation of water weeds and hyacinths, which can affect water quality, navigation, and fisheries and impose significant economic costs on local communities; and, (f) the loss of aquatic biodiversity due to damaged ecosystems from altered flow regimes and the introduction of alien species.

The 1993 World Bank water resources management policy paper promoted an integrated approach to managing water. It called for treating water as a scarce resource with an economic value, considering cross-sectoral aspects of water on a river-basin basis, adopting a participatory process involving key stakeholders in the planning and management of water resources, and internalizing environmental issues as an integral part of water resources policy development. This article summarizes some innovative activities prepared and supervised by the “Blue Team”—

the water resources management specialists within the Environment Department—to support the implementation of the Bank’s water resources management policy. The Blue Team is also supporting the review of the implementation of the Bank’s water policy.

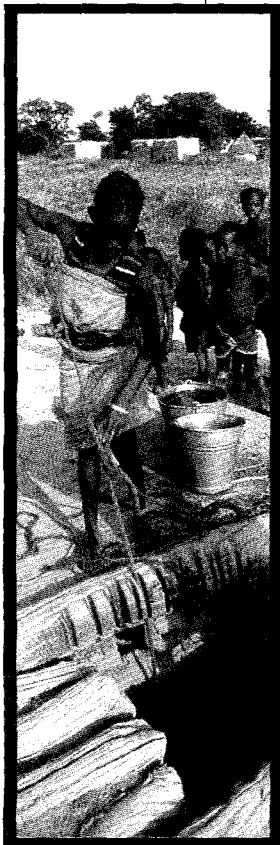
Understanding the Ecological Complexities

A central challenge facing water managers today is to define ecological flow requirements in rivers and other water bodies, integrate them with other consumptive and nonconsumptive uses in water policies, and operationalize those requirements into the rules for operating flow regulatory structures such as dams.

One example of this effort is the **Lesotho Highlands Water Project (LHWP)**. The LHWP is a complex inter-basin water transfer scheme that would export water from the Senqu/Orange River in Lesotho to the water-short areas of South Africa. The project, planned in five phases, will comprise a total transfer of up to 70 cubic meters per second (m^3/s).

The 1986 treaty between the governments of Lesotho and the Republic of South Africa provided the basis for the first phase. However, the treaty was drafted at a time when there was little attention paid to the environmental aspects of water schemes, and in particular, to the downstream effects of the transfers. It provided minimal compensation flows of $0.5 m^3/s$ for Katse Dam and $0.3 m^3/s$ for Mohale Dam, representing only about 3 percent of the mean annual runoff of the respective river systems. These flows were developed without any clear understanding of the social or ecological implications for downstream uses.

Since then, environmental awareness and sensitivity in the region has increased. The new water law in South Africa, for example, has elevated the importance of considering ecological factors in water policymaking in general and in river systems in particular. More recently, the inclusion of the Delta of the Orange River as a *Ramsar* site, a wetland of international significance, has also contributed to increased awareness.



C. CARNEMARK

Retrieving well water in Mali.

The Bank is supporting the Lesotho Highlands Development Authority (LHDA) in carrying out an Environmental Flow Assessment (EFA) for the LHWP (see *Box*, below). Preliminary findings from the EFA study have already had a significant influence in the design of the Mohale Dam, which has adopted a multiple-outlet structure with a much higher capacity (up to 3-4 m³/s) as well as a higher capacity lower-level outlet structure (up to 150 m³/s). This multiple-outlet structure would allow releases of varying quality to meet the requirements of downstream ecosystems, while the lower-level outlet structure would provide the flexibility for releasing occasional flood flows. The EFA study, a landmark for the Bank, has adopted sophisticated instream-flow methodology, which integrates biophysical considerations with social and economic considerations.

Environmental Flow Assessments in the Lesotho Highlands Water Project

The Environmental Flow Assessment for the LHWP is being carried out in four parts. The first part focuses on understanding the complete river ecosystem. The second part develops a series of flow scenarios. Each scenario describes a possible future flow regime in one part of the river system (from dam releases and catchment runoff) and the resulting condition of the river. The third part includes social and economic studies. A social analysis defines the human population that directly depends on the rivers for sustenance and assesses the impact of changes in river flows for the affected population. In the economic analyses, the social implications are translated into the costs of mitigation and compensation for the affected population. In the last part, hydrologists estimate the amount of water that would remain in the dams in each scenario, and thus be available for offstream uses such as transport and sale to South Africa. The range of completed biophysical/socioeconomic scenarios will provide the LHWP authorities with a sound basis for making informed decisions that integrate environmental flow requirements into operating procedures for the dams.

Integrated Water Resources Management

Another key challenge facing water managers today is the development of a comprehensive water resources management framework that incorporates cross-sectoral dimensions, including demand from urban, rural, industrial, agricultural, mining, energy, and environment uses. The Blue Team has initiated several pilot activities in the Latin America/Caribbean and Africa regions.

Trinidad and Tobago. In Trinidad and Tobago, the key water resources management challenges include growing water deficits and large unaccounted for losses in public supply; regular flooding and flood damage in densely populated urban areas; growing water pollution from municipal sewage discharges, rum processing, petrochemical industries, and quarrying operations; degraded watersheds from squatting and land clearing; and institutional weaknesses, such as the absence of a water policy or a sound water resources regulatory and institutional framework.

The Water Resources Management Strategy (WRMS) in Trinidad and Tobago, which is funded through the **Water Sector Institutional Strengthening Project**, links Bank investments in Trinidad and Tobago to various water sector activities. The WRMS integrates several cross-sectoral issues, including the development of (a) a water resources policy and institutional framework for the regulation of water resources, which will be particularly essential for regulating a privately operated water and sewerage utility; (b) a water resources development planning framework, which will utilize surface water, groundwater, and desalinated water for municipal, industrial and agricultural supply, incorporating ecological flow requirements for the Caroni and Nariva Swamps (a *Ramsar site*); (c) a flood control strategy; (d) a pollution control and water quality management strategy; (e) a watershed management strategy; and (f) a public awareness strategy.

Tanzania. In Tanzania, the **River Basin Management and Smallholder Irrigation Improvement Project** (RBMSIIP) represents the first

project in which the Ministry of Water is working with the Ministry of Agriculture and the Ministry of Energy to develop a model for river basin management based on participation of key stakeholders, including the national hydropower company, large-scale irrigation developers, thousands of smallholder farmers, livestock communities, and environmental interests. The basin management model will be adopted for the Ruvu/Wami basin, which is the source of water supply for the city of Dar es Salaam, where the water utility is in the process of being privatized.

In the Rufiji Basin, the Usangu Plain is under severe stress due to conflicts in land and water use between agricultural, livestock, and energy interests. The conflicts also threaten the fragile ecology of the Utengule Swamp, which plays a central role in regulating the Great Ruaha River before it flows into the Mtera Dam. Mtera regulates the Rufiji River, where about 70 percent of the country's electricity is generated through hydropower. The swamp also serves as a filter to trap sediments before they enter the reservoir. The RBMSIIP is supporting various interventions for improving river basin management, including a study to analyze the hydrology of the Utengule Swamp in order to improve its management and to improve irrigation water use and productivity.

Influencing Regional Agendas

The Blue Team has been supporting local institutions in client countries and Bank partners in the Africa and South Asia Regions to develop specific strategies for the integration of the environment into water sector policies, projects and programs. The Blue Team also is supporting the Africa Region and GEF in developing a program for addressing land and water degradation in Sub-Saharan Africa.

