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Environment

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BUILDING

ONLINE HIGHLIGHTS

- ▶ **ENVIRONMENTAL ECONOMICS & INDICATORS**
ENVIRONMENTAL ECONOMICS FOR DEVELOPMENT POLICY: ENHANCED TRAINING AND DISSEMINATION.
- ▶ **BIODIVERSITY**
ALLIANCE ESTABLISHED WITH WORLDWIDE FUND FOR NATURE (WWF) TO FOSTER FOREST CONSERVATION AND SUSTAINABLE USE. PROTECTED FOREST AREA IN BRAZIL'S AMAZON TRIPLES.
- ▶ **ENVIRONMENT ASSESSMENT (EA)**
LATEST EA SOURCEBOOK UPDATE PRODUCED ON BIODIVERSITY AND ENVIRONMENTAL ASSESSMENT.
- ▶ **GLOBAL CLIMATE CHANGE**
A NEW ENVIRONMENT STRATEGY FOR THE ENERGY SECTOR PREPARED.
- ▶ **POLLUTION MANAGEMENT**
POLLUTION PREVENTION AND ABATEMENT HANDBOOK RELEASED.
- ▶ **DRYLANDS**
UN CONVENTION TO COMBAT DESERTIFICATION: WORLD BANK, UNDP, AND IFAD TO SUPPORT THE GLOBAL MECHANISM FUNDING INSTRUMENT.
- ▶ **FORESTS**
PRESIDENT ANNOUNCES AMBITIOUS TARGETS FOR IMPROVED FOREST MANAGEMENT AND ECOSYSTEM CONSERVATION BEFORE UN GENERAL ASSEMBLY.



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- ▶ **EUROPE & CENTRAL ASIA**
BANK ACTIVELY PARTICIPATES IN FOURTH MINISTERIAL CONFERENCE ON ENVIRONMENT HELD IN AARHUS, DENMARK.
- ▶ **LATIN AMERICA & THE CARIBBEAN**
FIRST COMPUTERIZED ENVIRONMENTAL ATLAS RELEASED WITH MORE THAN 200 INDICATORS ON BIODIVERSITY, DEFORESTATION AND OTHER AREAS.
- ▶ **AFRICA**
AFRICA REGION FINDINGS AND INFOBRIEFS BEST PRACTICES - FOR EXAMPLE: FINDINGS #113: INTEGRATED COASTAL ZONE MANAGEMENT FOR GHANA.
- ▶ **SOUTH ASIA**
SOUTH ASIA RURAL DEVELOPMENT PROJECT BRIEFS - FOR EXAMPLE: MEDICINAL PLANTS: LOCAL HERITAGE WITH GLOBAL IMPORTANCE. INDONESIA: ENVIRONMENT & DEVELOPMENT - A COUNTRY STUDY.
- ▶ **EAST ASIA & PACIFIC**
CONFRONTING AIR POLLUTION IN ASIA'S CITIES: GUIDEBOOK ON URBAN AIR QUALITY MANAGEMENT STRATEGY IN ASIA RELEASED.
- ▶ **MIDDLE EAST & NORTH AFRICA**
MENA/MED WATER INITIATIVE ESTABLISHED AMONG VARIOUS DONORS AND MEDITERRANEAN COUNTRIES.

REGIONS AND COUNTRIES



Did you know that Indonesia's forests are second only to Brazil's in size, and

represent 10 percent of the world's remaining tropical rainforests? Or that Costa Rica's tropical rainforests have 1,400 tree species? Or that Turkey had a \$77 million World Bank loan approved in March 1993 for the Eastern Anatolia Watershed Rehabilitation Project? Learn more by checking out the six regional sites: Africa, Europe and Central Asia, East Asia and the Pacific, South Asia, Latin America and the Caribbean, and the Middle East and North Africa.

DEVELOPMENT FORUM

Successful learning implies participatory discussion and the sharing of information - the Development Forum will provide just such a dialogue space. Please join moderated discussions on many interesting topics. You might want to check out how such a dialogue works by visiting the Climate Change site's archived discussion area concerning the Bank's energy and environment strategy.

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Environment

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Sierra Natural Resource
Management Project Panel

by Maria E. Castro

toward environmentally and socially sustainable development • Fall 1998



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ENVIRONMENT

Letter from the New Vice President Environmentally and Socially Sustainable Development



The mission of the World Bank Group has always been to help reduce poverty and improve the standard of living in developing countries, but the understanding of how best to do that has changed over the years. While earlier Bank activities focused largely on massive infrastructure projects, often involving the dislocation of communities and damage to terrestrial and marine ecosystems, in recent years the Bank—along with the United Nations and other development agencies—has come to appreciate the critical importance of *sustainable* development. This concept, that sustainability is at the heart of all successful development efforts, is now so much a part of the Bank's view of its mission that it is transforming the nature of our work.

Sustainability means a number of things, but first and foremost it means that resources, including human resources, are enhanced or protected rather than damaged or depleted as part of the development process. This is an idea that is both simple and complex. On the one hand, it is hard to argue with the goal of preserving the earth and leaving communities undisturbed. On the other hand, it sounds unrealistic, utopian—how can bridges and roads be built, enough food be grown, enough trees be harvested, enough dams be constructed without doing some damage? And how can investors be induced to support development activities in which they are constrained from doing what they feel they need to do to make a reasonable profit?

The answers to these questions are still evolving, and part of my work as head of the Bank's Environmentally and Socially Sustainable Development (ESSD) Network is to help guide that process.

In ESSD, we are working directly on sustainability in three major areas: the environment, social issues, and agriculture/rural development. Our Environment Family has teams working on water, forests, drylands, climate change, and cities. The Social Family is concerned with protection of indigenous peoples and other vulnerable groups, resettlement, post-conflict reconstruction, and the inclusion of marginal groups in designing and carrying out development projects. And the Rural Family is concerned with, among other things, agriculturally sustainable development, which means increasing the productivity of complex (as opposed to monoculture) farming systems on existing farmland without damaging the natural resource base. These three families also work across the Bank in cooperation with energy, infrastructure, and other departments.

Sustainable development also means working in partnership with other development agencies, NGOs, and community groups to gain the benefit of their knowledge in areas where they have the comparative advantage. For example, the Bank has been privileged to work with IUCN, the Nature Conservancy, the World Wildlife Fund, and many other organizations to help facilitate programs to heal damaged rivers, forests, and coastal areas which we could not have carried out alone. Often the Bank helps to leverage financing, or provides technical assistance, or disseminates best practices. Whatever we do, we are now doing it with the awareness that we are one—but only one—of the important actors in the international community that are working toward a prosperous and healthy future for people all over the world.

A handwritten signature in black ink that reads "Ian Johnson". The signature is written in a cursive, flowing style.

Ian Johnson

Environment Matters is a magazine of the World Bank Group. This Fall 1998 issue is an annual review of the Bank's environmental work during fiscal 1998. Also visit the magazine on the Bank's Web page.

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This annual review of the Bank's environmental work in fiscal 1998 highlights our accomplishments and remaining challenges.

It reflects the experience of staff from all regions, the Environmentally and Socially Sustainable Family's Environment Department and Social Development Department, and IFC and MIGA.

Welcome to Environment Matters...

The World Bank Group			
The World Bank IBRD	IDA	IFC	MIGA
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 173 countries	Est'd 1988 145 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

Letter from Yolanda Kakabadse, President, The World Conservation Union



*The Fruits of Partnership —
IUCN'S Collaborative Work with the World Bank*

Since IUCN was created some 50 years ago as a union of governments and nongovernmental organizations, the concept of partnership has been central to our work. It was, however, the adoption of a new mission statement by the IUCN General Assembly in Buenos Aires in 1994, and the emphasis this mission placed on influencing societies, that ushered in a new era of institutionalized partnership. Indeed, the globalization of the world economy and the emerging sustainable development agenda necessitated collective wisdom and action in order to be effective in societies at all levels of development.

When the IUCN signed a collaborative agreement with the World Bank in February 1995, many skeptics thought it both risky and impractical. It was considered risky because as a government-owned, results-oriented institution interested in development, the World Bank was believed to be incompatible with a conservation and NGO-oriented institution such as IUCN. It was thought to be impractical because the Bank, as a multibillion dollar lending institution, was considered too big for IUCN to influence its policies and operations.

The initial agreement was, therefore, seen as a pilot scheme designed to try to redefine the nature of IUCN's interaction with the Bank from frustrated critic or hired consultant toward a more equitable and effective partnership, but without compromising the Union's value as a fair but firm critic. In the years since then, our work together has made considerable progress on several fronts. There is a growing mutual understanding of the missions and cultures of the two institutions. It is becoming clear that the idea of getting close to the World Bank in order to have a positive influence on it was not quite so unrealistic. A solid atmosphere of mutual trust has developed and the number of collaborative programs and projects has continued to increase.