In Southern Africa, the Blue Team is supporting the Environment and Land Management Sector of the Southern African Development Community (SADC) in the preparation of a regional technical report entitled *Water Resources Management in Southern Africa: Enhancing Environmental Sustainability*.

The report will provide an overview of the state of the water environment and present practical methodologies and approaches to address the major challenges. It will disseminate lessons and best practice information on topics related to the environmental sustainability of water resources management, including ecological demand assessment, water pollution control, watershed management, wetlands management, aquatic biodiversity conservation, and water weed and hyacinth control.

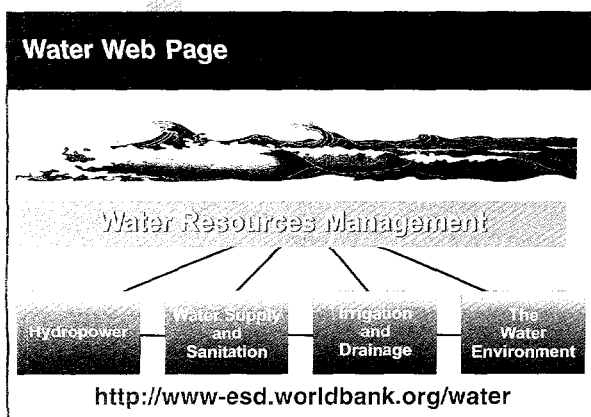
In India, the Blue Team is working with the South Asia Environment Unit to develop a strategy for mainstreaming the environment in supporting water resources institutional reforms and infrastructure investments. The specific goals of the strategy are to (a) facilitate the institutionalization of environmental planning and management decisionmaking in the development of water policies, state water plans, and institutions associated with the Bank's water sector reforms; (b) develop a strong national (or state or institutional) capacity for carrying out effective environmental planning and management (including EA work); and (c) facilitate the effective implementation of the Bank's environmental assessments.

Developing a Knowledge Base

The Blue Team is supporting the development of a knowledge base to improve understanding of the issues and practices related to the sustainable management of water resources. It is preparing a *Water Resources and Environmental Management Guideline Series* to support implementation of the World Bank Water Resources Management Policy and serve as a contribution to the Global Water Partnership and the World Commission on Dams. The guidelines (see *Box*, top of page 61) will present practical methodologies and approaches to address such challenges, and disseminate lessons and best practice information on specific topics related to the management of surface and groundwater resources.

Promoting Information Sharing

The Blue Team also is actively promoting information-sharing within the Bank and in our client countries. Within the Bank, water is organized under four main themes: hydropower (energy), water supply and sanitation, irrigation and drainage, and the water environment. These four themes form part of an integrated water resources management approach to address the cross-cutting issues of water throughout the various sectors and regions of the Bank's work. The water web page serves as a central organizing



WATER RESOURCES AND ENVIRONMENTAL MANAGEMENT GUIDELINE SERIES

1. Environmental aspects in water resources management: an overview
2. Environmental aspects of implementing the water resources management policy: lessons learned
3. Strategic environmental assessment: a watershed approach
4. Regulatory dimensions of water resources management
5. Water resources regulations for private sector utility management
6. Instream flow assessment, part I: concept and methodology
7. Instream flow assessment, part II: selected case studies
8. Water quality management, part I: assessment and protection
9. Water quality management, part II: municipal wastewater treatment plants
10. Water quality management, part III: non-point source pollution control
11. Environmental aspects of irrigation and drainage development
12. Environmental aspects of irrigation and drainage rehabilitation
13. Management of groundwater
14. Management of lakes
15. Water conservation: urban utility management
16. Water conservation: irrigation management
17. Wastewater reuse
18. Wetlands management
19. Management of aquatic weeds and hyacinth
20. Role of women in water management

site for water-related information throughout the Bank (see *Box*, page 60), and also serves as a vehicle for disseminating best practices. For example, the site highlights a recent major breakthrough in water hyacinth management in Lake Victoria using biological control (see *Box*, below).

As part of the **Africa Water Resources Management Initiative**, the Blue Team in conjunction

with the World Bank Institute organized the *African Water Resources Management Policy Conference* in Nairobi in May 1999 (see *At a Glance*, page 74, for more details). A key objective of the conference was to provide a forum for senior decisionmakers from various African countries to share—and draw lessons from—their experiences in water resources management policy and institutional reforms.

Successful Biological Control for Managing Water Hyacinths in Lake Victoria

Water hyacinths in Lake Victoria, originating from the headwaters of the Kagera River in the late 1980s, have created severe problems for local communities. The hyacinth is now present in the form of large mats fringing the shoreline, which foul fishing nets and obstruct fish landing and village washing areas, water supply intakes, and hydropower generating facilities. The decomposition of the hyacinth depletes dissolved oxygen, exacerbating deficits resulting from algae decomposition following blooms. The hyacinth population can double within a period of two weeks.

As part of the **Lake Victoria Environmental Management Project**, the government of Uganda initiated a program of biological control of hyacinths using weevils, to complement mechanical removal at a number of fish landing sites. Weevils were first introduced in Ugandan waters in December 1995. By late 1986, leaf-feeding scars gave testimony to the increasing presence of the weevils throughout the main infestations of hyacinth. Between May 1998 and May 1999, the situation changed dramatically. It was estimated that at its peak, there may have been between 6,000-10,000 hectares of hyacinth in Ugandan waters. In the eastern sector of Uganda's shoreline, the water hyacinth has disappeared almost completely. It is estimated that around 300 ha may have been removed by mechanical means, 2,000 ha may have moved to Kenya, 1,500-2,000 ha remain in the western sector of Uganda's shoreline; and the remaining 2,200-6,200 ha were destroyed as a direct and indirect result of biological controls.

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Quality Assurance and Compliance



VER the past 20 years, the World Bank has developed environmental and social safeguard policies designed to protect those who might be adversely affected by Bank-funded operations. These safeguards are intended to ensure that Bank operations do not harm people and do not needlessly harm the environment.

There are currently 10 environmental and social safeguard policies, covering environmental assessment, natural habitats, forestry, pest management, involuntary resettlement, indigenous peoples, management of cultural property, safety of dams, projects in international waterways, and projects in disputed areas. Project specialists are available in each area (see *Box*).

Quality Assurance and Compliance Unit

Within the Bank's Environmentally and Socially Sustainable Development Network (ESSD), the Quality Assurance and Compliance Unit was established to oversee the Bank's safeguard policies. The Unit is responsible for eight of the ten safeguard policies. The Unit works closely with the Legal Department, which is responsible for the remaining two policies.

The Unit supports the Bank's Regional Vice Presidents, who are accountable for policy compliance. In addition, the Unit works with: (a) the Bank's Policy and Core Services staff on oversight issues, particularly for new approaches such as the Comprehensive Development Framework and programmatic investment lending; (b) the Quality Assurance Group (QAG) and the Operations Evaluation Department (OED) for evaluation activities; and (c) the World Bank Institute and the Vice Presidency for External Affairs for learning and partnerships.

The main objectives of the Unit are to:

- ◆ Enhance the environmental and social sustainability and quality of all Bank products and services;
- ◆ Ensure that the Bank's safeguard policies are applied and implemented in Bank-supported operations; and
- ◆ Foster learning to improve overall quality.

Technical Specialists monitor the Bank's lending portfolio and provide advice on the meaning and interpretation of the policies. In addition, they provide reliable answers on the extent and status of policy compliance.