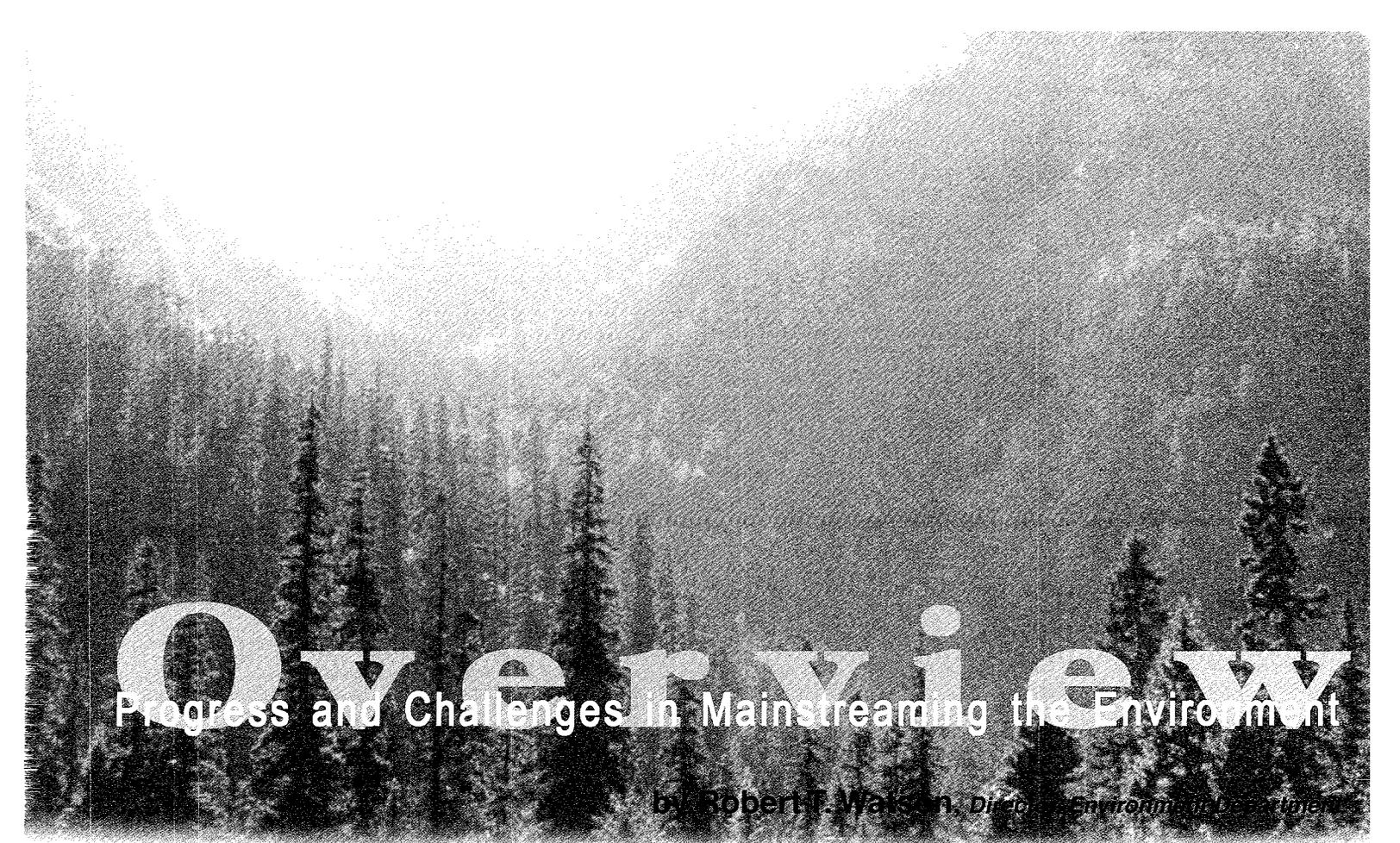
One of the tangible results of our work has been a joint comprehensive review of the impact and effectiveness of large dams, followed by the creation of a 13-member World Commission on Dams (WCD). The WCD is now developing and promoting internationally acceptable standards for the planning, assessment, design, construction, operation, and monitoring of large dam projects. The Commission is also developing decisionmaking criteria and policy and regulatory frameworks to assess alternatives for energy and water resources development.

Another result of our partnership has been the publication in February 1998 of an innovative handbook, *Ecosystem Management: Lessons From Around the World - A Guide for Development and Conservation Practitioners*. This was the result of an intensive eight-month effort.

Another product of this alliance is the four-volume *Global System of Marine Protected Areas*. This report, the result of extensive investigation, is already having a significant impact on global funding priorities.

Conferences, publications, and creative thinking involving stakeholders in different parts of the world are all helping IUCN and the Bank to generate new answers to old problems. Only by acting together will we be able to place the environment at the forefront of the international development agenda and ensure that the environment is mainstreamed into the Bank's policies and operations. In concert and by mobilizing our respective constituencies, we hope to have a greater effect than either of us could have alone.


Yolanda Kakabadse



Overview

Progress and Challenges in Mainstreaming the Environment

by Robert F. Watson, Director, Environmental Operations

The primary goal of the World Bank is to assist member countries in alleviating poverty and achieving their development goals. However, the Bank believes that such goals can be only be achieved if we also address local, regional, and global environmental issues. This is particularly important given that developing countries are, in most instances, much more vulnerable to environmental degradation than industrial countries. Local and regional problems such as air and water pollution, and global environmental problems such as climate change, loss of biological diversity, desertification, and deforestation—compounded by an ever-increasing world population—are threatening the goal of meeting basic human needs: adequate food, clean water, safe shelter, and a healthy environment. The ratification by our member countries of a number of environmental conventions is evidence of the growing importance that all countries place on the environment and environmentally sustainable development.

In 1997, World Bank president James D. Wolfensohn and managing director Caio Koch-Weser each made public statements that reconfirmed the Bank's strong commitment to sustainable development. Mr. Koch-Weser, on World Environment Day,

June 5, presented the Green Top Ten, a set of measures to protect air, land, and water resources that the Bank believes should be carried out on a global scale. Then on June 25, at the United Nations General Assembly Special Session (UNGASS) on the environment, Mr. Wolfensohn announced a set of actions the Bank would take to help achieve those and other global environmental goals.

Now, 16 months later, it is time to evaluate what progress the Bank has made toward fulfilling these commitments. The left column of the matrix shows the Bank's commitments regarding major global environmental issues, local environmental issues, and our efforts to change our own institutional culture and procedures to help achieve them. The right column of the matrix summarizes our progress to date in each of these areas.

Many of the policies, strategies, analytical tools, and new products and partnerships generated in the past year are now in place or progressing well. For example:

- ◆ Key operational policies on environmental assessment and economic evaluation have been developed and

are being used to design environmentally sound projects.

- ◆ Lending policies and strategies in key sectors are being revised with the view to making them fully responsive to environmental issues. An environmental strategy for the energy sector is scheduled for review by the Board in October, and a policy implementation review of the forest sector is currently underway with the aim of developing a forest sector strategy.
- ◆ The development and dissemination of analytical tools, such as sector resource accounting and global overlays, is helping to facilitate our environmental work.
- ◆ Significant progress has been made in the past year in developing new products such as the Prototype Carbon Fund, and partnerships such as the World Bank-Worldwide Fund for Nature (WWF) Alliance for Forest Conservation and Sustainable Use.

While it is too early to observe the impact of these tools on the Bank's lending and nonlending portfolio, we fully expect that

they will be extremely useful in the effort to mainstream environmental issues into our development work. Hence, while significant progress has been made, much remains to be done. Areas of emphasis during the next year will include:

- ◆ Develop a coherent World Bank Group corporate environment strategy, which will integrate the wide range of policies and activities currently underway. The corporate strategy will address the linkages among poverty alleviation; economic and social

development; and local, regional, and global environmental issues. It will also will define clear objectives and targets on a regional basis, with monitorable performance incentives for Bank staff.

- ◆ Expand and accelerate the effort to integrate environmental concerns into the Bank's economic sector work and its country assistance strategies.
- ◆ Demonstrate the effectiveness of the Safeguard Policies Compliance Unit.

- ◆ Strengthen and accelerate in-house (management and staff) and member country training on environmental issues, emphasizing the links between environmental objectives and sustainable development.

There is no doubt that mainstreaming the environment into the development process is a major challenge, but it is one that the Bank and its member countries must meet if the goal of a socially and environmentally sustainable world is to be realized.

THE BANK AND THE ENVIRONMENT — STATUS REPORT

Goal

Climate Change

- Establish a Global Carbon Market (should the Parties to the Convention find this helpful) to reduce the overall costs of limiting greenhouse gas emissions and to provide Bank member countries every opportunity to obtain an equitable share of the cost savings and access to more environmentally friendly technologies
- Form a strategic partnership with the GEF to increase the competitiveness of renewable non-greenhouse gas emitting technologies

Progress in Fiscal 1998

- Continued research on baselines, and on certification and verification of emissions reductions.
- Developed a preliminary structure for operation of the Prototype Carbon Fund (PCF). However, the design and operation will not be finalized until after the next Conference of Parties to the Framework Convention on Climate Change and the Kyoto Protocol in November 1998. The PCF is expected to commence operations in early 1999, subject to approval of the Bank's Executive Board.
- Signed a Memorandum of Understanding with 13 companies and 5 governments that have indicated their willingness, as potential participants, to take part in the development and establishment of the PCF.
- Initiated, using donor funds from Switzerland, Canada, and Finland, the National Strategic Studies Program to build capacity on climate change issues; workshops in India and Slovakia examined the potential of the PCF mechanism with prospective hosts (developing countries and economies in transition).
- Established a working group to finalize details of Bank-GEF partnership, which will aim to increase the scale and pace of renewable energy development in member countries. Partnership being designed in consultation with IFC, environmental NGOs, and the private sector. Under this arrangement, GEF's contribution to renewable energy projects, currently \$100 million a year, will be significantly increased.
- Following further consultations with Bank management, the GEF Secretariat, and the GEF Council, the partnership will be piloted in 2 or 3 countries during FY99.