The ultimate responsibility for actual policy compliance rests with the Regions. The Unit is working with regional staff in two areas: (a) upstream and proactively, to provide a framework for ensuring compliance with the objectives of the safeguard policies in the context of the Comprehensive Development Framework (CDF) and programmatic lending, and to ensure quality at entry for socially and environmentally sustainable investment operations; and (b) downstream for effective monitoring and evaluation to assure that safeguard policies are actually implemented and that lessons of experience are incorporated in new operations.

Ongoing Initiatives

Triggering Safeguards. How many projects trigger each safeguards policy? To address this issue, the Bank is preparing an inventory of the current portfolio (about 1,500 operations) and the safeguard policies they trigger. Safeguard policy specialists are also assessing the status of compliance with policy objectives at entry and during implementation, and making arrangements for enhanced supervision.

Quality Assurance. ESSD is working closely with the Quality Assurance Group in conducting desk review assessments of Bank projects at both entry and implementation. ESSD is also working with QAG to ensure that the findings are utilized to enhance compliance and quality assurance.

Disclosure. The World Bank's disclosure policy is intended to encourage transparency and promote consultation with a wide spectrum of interested



S. SPARKES

parties on prospective projects. The objective is to enhance the quality of operations supported by the Bank. The Bank's disclosure process runs in tandem with safeguard policies. Disclosure of environmental assessments, resettlement action plans, social assessments, and indigenous peoples development plans is a key element in the Bank's commitment to sustainable development.

Training and Awareness. Training constitutes a very powerful tool to raise people's awareness of the Bank's safeguard policies and to ensure uniformity of application in a global, decentralized structure.

Safeguards and the Comprehensive Development Framework

Another challenging task lies in analyzing the objectives and applications of safeguard policies in the context of the Comprehensive Development Framework and in new instruments such as programmatic investment lending. In fiscal 1999, over 50 percent of Bank lending was for either structural adjustment initiatives or for programmatic investment lending.

Existing safeguard policies are geared to project investment lending. A new methodology is needed focusing on (a) how the objectives of safeguard policies can be applied in a "beyond-project" context; and (b) compliance criteria for programmatic approaches. This effort is currently underway.

This methodology will then need to be piloted, ideally through the CDF countries.

The CDF assumes a more holistic vision of development, with social and structural concerns being equal to macroeconomic and financial concerns. It assumes partnership with all development actors in country—including governments and private and voluntary groups—to articulate and implement development goals and strategy. The country dialogue supporting the CDF should focus on:

- ◆ Full ownership by all development partners of the goals of safeguard policies;
- ◆ National legislation to support these objectives;
- ◆ Institutional capacity to ensure implementation; and
- ◆ Third-party independent verification.

Future Directions

Quality Assurance. A central challenge is to move beyond a strict compliance function to one that seeks to work proactively to enhance the quality of all lending operations and to ensure that the goals of poverty reduction and sustainable development are met. The Chad-Cameroon Pipeline Project is a recent example of how ESSD is working upstream with regional staff to meet this objective.

Awareness and Training. In addition to Bank staff, there are many key groups with an interest in safeguards policies. These groups can work with Bank staff to protect people and the environment. These include borrowers and the private sector, who are responsible for implementing Bank policies; consulting firms, who often prepare environmental and social assessments; and NGOs, who work with local communities and who can help monitor implementation. Awareness and training on a trilateral basis can help to reinforce the goal of quality assurance and compliance.

Safeguard Policy Specialists

Environmental Assessment (OP 4.01)	Rusdian Lubis 458-5725
Natural Habitats (OP 4.04)	George Ledec 473-9267
Forestry (OP 4.36)	Jim Douglas 458-2273
Pest Management (OP 4.09)	H. van der Wulp 473-8164
Involuntary Resettlement (OP 4.30)	Maninder Gill 458-1296
Indigenous Peoples (OP 4.20)	Shelton Davis 473-3413
Cultural Property (OPN 11.03)	Arlene Fleming 458-8401
Safety of Dams (OP 4.37)	Alessandro Palmieri 473-0357
Projects in International Waterways (OP 7.50)	David Freestone 458-1743
Projects in Disputed Areas (OP 7.60)	David Freestone 458-1743

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Global Environment and GEF



In a variety of ways, human activities clearly affect the global environment, with potentially devastating consequences for today's and future generations. Major global environmental threats include climate change,

biodiversity loss, stratospheric ozone depletion, desertification and land degradation, degradation of fresh and marine waters, and the destruction of forests. Seven years ago at Rio, more than 150 countries agreed that these threats were significant. They negotiated global conventions for four of them—climate, ozone, biodiversity, and desertification.

Except for the phaseout of ozone-depleting substances, progress in protecting other aspects of the global environment has been slow. Atmospheric concentrations of greenhouse gases are continuing to increase, natural habitats continue to be lost, and soils and waters continue to be degraded.

The Bank and the Global Environment Facility (GEF) are partners in the effort to address these issues. In fiscal 1998, GEF was replenished with \$1.99 billion in new financing from 23 donor nations; with carryover, total GEF financing for 1998-2002 is \$2.75 billion.

Global Overlays

The **Overlays Program**, funded with Danish Trust Fund and Norwegian monies, provides analytical tools that strengthen and extend economic and sector work to internalize local, national, and global environmental externalities into the national decisionmaking process. There are two main foci: biodiversity and climate change. The program has produced a number of theme and strategy papers, which support the

methodological basis for work being carried out in 11 countries. Projects in another 10 countries are being considered. Final workshops will draw the lessons learned and produce best practices materials. The program was recently extended for a year with a termination date set for the end of fiscal 2000.

In the context of the possible development of market-based instruments under the Kyoto Protocol to the UNFCCC, the Bank Group, in collaboration with other donors, has begun a program of "National Strategy Studies" (NSS). The program aims to help client countries explore the opportunities and benefits of the different market-based mechanisms. By exploring the future implementation of emissions trading mechanisms, the program provides an appropriate vehicle for the identification of new Bank Group projects.

Another initiative responding to the call for moving EAs upstream is the use of Energy-Environment Reviews (EERs). Responding to the needs of client countries, these reviews are designed to cover the whole energy chain and the whole range of its environmental impacts (global, regional and local). EERs will also help map out Bank Group assistance on the supply and demand side of the energy sector, as well as pollution avoidance and control in areas such as efficiency, conservation, rehabilitation, and decommissioning.

Country Assistance Strategies and the Environment (CASE)

With support from the governments of Norway and Switzerland, the CASE program is part of the wider effort to mainstream environment and natural resource issues at the World Bank. Country Assistance Strategies are written every 2-3 years for each of the Bank's client countries, establishing the policy framework and the scenario for lending and non-lending services to be provided by the Bank over the succeeding five years. While local environmental issues and the link to poverty alleviation are key in the Bank's work, there are many instances (unique biological resources in transboundary areas in southern Africa, for instance) where critical global re-



S. LINTNER

sources are also at stake. The analytical approach being brought to bear in the CASE program is therefore designed to embrace both local and global issues. The goal of the CASE program is to develop a broad approach and analytical framework for dealing with environmental issues in the CAS that can be replicated across countries and regions. This work will lead to a best-practice document. Training material for country teams will emphasize the lessons learned in the development and application of the framework.

Staff Training on Global Environment Issues

The newly created World Bank Institute (a combination of the old Economic Development Institute and the staff training Learning and Leadership Center) combines training for both World Bank staff and for participants from member countries. A series of training opportunities are presented on a regular basis, both in Washington and in individual countries, with components related to global environmental issues. In the past year, these have included seminars in the Bank and internationally on the *linkages between various global environmental issues*, sector specific training courses and workshops (on topics such as climate change, ozone phase out, or biodiversity conservation), and global environment components in regular training on environmental-economic analysis and policy. A Safeguards Policy Course is offered regularly to inform Bank staff of the institution's commitment to a number of important environmental and social safeguard policies — several of which have important global dimensions.

The effort to fully mainstream the GEF into the Bank's operations is continuing with considerable success.

In fiscal 1999, for example:

- ◆ For the first time, the Regions' Unit Compact Summaries comprehensively include fiscal 2000 GEF outputs and, most importantly, cover GEF projects in portfolio performance measures;
- ◆ For the first time, formal GEF Work Program Agreements (at the level of vice presidents

between the Regions and ESSD) have been entered into for the regions, and a similar agreement is being concluded with IFC;

- ◆ GEF standard operations have been integrated into PDS and reporting systems, but the challenge remains to fully integrate all GEF-supported operations into monitoring systems that would ensure portfolio quality;
- ◆ The uniform costing principle is now fully applied to GEF projects, thus removing pricing disincentives to undertake GEF projects; and
- ◆ The GEF regional coordination function has been completely reorganized, with the regional units absorbing the regional GEF coordinators, the thematic specialists being integrated into ENV's thematic teams, and the GEF budgeting and business planning function transferred to ESSD's resource management team.

All these measures are designed to support effective monitoring by line managers of the Bank's GEF program, ensure that GEF remains fully integrated into the Bank's business management systems, remove disincentives for engaging in GEF processing, and help to mainstream the GEF and the global environment in the work of the regional operating units.

Program Objectives

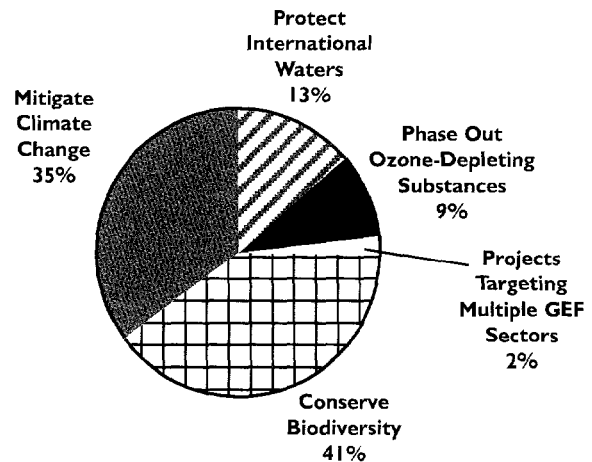
The program objectives of the Bank-GEF program are to support steady growth in GEF's overall transfer of funds to developing countries' for their efforts to address global environmental concerns.

In addition, the program is working to integrate GEF-funded activities with Bank lending for national sustainable development. Finally, the program is developing innovative and effective ways to channel GEF resources to client countries.

Portfolio Performance

As of June 30, 1999, the value of allocations to the Global Environment Facility portfolio implemented by the World Bank Group had risen

Distribution of GEF lending



to over \$1.06 billion. The portfolio, working in over 80 countries, is composed of 124 projects, plus 18 “enabling activity” grants to assist countries to fulfill certain stocktaking and reporting obligations under the Biodiversity Convention. The GEF-to-cofinancing ratio of over 1-to-4 reflects both the financial leverage effect of GEF funds and progress towards mainstreaming global environmental concerns in the Bank’s lending operations and policy dialogue with its clients. The portfolio focuses on four areas: protecting international waters, mitigating climate change, conserving biodiversity, and phasing out ozone-depleting substances. In addition, a few projects target multiple GEF sectors (see *Chart*, page 66).

During the course of the year, the GEF Council approved a work plan that included 28 regular GEF investment projects. The Board approved 13 new operations for over \$136 million. Projects at risk decreased to 15 percent of the portfolio, compared with 21 percent at the end of fiscal 1998.

In fiscal 1998, the Bank initiated a program of GEF Medium-Size Projects, which provide grants under \$1 million to expand partnerships with NGOs and expedite the Bank’s internal review/approval process. Of 21 MSPs authorized, 15 projects totaling \$10.8 million were

approved in fiscal 1999, compared to 2 MSPs in fiscal 1998. International and national-level NGOs received 11 of the MSPs approved during fiscal 1999, indicating good progress in expanding partnerships with NGOs.

Work Program Agreements entered into between regional operating units /IFC and the ESSD show output targets for the World Bank Group as a whole for fiscal 2000 in excess of last year’s performance. This is largely a result of strong development of the GEF program in the LAC region.

New Initiatives

In the area of strategic partnerships, new Bank-GEF initiatives in fiscal 1999 included:

- ◆ A project on renewable energy designed to increase the scale and effectiveness of Bank-GEF joint activities for the market penetration of renewable energy (approved by the Council);
- ◆ The **Black Sea/Danube Basin Nutrient Reduction Project**, which would accelerate GEF funding to assist countries in these basins in reducing nutrient inflows into the Black Sea (under development);
- ◆ **Country Frameworks for GEF Assistance**, which promote the conservation and sustainable

THE WORLD BANK AND THE MONTREAL PROTOCOL

As one of four implementing agencies under the Multilateral Fund, the World Bank has been successful in phasing out to date over 70 percent of the total amount of Ozone-Depleting Substances (ODS) targeted under the Montreal Protocol. This was achieved with only 40 percent of the funds at a cost of less than \$2 per kg.

In fiscal 1999, the Bank developed a number of innovative projects to assist developing countries in meeting their obligations to the Protocol by phasing out the use of ozone-depleting substances (ODS). In addition to on-going ODS phaseout activities in 20 countries, the Bank has developed sector approaches in China, auction programs in Chile and China, and—in cooperation with the government of Thailand—the first concessional loan program with Multilateral Fund and GEF funding. With the assistance of the United Kingdom, the Bank also recently developed a revolving fund scheme in Mexico to replace chillers.

A particularly important milestone is the recently approved China Production Sector Plan, which will close all 36 chlorofluorocarbon (CFC) production facilities in China. The Executive Committee of the Multilateral Fund agreed to assist China to end CFC production with a \$150 million grant awarded over 11 years. The agreement represents a major milestone in Montreal Protocol history. The plan is a result of collaboration between the World Bank and the government of China and lengthy negotiations with the Executive Committee of the Fund. The plan will eliminate about 45,000 tons of ozone-depleting potential. (China accounts for approximately 43 percent of the world's CFC production)

Another important project funded by donor countries, as well as the GEF, is the complete closure of CFC production in Russia by the end of next year. The World Bank is also presently working with India to gradually eliminate its CFC production. If the project is approved this year, Bank-implemented closure projects in China, Russia, and India would be underway that would eliminate 70 percent of global CFC production.

Over the last year, the Bank has worked to link investment projects to country strategies. The Chile Auction Program utilizes a quota system to ensure ODS reduction at the national level. In addition, the National Phaseout Strategy currently being launched in Thailand and Malaysia designs tailored country strategies to completely eliminate ODS through sector-specific investment projects.

use of biodiversity to help coordinate long-term GEF-Bank support for national strategies and actions plans for biodiversity (work on Mexico in progress); and

- ♦ **Land-Water Degradation in Africa**, which would address—together with GEF partners UNEP, UNDP, and others—the degradation of land and water resources in Africa and the associated adverse impact on global environmental values (under development).

Another active area involves collaboration with regional development banks and other donor agencies in their accessing of GEF funds through the Bank to help support GEF-eligible activities that are linked to their lending for national sustainable development programs. This involves the Asian Development Bank (one project already agreed, with several more in the pipeline), IFAD (two projects in Africa and the Caribbean in the pipeline) and KfW (a major solar development project in India under development).