Biodiversity and Sustainable Forestry

- Conserve and manage critical ecosystems on land and at sea

- For biodiversity, the Bank and GEF supported:
 - ◆ Establishment of two new marine protected areas (MPAs) at Ramsar (wetland) sites along Georgia's Black Sea coast under the Georgia Integrated Coastal Zone Management Project;
 - ◆ Creation of a national park along South Africa's Cape Peninsula;
 - ◆ Consolidation of MPAs along the Caribbean coasts of Mexico, Belize, and Honduras under the Mesoamerican Barrier Reef Initiative (under preparation);
 - ◆ Capacity strengthening for protection and management of Indonesia's coral reefs under COREMAP;
 - ◆ Pollution mitigation and protection of endangered species off the coast of Patagonia.
- For terrestrial ecosystems, the Bank and GEF supported:
 - ◆ Conservation and sustainable forest management in tropical forests in Papua New Guinea involving local landowners and a conservation trust fund;
 - ◆ Planning for conservation and sustainable production in temperate forests, and for wildlife corridors in the eastern and central Caucasus;
 - ◆ Regional cooperation to establish transboundary conservation areas and wildlife corridors in the western Tien Shan mountains, Central Asia (Kyrgyzstan, Kazakhstan, Uzbekistan);
 - ◆ Land use planning for conservation in the Cape Floral Kingdom, South Africa;
 - ◆ Conservation of the Sunderbans coastal forests, a critical habitat for tigers (with the Asian Development Bank);
 - ◆ Changes in land management to reestablish native wildlife in Zimbabwe for ecotourism and safaris;

Goal

- Establish strategic partnerships with NGOs and industry to help conserve biodiversity through the extension of protected areas (50 million ha of new protected forest areas plus a comparable area of existing reserves under effective protection), and by increasing the forest area under sustainable management (100 million ha each of the world's tropical and boreal/temperate production forests under independently certified sustainable management)
- Identify opportunities for market-led change toward greener practices for coastal and marine products

Progress in Fiscal 1998

- Established the World Bank-World Wide Fund for Nature Alliance (April 1998) and a facility (July 1998) to build a pipeline of projects and activities to achieve conservation and sustainable management targets. The Brazilian government has issued a decree (April 1998) to create 25 million ha of new protected forest areas in the Amazon, and the Alliance is looking for ways to help the government implement the decree.
- Established (January 1998) an ad hoc forum of forest industry CEOs and environmental NGOs, and issued recommendations on conservation, forest management, and the creation of markets for nontimber forest products.
- Established, with World Resources Institute, Forest Trends (spring 1998) as an independent non-profit NGO with Bank and MacArthur funding. A strategic coalition of the private sector, financial institutions, NGOs, and research bodies, FT provides information on forest management and serves as a forum for resolving contentious issues.
- Initiated a study with Conservation International under the Critical Ecosystems Partnership Fund to evaluate the key pressures on four terrestrial ecosystems and develop a pipeline of projects.
- Launched (June 1998) the Carbon Forestry and Land Use Management Action Plan to evaluate the development benefits of trade in forest and soil-based carbon offsets within framework of the Kyoto Protocol.
- The year-old Marine Market Transformation Initiative successfully launched three pilots in FY98:
 - ◊ Support to an NGO trade association to test and certify live coral reef fish for aquariums (Philippines);
 - ◊ Assessment of markets for the reef food fish industry and supply alternatives (including cage culture of high valued species, Hong Kong and Taiwan); and
 - ◊ Consensus building for developing a Code of Conduct for Sustainable Shrimp Farming (Thailand).

Stratospheric Ozone

Depletion

- Eliminate the production of ozone-depleting substances in Russia
- Assisted Russia in reducing its annual consumption and production of ODS from 120,000 tons to 15,000 tons through a \$60 million GEF phase-out project.
- In conjunction with Russia's State Committee for Environmental Protection (SCEP), designed a plan, signed by each of Russia's 7 ODS-producing enterprises, to eliminate ODS production by the end of 2000. The initiative is expected to be supported by \$27 million in grant funding. A donor roundtable in Moscow is scheduled for October 1998.

Desertification and Land

Degradation

- Assist the Desertification Convention through a rural strategy emphasizing the links between poverty and land degradation
- In partnership with others, establish mechanisms for mobilizing financing and coordinating implementation of the Desertification Convention
- In collaboration with UNDP, initiated assistance to member countries to develop National Action Plans.
- Finalized a best practice study, developed training modules, organized three seminars, and established a knowledge node on technical and financial issues in drylands management.
- Modus operandi of the Global Mechanism, which is managed by the International Fund for Agricultural Development (IFAD), UNDP, and the World Bank, established during the first two meetings (March and July 1998).

Water

- Support the Global Water Partnership, which offers an opportunity to solve water issues in a more holistic manner
- Support, in collaboration with IUCN, establishment of the World Commission on Dams to raise environmental and social welfare standards for large dams
- The new Global Water Partnership has established a global technical advisory committee; is preparing its work program and establishing regional technical advisory committees for Southern Africa, Western Africa, Latin America, and Asia; and has organized an African Water Resources Management Policy Workshop to be held in Tanzania in January 1999.
- The World Commission on Dams, established in June 1998, is finalizing its staffing, strategic work plan, and research program.

Goal

- Support regional seas programs
- Make water an economic asset given that it is a scarce resource

Progress in Fiscal 1998

- Expanded implementation of Helsinki Commission objectives in the Baltic Sea.
- Coordinated preparation of a strategic action plan for the Red Sea.
- Designed a series of investment projects for the Black Sea.
- Contributed to the ICZM initiatives for protection of shared marine ecosystems in the western Indian Ocean, western Caribbean, and Black Sea.
- The Water Resources Management Policy emphasizes efficient water use and sustaining productive water systems. The Bank, recognizing that institutional and policy reforms are just beginning, is:
 - ◊ Through the Africa Water Resources Management Initiative, working to strengthen water management institutions in 14 nations and the transboundary Nile, Southern Africa, Volta, and Senegal river basins.
 - ◊ Promoting water policy reforms, including an increased private sector role in urban water management, in LAC, MENA, and South Asia.