This article was based on information provided by the Global Environment Team, (202) 473-4188, fax (202) 522-3256.

Legal Environmental Issues



THE Environment and International Law Unit of the World Bank's Legal Department (LEGEN) assists in advising the Bank on all environmental and international legal and policy issues related to Bank-financed, implemented and/or supported

projects. LEGEN reviews projects to help determine whether:

- ◆ Projects are in compliance with the Bank's safeguard policies;
- ◆ There is need to assist countries to prepare new environmental laws and regulations; and
- ◆ Projects are in compliance with relevant international conventions, and whether they need environmental legal covenants.

LEGEN also:

- ◆ Reviews Bank-wide papers related to environmental issues, operational policies (OPs) and procedures concerning environmental and social issues and the Environmental Assessment Sourcebook;
- ◆ Provides advice on Trust Fund-related operational work, including the Global Environment Facility (GEF), the Prototype Carbon Fund (PCF), the Rainforest Trust Fund, the Montreal

- Protocol, the Mediterranean Environment Technical Assistance Program (METAP); and
- ◆ Provides seminars and training workshops both within and outside the Bank.

LEGEN's work implements the Bank's development agenda by ensuring that the Bank complies with the national and international legal aspects of sustainable resource use, that the Bank applies and updates its operational policies to make them more responsive to social and environmental concerns, and that it provides technical assistance to clients on environmentally responsive legal frameworks. A number of initiatives in the Legal Department demonstrate the critical link between the Legal Department's environmental law work and the Bank's objective of poverty reduction.

Operational Policies

LEGEN has been actively involved in the conversion and revision process of various environmental and social safeguard policies. These include OP 4.11 on Cultural Property, OP 4.12 on Involuntary Resettlement, OP 4.20 on Indigenous Peoples, and OP 4.01 on Environmental Assessment (EA). LEGEN's involvement has entailed reviewing the policies, participating in working groups inside and outside the Bank, conducting broad consultations with Bank staff and stakeholders, preparing issues papers, and participation in the drafting of the final policies. With respect to OP 4.01, this work has led to a clarification that the Bank requires an EA for all operations financed by Bank loans or guarantees and for all components of a project, regardless of the source of financing.

The Global Environment Facility

LEGEN continues to provide legal support to the operations of the GEF. This includes mainstreaming GEF operations and framing the relationships between the Bank and other multilateral and bilateral development agencies to implement GEF projects. Specific significant legal issues in fiscal 1999 included an analysis of intellectual property issues raised in GEF financed activities, and the development of the legal documentation for the Medium-Size Grant Projects, designed particularly to allow NGO access to GEF grant resources.

Technical Assistance

A major aspect of LEGEN's work is to provide advice to borrowing countries on the development of legislation designed to reduce pollution, enhance the protection of the environment, and promote sustainable use of natural resources. LEGEN staff have assisted in the preparation of laws and regulations by aiding in the drafting of appropriate terms of reference, reviewing the work of legal consultants, supervising, reviewing and commenting on draft legislation. This assistance has covered a wide range of subjects which include:

1. Regulations on the sale and use of pesticides in the agricultural sector,
2. Regulations on environmental liability and privatization,
3. Legislation on protected areas,
4. Forest use related regulations,
5. Waste management,
6. Environmental impact assessment regulations and guidelines,
7. Water resources management,
8. Pollution control-related regulations,
9. Sustainable fisheries management, and
10. Institutional aspects of environmental protection and natural resources conservation including the establishment of trust funds.

IFC and Private Sector Challenges

LEGEN has worked closely with IFC and other multilateral financial institutions to address all environmental policy and legal issues posed by private sector involvement in development projects. Also, LEGEN has collaborated with the environmental unit of the Africa region (AFTE1) in a capacity building project to assist four African countries to address environmental, legal, and policy issues dealing with mining operations.

Training

A number of training activities to enhance environmental management in Bank-financed projects have been carried out in the Bank. Courses that were delivered by the Legal Department to Bank staff include *Institutional Frameworks for Environment Management*, which focused on institutions, various types of environmental management, comanagement initiatives with the private sector and civil society, as well as how institutions adapt to the international environmental agenda. LEGEN also collaborated with LEGSA to host a training session on the *Legal and Policy Perspectives Regarding Groundwater*. LEGEN staff also speak regularly at international legal conferences.

The Prototype Carbon Fund

The importance of dealing with the problem of climate change was reaffirmed in 1999 when the parties to the United Nations Framework Convention on Climate Change (UNFCCC) adopted the Buenos Aires "Plan of Action." In order to support the Bank's work on the Prototype Carbon Fund, the Legal Department has provided advice on the emerging regulatory framework of the UNFCCC and drafted complex legal documentation to establish the PCF.

The principal objective of the PCF is to demonstrate how project-based emission reductions transactions under the UNFCCC can promote and contribute to the sustainable development of the Bank's borrowing countries. The Bank will invite interested borrowing countries to participate in the PCF Host Country Committee. This Committee is intended to provide guidance on the operations of the PCF and generally on issues affecting sustainable development. Borrowing countries that host a PCF project will also attend a technical training program designed to enhance their capacity to benefit from the investment opportunities presented by the Kyoto Protocol. Future work on the Prototype Carbon Fund will

include the development of agreements to execute PCF projects and participation in training activities designed to enhance the capacity of borrowing countries to implement the UNFCCC.

Challenges for 2000

As part of the World Bank's Forest Policy Implementation Review and Strategy, LEGEN will be conducting a comprehensive study on emerging trends in forest legal frameworks for sustainable forest management. This is a continuation of earlier work in which LEGEN prepared a Memorandum Of Understanding (MOUs) for the World Bank/WWF Alliance for Forest Conservation and Sustainable Use.

With support from the Norwegian Government, LEGEN is participating in a review of environmental legislation in all the client countries regarding public involvement in the EA process. It will prepare a comparative analysis of these frameworks for both Bank and client use. These initiatives are designed to improve EA effectiveness and to ensure projects take into account the needs of the ultimate beneficiaries.

As part of the Bank's program on capacity building in Africa, LEGEN will collaborate with AFTE1 on the improvement and upgrading of the legal and regulatory framework for environmental impact assessment in Africa. A draft paper covering the analysis of the EA legal and regulatory frameworks of 23 African countries has been prepared and will be published during fiscal 2000. A comprehensive study of the legal and regulatory aspects of environmental protection in mining operations in selected African countries will also be published during fiscal 2000.

With the support of the government of Iceland, and in cooperation with the UN Food and Agricultural Organization (FAO), the Bank's Legal Department with assistance from LEGEN is preparing a guide on the interpretation and implementation of two international agreements regarding fisheries on the high seas. Both of these Agreements aim at a holistic regulatory system of the world's fisheries. They seek to address defects in the current regulatory systems which have inhibited the sustainable management of fisheries throughout the world. The purpose of the guide is to help developing countries that wish to implement one or both of these agreements develop viable regulatory mechanisms.

This article was prepared by Jean-Philippe Brisson (202) 458-0661, fax (202) 522-1573.

World Bank Institute Environment and Natural Resources Division Highlights — Vision for the Future



THE objective of the Environment and Natural Resources Division of The World Bank Institute (WBIEN) is to promote sustainable development in its social, economic, and environmental dimensions, by facilitating a learning dialogue and disseminating innovative approaches to sustainable development, primarily among policymakers and opinion leaders.

Since July 1998, following the merger of the former Economic Development Institute and the Learning and Leadership Center, WBIEN has incorporated staff training into its program. The newly created WBIEN has 48 staff comprising specialists in economic, institutional, social, environmental, rural development, and other related fields, who are responsible for researching current skills and training needs, and planning outreach and training programs. The division is structured into six thematic groups (see *Figure*).

WBIEN's priority concerns include the following:

- ◆ Strengthen our capacity and flexibility to respond to immediate needs and emerging crisis situations in client countries;
- ◆ Focus on key countries to deepen the impact of our activities;
- ◆ Diversify and intensify our partnerships within and outside the Bank;
- ◆ Integrate global environment concerns into local and regional activities;
- ◆ Harmonize our programs with those of other multilateral institutions;
- ◆ Launch innovative initiatives for the 21st century; and
- ◆ Expand the use of distance learning technologies to broaden the reach of our activities.

Fiscal 1999 Activities

Fiscal 1999 marked the second year of the five-year Social Development (SDV) learning program. During the year, cross-linkages were established and joint activities undertaken with the other Environmentally and Socially Sustainable Development Network (ESSD) Families, and with a number of Families in the Human Development (HD) and the Poverty Reduction and Economic Management (PREM) networks. Several notable initiatives integrating social and

environmental aspects of development took place or are currently underway.

The April 1999 Cultural Site Management Workshop brought together leading experts in the field and Bank staff to discuss and further develop ways to achieve effective cultural heritage site management in the context of the natural environment. As a result of this course's success, WBIEN and the National Park Service jointly held a Cultural and Natural Heritage Site Management Seminar in Georgia in June 1999. In addition, a learning event series entitled Strategic Planning and Implementation of Public Involvement in Environmental Decisionmaking, planned for October 1999, will follow up the March 1999 course on Partnerships and Participation in Environmental Management. WBIEN's SDV team is also collaborating with the ENV and RDV teams to review the Bank's course on safeguard policies.

Urban Environment and Pollution Management

The focus of the group's work is on large urban centers, where pollution from a variety of sources affects public health and the sustainability of natural resources. The objective of the program is to strengthen the capacity of central and local governments, private industry, and civil society to better manage the environmental consequences of rapid urban and economic growth. Fiscal 1999 saw the launching of a program that spearheads WBIEN's new vision for doing business. The **Clean Air Initiative for Latin American Cities**, launched in Washington D.C. in December 1998, combines the efforts of the private, public, civil society, and research and academic communities from 18 countries in the region, as well as representatives of international organizations and institutions including the World Bank, the Inter-American Development Bank, and the Carl-Duisberg Gesellschaft.

The **Urban and Industrial Environmental Management Seminar/Working Tour**, held in Shanghai, China, in April 1999, exposed participants to urban industrial environmental practices in Shanghai and Singapore. The participants undertook in-depth working tours to industrial and urban management sites, in order to draw comparative lessons from their own

national situations. The seminar covered three themes: (a) air pollution; (b) wastewater treatment; and (c) solid waste management. These themes were addressed by case studies, examples of good practice, videos, films, and field visits. The field visits to World Bank projects, Chinese owned and operated plants, China-Singapore industrial park, and joint ventures made possible a thorough understanding of the plants and their operations.

Water Resources Management

The World Bank Institute's Water Team assists policymakers, practitioners, and Bank staff in preparing and introducing reforms to implement sustainable water resources management in World Bank client countries. WBIEN's water program concentrates on the institutional, economic, and poverty dimensions of water policy, and on the Bank's environmental priorities as they relate to water.

During fiscal 1999, the program engaged about 1,350 policymakers through national events in eight countries (Thailand, Cambodia, Philippines, Nepal, Armenia, Mexico, Brazil, and West Bank & Gaza). In addition, five international seminars drew participants from 56 countries.

An example of a national activity is the **Brazil Water Resources Management Policy National Conference** held in Foz de Iguaçu, Brazil in April 1999. WBIEN co-sponsored this five-day conference with the Brazilian Water Resources Association (ABRH) and the International Water Resource Association (IWRA). It provided a forum for the presentation of best practice and exchange of experiences on water resources management in the context of Brazil's new water policy and its evolving institutional and regulatory framework.

The **Africa Water Resources Management Policy Conference**, organized as part of the Africa Water Resources Management Initiative jointly with the Environment Department, was held in Nairobi, Kenya, in May 1999. It was the largest gathering of African water policymakers and practitioners to date, with about 240 participants from 24 African countries.

During fiscal 2000, WBIEN will participate in an initiative to design a series of guidelines on water resources and environmental management in Africa and to develop training materials to help countries implement the policy aspects of those guidelines.

Sustainable Forestry

There appear to be no existing formal mechanisms for the exchange of ideas and experiences

to foster synergies in sustainable forest management across countries in East Asia and the Pacific (EAP), and the Amazon and Congo basins, where the vast majority of the remaining moist tropical forests in the world are located.

WBIEN's Sustainable Forestry: National and

Global Perspectives Program is assessing these synergies by promoting partnerships. This is being achieved via the development of a South-South network of forestry professionals.

In order to build up the network, the program sponsored international workshops on fire hazards and transboundary haze in Surabaya, Indonesia; conserving forests through carbon sequestration, in La Guaira, Venezuela; and forest concessions and certification, in Yaounde, Cameroon.

The participants identified priority issues to be included in the follow-up training and capacity building activities.

A Forestry Network for the Congo Basin. The objectives of the European Community/WBI Congo Basin Program are to build capacity in forest policy formulation and implementation and to promote regional cooperation to harmonize policies in six countries in the Congo Basin (Cameroon, Gabon, Congo-Brazzaville, Congo-Kinshasa, Equatorial Guinea, and Central African Republic). During the course of implementing the first phase in fiscal 1999, WBIEN worked with government and local organizations to create a network of policymakers and managers.

Protecting Water Resources in the Amazon Basin

The overall goal of this program is to stimulate the creation of sustainable initiatives that promote local and regional management of aquatic and water resources in the Amazon River Basin.

The first event took place in November 1998 on a boat that toured the estuary. At this meeting, stakeholders in the region formed a network to share information and experiences. The example of this network will serve to encourage the creation of similar initiatives within key sub-basins of the Amazon. It is hoped that these networks will grow in their ability to share information and influence policies in the region.

Rural Development and Sustainable Agriculture

The major achievement in fiscal 1999 was the delivery of the core course Policy and Institutional Reform for Sustainable Rural Development in Washington, (December 7-11, 1998); and the curriculum design workshop on Sustainable Agriculture Training held at the West Africa Rice Development Association (WARDA) in Côte d'Ivoire (May 4-6, 1999). Several other complementary activities were held throughout fiscal 1999, including two regional seminars and one regional training-of-trainers workshop on decentralization and participation for sustainable rural development; a study tour in Brazil on sustainable natural resources management by rural communities; and stakeholder consultations on sustainable rural development in Ghana, Nigeria, and Bangladesh.

Environmental Economics and Policy

The Environmental Economics and Policy (EEP) program helps mainstream the approaches and methods of environmental economics in the decisionmaking process of governments and across sectors.

The highlight of this effort during fiscal 1999 was the first core course on **Environmental Economics for Development Policy** (July 12-23, 1998), which brought together over 50 practitioners from over 25 countries as well as Bank staff to study the latest thinking and experience on the subject.

Environmental Training

This article was prepared by Monica Hale (202) 458-5794 and Mariam Britel-Swift (202) 473-6722, fax (202) 676-0977.



Cleaner Fuels in Central Asia

Increasing urban traffic, highly polluting vehicles, and poor-quality fuel are among the factors contributing to a serious air pollution problem in Central Asia and the Caucasus.