Global Environmental Facility

- Help the GEF Secretariat, UNDP, and UNEP ensure that governments commit more money for GEF
- 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.

Environmental and Social Assessments

- Strengthen supervision of the Bank's lending and nonlending activities, including those of private sector partners, by establishing a stronger system to monitor compliance with environmental and social safeguard policies
- All World Bank safeguard policies finalized and harmonized with those of IFC.
- A Safeguard Policies Compliance Unit established to monitor implementation of all safeguard policies during project classification, preparation, and supervision.
- Safeguards training courses developed for task team leaders.
- Dissemination of good practice, including publication of *Environmental Assessment Sourcebook Updates* to guide staff and clients on the application of environmental assessments.

Green Accounting

- Adopt greener accounting and eliminate harmful subsidies
- Genuine savings calculations for Latin America and the Caribbean featured in the Environment chapter of *World Development Indicators 1998*. Full table on genuine savings and resource depletion in *World Development Indicators 1999*.
- Technical assistance on developing greener national accounts provided to South Africa and Mongolia.
- Where relevant, subsidy reductions were a conditionality for emergency lending to Southeast Asian countries affected by the financial crisis.
- Developed standard environmental indicator tables for country assistance strategies, including green accounting aggregates.
- Initiated preparation of a how-to guide to sector resource accounting for forests, minerals, and water, and for valuing pollution.

Lead Pollution

- Facilitate the phaseout of lead in member countries within five years
- Facilitated the acceleration of lead phaseout in several countries by raising political commitment, facilitating a dialogue among stakeholders and countries, and providing technical assistance. Specifically, the Bank has:
 - ◊ Provided assistance to prepare national lead phaseout programs in Azerbaijan, India, Jamaica, Kazakhstan, Pakistan, Peru, and Uzbekistan.
 - ◊ Collaborated with other organizations to support regional programs in Latin America, the Caribbean, Central and Eastern Europe, and the former Soviet Union.

Cities

- Make cities more livable
- Many urban environmental activities have been mainstreamed into infrastructure, energy, and other types of projects. There were also 7 stand-alone environmental projects, totaling \$480 in lending, appraised in FY98:
 - Pollution Management, Argentina
 - Guangxi Urban Environment, China
 - Shandong Environment, China
 - Municipal Environmental Infrastructure, Coatia
 - Solid Waste Management, Latvia
 - Environmental Sewerage and Sanitation, Maritius
 - Tashkent Solid Waste, Uzbekistan.

This matrix is based on comments by James D. Wolfensohn before the United Nations General Assembly Special Session, June 25, 1997, and on the Bank's Green Top Ten.

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Africa Region

Jean-Roger Mercier

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

In the Africa region in FY98, the Bank's emphasis was on: (i) including environmental concerns in country assistance strategies and mainstreaming them in Bank operations; (ii) capacity building for environmental management in the countries; (iii) effective management of the environment portfolio; and (iv) environmental assessment and review activities.

Mainstreaming the Environmental within Bank Operations

Country Assistance Strategies. A 1997 concept paper on incorporating environmental concerns into country assistance strategies (CAS) is guiding this effort by the region's Environment Group. A paper on linkages between poverty and the environment is also in preparation.

Environmental Indicators. A Bank-supported project in Côte d'Ivoire is developing a set of environmental indicators for use in macroeconomic and sector planning and policymaking. The Ministry of Planning is taking the lead in integrating these indicators into planning activities. The recent trends in environmental indicators will also be central to the dialogue between Côte d'Ivoire and the international community over forestry and environmental management policies.

Strategic Sector Work

Biodiversity. In Sub-Saharan Africa, current practices in the economically and socially important sectors of agriculture and forestry are having a negative impact on biodiversity. The *Strategic Framework for Conservation of Biological Diversity in Sub-Saharan Africa*, now under preparation by the Africa Environment Group, will provide information and guidance for the Bank and others to ensure that support for biodiversity conservation is

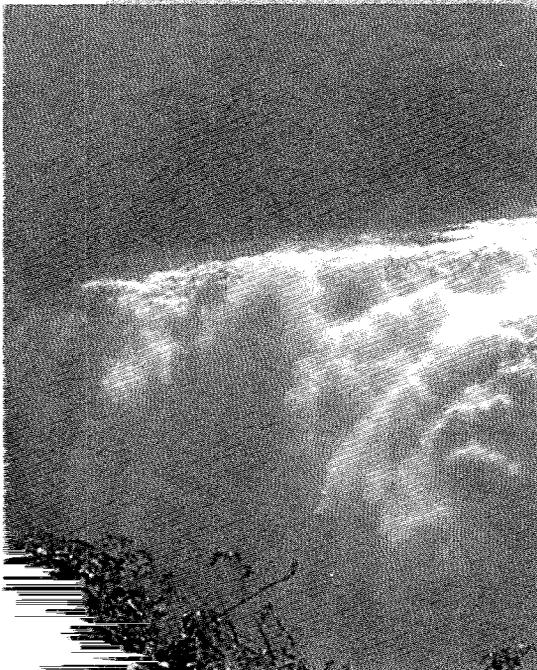
effective and yields sustainable results. The report will be available from the BioNode website (see last section).