The World Bank, in collaboration with the Canadian International Development Agency (CIDA), is embarking on a regional study of the urban air pollution problem in the Central Asia region. The main part of the study and regional consensus building will take place in 1999 and 2000.

The work will focus on three areas:

- **Air quality**, including an analysis of air quality data in major cities, collection of baseline data in selected cities, an assessment of current air quality monitoring programs, and an assessment of future air quality monitoring equipment needs.
- **Vehicle fleet characteristics**, including an analysis of octane requirements for gasoline-engine vehicles, an analysis of current and future vehicle fleet characteristics, an evalu-

ation of current vehicle emissions inspection programs, and an assessment of future equipment needs for the inspection programs.

- **Downstream Petroleum Sector**, including an analysis of existing refinery configurations, current and future refinery economics, recommendations for new fuel specifications, an evaluation of current fuel quality monitoring programs, and an assessment of the impact of existing petroleum policies on the introduction of cleaner fuels.

In addition to the studies, the regional program is an opportunity for key policymakers, the private sector, multinational banks, aid agencies, and financiers to exchange information and experience among international partners and participating countries. The ultimate objective is to develop recommendations regarding fuel-quality specifications, measures to reduce vehicle emissions, and measures to improve air quality management.

For more information, contact Martin Fodor at the World Bank (mfodor@worldbank.org).

As part of the **Africa Water Resources Management Initiative**, the *African Water Resources Management Policy Conference* was held in Nairobi in May 1999. The conference

African Water Resources Management Policy Conference

attracted about 240 senior water resources officials, including specialists from 24 African countries and various bilateral and multilateral agencies. The selected country teams included planners, managers, institutions specialists, water quality managers, ecologists,

economists, and lawyers engaged in water resources planning, development, and management.

The conference focused on four thematic areas of water resources management: economics and financing; legislation and regulation; institutions; and environmental management. The primary theme of the conference was sharing knowledge to manage Africa's fragile water resources in the 21st century.

The conference objectives were to (a) provide a forum for senior decisionmakers from various African countries to

share—and draw lessons from—their experiences in water resources management policy and institutional reforms; (b) promote the development of a community of African water resources professionals; (c) define a program of short-term actions for the management and exchange of water resources knowledge; and (d) contribute to the definition of a long-term African Vision for Water.

The conference provided a unique opportunity to review national experiences and to distill lessons and best practices on substantive components of water policy reforms, stake-

holder consultation, political commitment, timing, and implementation. An overriding conclusion of the conference was the need to intensify the communication process. As a starting point, conference attendees proposed establishing an African Water Resources Management Forum for the exchange of knowledge among African water resources professionals and to link the national and regional professional associations to other mechanisms, such as those set up by the Global Water Partnership. The Forum is being set up with an interim secretariat based in Nairobi.

Pollution Management Discussion Notes

In January 1999, the Environment Department launched a new series of discussion notes on pollution management. The series—*Pollution Management In Focus*—is aimed at fostering professional discussion, the dissemination of lessons learned from Bank operations, and the transfer of best practices in pollution management. The views are those of the authors and should not be considered official policy or attributed to the World Bank Group.

To date, the series has produced five notes:

Environmental Funds, by Magda Lovei. Environmental funds (EFs) are increasingly popular environmental financing mechanisms in developing and transition economies. The failure of governments to tackle environmental problems by putting in place incentive policies, environmental regulations, and enforcement mechanisms, as well as failures of the financial and capital markets to provide access to financing at reasonable terms, are typically the underlying reasons why special environmental financing mechanisms are established. EFs, however, often only postpone rather than solve these problems, and they may contribute to existing distortions. This note provides guidance on approaches to dealing with EFs.

Comparative Risk Assessment, by Ede Ijjasz and Laura Tlaiye. Comparative risk assessment is a tool for comparing and ranking risks to health and ecosystems and identifying strategies for managing those risks, on the basis of both scientific data and public values. Recent experience in the United States and in other countries worldwide shows how CRA can assist in setting environmental priorities, promoting coordination between agencies, building consensus, and giving expres-

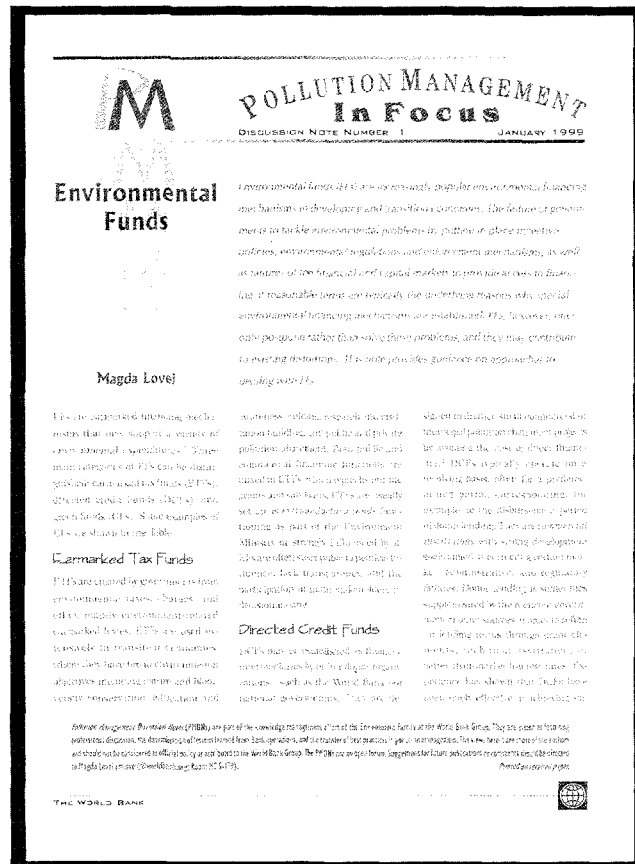
sion to the environmental concerns and preferences of the community.

Better Environmental Decisionmaking, by Kseniya Lvovsky. The Decision Support System for Integrated Pollution Control (DSS/IPC) is a useful tool for assessing environmental problems and arriving at cost-effective solutions. This instru-

ment permits rapid estimation of the extent and impacts of pollution in a given situation and provides support for decisions on pollution management. Its use of standard emissions factors, simple dispersion models, and cost functions enables analysts to arrive at reasonable estimates even when field data are inadequate. By providing information about pollution problems and alternative abatement measures, the system can foster participation and consensus building.

Indoor Air Pollution, by Kirk Smith. Indoor air pollution caused by burning traditional fuels such as wood, crop residues, and dung is less evident than outdoor pollution, yet it is responsible for a significant part of country and global disease burdens. The main groups affected are poor women and children in rural areas and urban slums. This note reviews the evidence on health effects from indoor air pollution in developing countries, looking in detail at India. It outlines possible solutions and concludes that the only feasible long-term remedy is improved access to cleaner modern energy.

Environmental Implications of Privatization, by Magda Lovei. Privatization fosters economic efficiency and contributes to governments' fiscal health by relieving them of the burdens of state ownership. Besides these economic benefits, privatization also offers an opportunity for environmental improvements.