Climate Change. The World Bank has contributed both financially and technically to establishment of the Southern Africa Regional Climate Outlook Forum (SARCOF, 1997) and the West Africa Climate Outlook Forum (May 1998). These groups meet three times a year (pre-, mid-, and post-growing season) and provide coordinated long-lead climate forecasts for local climate data user groups, including farmers' associations, weather forecasters, and extensionists.

The Africa Environment Group also supports the Southern African Development Community (SADC) in capacity building in Southern Africa, focusing on training in climate change issues, long-lead climate forecasting, and interpretation of climate information. Other SADC activities, in Zimbabwe and South Africa, are testing the potential of Activities Implemented Jointly (AIJ) and the Clean Development Mechanism (CDM) to facilitate greenhouse gas emissions reduction and carbon sequestration.

In addition, the Bank is developing guidelines on adapting to climate change that may later be integrated into CAS planning and sector work.

Integrated Coastal Zone Management (ICZM). New developments in FY98 include the creation of a Bank-supported Secretariat for Coastal Zone Management in Eastern Africa (SEACAM), located in Maputo, Mozambique, which is assisting member countries in capacity building and preparation of a regional ICZM strategy. This strategy, to be published in FY99, will facilitate development of multisector planning approaches and



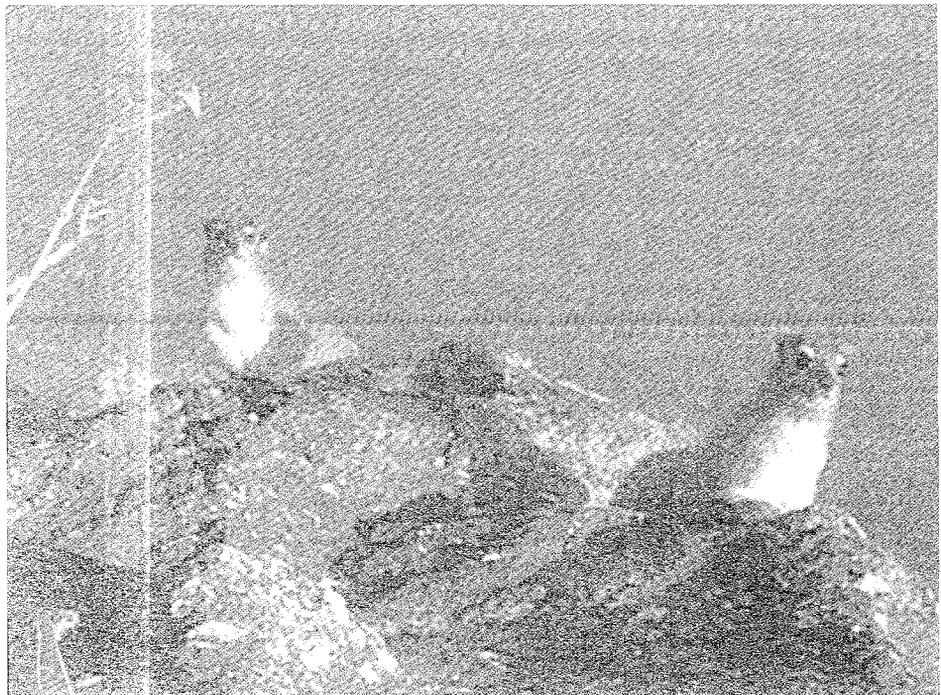
J.R. MERCIER

enhance cross-sector cooperation during implementation and monitoring of ICZM projects.

Traditional and Renewable Energy. The new 5-year funding cycle of the Regional Program for the Traditional Energy Sector (RPTES), which began in FY98, coincided with implementation of the Senegal **Sustainable and Participatory Energy Management Project** (\$5 million in Bank funding out a total project cost of \$20 million). Also in FY98, Burkina Faso launched a \$2.4 million project component aimed at mitigating CO₂ emissions by promoting photovoltaic systems and substituting woodfuel use with kerosene stoves and higher-efficiency charcoal kilns. With more than 10 years experience in successful community-based resource management, Burkina has also prepared a \$9 million traditional energy project to improve management of the catchment area of Ouagadougou.

Also in FY98, the Government of Guinea completed a comprehensive traditional energy sector policy review under the leadership of a local multisector team, with significant input from NGOs, civil society, and urban-based charcoal traders who had until recently been clearcutting forest lands in semiurban and rural communities.