A Selection of World Bank Group Environmental Publication

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Guidelines for Monitoring and Evaluation for Biodiversity Projects

Environment Department Note. No. 65
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Climate Change

The Effect of a Shadow Price on Carbon Emissions in the Energy Portfolio of the World Bank: A Backcasting Exercise

Environment Department Paper No. 62
Shannon Ragland, Michael Lazarus, Karen Holmes, and others, July 1998

Greenhouse Gas Assessment Handbook

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Monitoring and Evaluation of Market Development in World Bank-GEF Climate Change Projects—Framework and Guidelines

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Eric Martinot, April 1999

Transportation and CO₂ Emissions: Flexing the Link: A Path for the World Bank

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Lee Schipper and Celine Marie-Lillio, September 1999

Come Hell or High Water: Integrating Climate Change Vulnerability and Adaptation into Bank Work

Environment Department Paper No. 71
Ian Burton and Maarten van Aalst, September 1999

Environment

Protecting Our Planet—Securing Our Future

A joint publication of UNEP, U.S. NASA, and the World Bank
Robert T. Watson, John A. Dixon, Steven P. Hamburg, and others, November 1998

Environmental Economics

Environmental Capacity Building: A Review of the World Bank's Portfolio

Environment Department Paper No. 68
Sergio Margulis and Tonje Vetleseter, April 1999

Economic Reform and Environmental Performance in Transition Economies

World Bank Technical Paper No. 446
Gordon Hughes and Magda Lovei, September 1999

Trade, Global Policy, and the Environment

World Bank Discussion Paper No. 402
Per G. Fredriksson, ed. 227 pages (ISBN 0-8213-4458-7)
\$20. August 1999

Environmental Implications of the Economic Crisis and Adjustment in East Asia

East Asia Environment and Social Development Unit
Discussion Paper No. 1. January 1999

Environmental Assessment

The Evolution of Environmental Assessment in the World Bank: From "Approval" to Results

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Robert Goodland and Jean-Roger Mercier, December 1998

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Ken Green, January 1999

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Aidan Davy, January 1999

Public Consultation in the EA Process: A Strategic Approach

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Nightingale Rukuba-Ngaiza, May 1999

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New Opportunities for Development: The Desertification Convention

Environment Department Dissemination Note No. 64
Hassan Hassan, John English, and Günter Riethmacher,
November 1998

Good Practices in Drylands Management

Ragnar Øygard, Trond Vedeld, and Jens Aune, forthcoming

Natural Resources Management: A Strategic Framework for East Asia and the Pacific

A joint publication of the Rural Development Unit and the Environment and Social Development Unit of the East Asia and Pacific Region.

Rob Crooks, William Magrath, Glenn Morgan, and others,
June 1999

Pollution Management

Developing a Culture of Industrial Environmental Compliance: A New Approach

Environment Department Paper No. 70
Michelle L. Keene, September 1999

Eliminating a Silent Threat: World Bank Support for the Global Phaseout of Lead from Gasoline

Magda Lovei, May 1999

Pollution Prevention and Abatement Handbook 1998: Toward Cleaner Production

The World Bank Group in collaboration with the UNEP and the United Nations Industrial Development Organization. 468 pages. (ISBN 0-8213-3638-X) \$125.00. April 1999

Social Development

BPXC's Operations in Casanare, Colombia: Factoring Social Concerns into Development Decisionmaking

Social Development Paper No. 31
Aidan Davy, Kathryn McPhail, and Favian Sandoval Moreno, April 1999

Social Assessment of the Azerbaijan National Environment Action Plan: A Focus on Community Responses to the Caspian Sea Environmental Disaster

Social Development Paper No. 32
Ayse Kudat, Ahmed Musayev, and B. Bulent Ozbilgin, July 1999

Social Assessment of the Turkey Forest Sector Review

Social Development Paper No. 34
Ayse Kudat with B. Bulent Ozbilgin, Nezh Kuleyin, and others, forthcoming 1999

The Economics of Involuntary Resettlement: Questions and Challenges

Michael M. Cernea, ed., Directions in Development, 1999

Social Assessment Prioritizes Urban Water and Wastewater Problems in Russia

Social Development Note No. 41
Ayse Kudat, Bulent Ozbilgin, and Sergey Artobolevskiy,
December 1998

Social Assessment Guides Policies on Rural Land Reform in Moldova

Social Development Note No. 42
Nora Dudwick and Deborah Youssef, December 1998

Social Assessment Helps Ensure Benefits of Agricultural Privatization for Kazakh Farmers

Social Development Note No. 43
Stan Peabody and Deborah Youssef, December 1998

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Food Security and the Challenge to Agriculture in the 21st Century

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ESSD Rural Development Series
Jitendra P. Srivastava, Nigel J.H. Smith, and Douglas A. Forno, 1999

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Uma Lele, William Lesser, and Gesa Horstkotte-Wesseler, 1999

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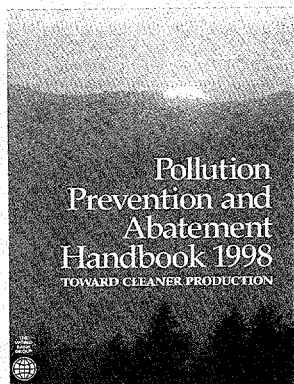
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For the world's 1.3 billion impoverished people, development brings opportunities for a better way of life. Such outcomes are jeopardized, however, if we ignore the environmental consequences of economic development.

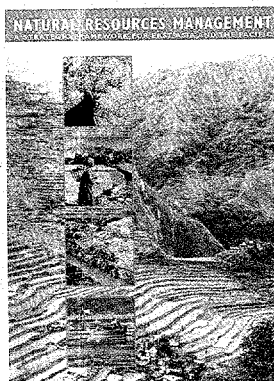
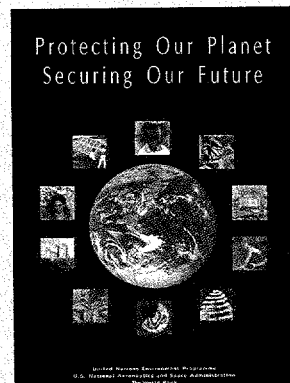
**— Robert T. Watson
Director, Environment Department**



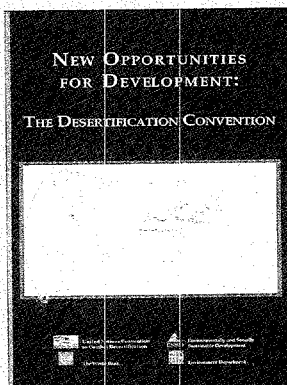
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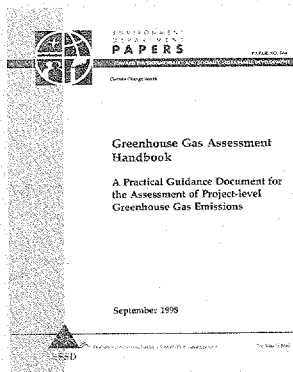


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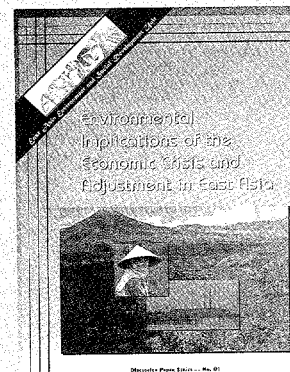


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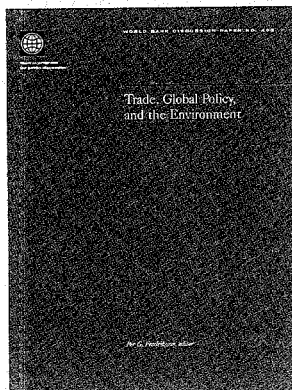
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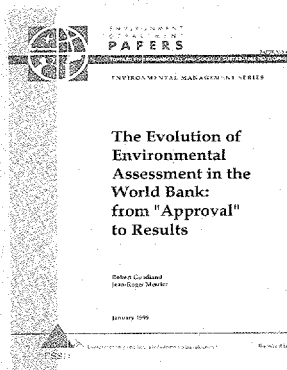
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