Urban Environment and Health. Since FY95 the Bank has been assisting a three-phase study, "Bridging Environmental Health Gaps," under the region's **Urban Environment Management** initiative. Phase I, funded by Norway and concluded in FY96, found considerable untapped potential for urban infrastructure projects (primarily water and sanitation) to alleviate disease. The study established that for a fraction of the cost of health investments, infrastructure sector interventions may be able to relieve as much of the burden



Hyrax in the wild, Hwengue National Park, Zimbabwe.

of disease. Phase II, funded by Sweden and begun in FY98, will carry out the recommendations of Phase I through a pilot program in Ghana. Phase III, scheduled for FY99 and to be funded by the Swiss, will focus on rural infrastructure.

Capacity Building for Environmental Assessment

EA Capacity Building. The effort to build capacity for environmental assessment in Sub-Saharan Africa began in the early 1990s and gained momentum in 1995, when African ministers of environment issued a declaration concerning the need to enhance EA capacity in their countries. As a result, the Bank supported two major EA capacity building activities in FY98:

- ◆ At a workshop in Nairobi, Kenya, 80 African EA experts strategized the development of EA capacity in Sub-Saharan Africa.

- ◆ At the subregional level (West Africa), 30 trainees from environmental agencies, sector and economic management ministries, and NGOs in Benin, Burkina Faso, Chad, Côte d'Ivoire, Ghana, Niger, and Togo gathered in March 1998 for a two-week EA training session in Ouagadougou, Burkina Faso. The network of EA practitioners that emerged from that session formed the second layer of networks strengthened after the Nairobi workshop.

Portfolio

Local Environmental Management. The Bank is also assisting in decentralizing environmental management and is responding to funding requests from subnational entities:

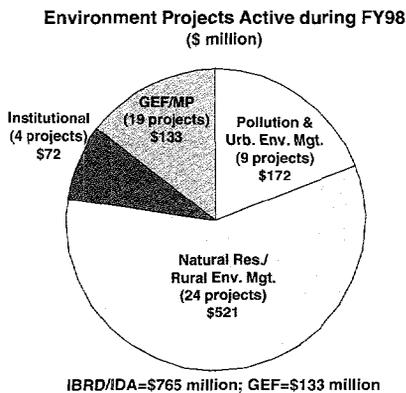
- In Uganda, environmental policy-making remains largely a function of the central government, but implementation of policies and legislation is devolved to the districts. The

decentralization process is being supported under the Bank-financed **Environment Management Project**, launched in FY96.

- In Accra, the capital of Ghana, the Bank-facilitated regional MELISSA initiative (Managing Environment Locally in Sub-Saharan Africa), co-financed by the European Union, Sweden, and Norway, carried out its first pilot operation in FY98 to help create the basis for privatizing the management of solid waste.

Natural Resource Management

In the field of natural resource management (NRM), the Bank and other development partners have increased support to community-based NRM



operations. Including FY98 operations, the Bank is supporting pilot or full-scale community-based NRM projects and programs in Burkina Faso, Uganda, Benin, Guinea, Côte d'Ivoire, Mali, Niger, Senegal, Madagascar, Malawi, Mauritania, and Ghana. These operations typically include improved land management, support for socioeconomic infrastructure, and support for community groups carrying out environmental management components. Increasingly, they also include land tenure clarification and support to decentralization, and are implemented in close collaboration with agriculture extension efforts. Also, in West Africa a systematic, field-based monitoring and evaluation system is being established and tested, with Bank support, to track the progress and impact of the complex and diverse investment programs.

The Cape Peninsula Biodiversity Conservation Project

The **Cape Peninsula Biodiversity Conservation Project** is built on a local partnership between World Wildlife Fund (WWF)-South Africa and the National Parks Board. The project leverages \$2.3 million in GEF resources with domestic financing. The resources will be used in part to prepare and launch a national park on Cape Peninsula with the exceptional Table Mountain chain as its backbone. The project will also support an in-depth survey of the most pressing issues of the Cape Floral Kingdom, a unique flora biodiversity area in South Africa. This project has catalyzed a closer relationship between the Bank and the new South Africa, which now includes Bank assistance to: (i) develop environmental indicators; (ii) prepare an environmental assessment of the Maputo Corridor and support the Lubombo Spatial Development Initiative, involving areas of Mozambique and Swaziland; (iii) support/develop capacity for local management of ecotourism in the northern province, through MELISSA; (iv) prepare a Provincial Environmental Action Plan for the Cape provinces; and (v) assist SADC in developing nature-based tourism and harmonizing EA requirements and procedures.

GEF-Financed Projects

The Bank continues to play a major role in supporting the conservation of biological diversity in Sub-Saharan Africa. In FY98, 25 ongoing projects in 21 countries contained components for biodiversity conservation, 14 of them financed by IDA or IBRD, 7 by the Global Environment Facility (GEF), and 5 by both sources. Those financed by IBRD/IDA include environmental management projects (supporting implementation of National Environmental Action Plans) and projects promoting the sustainable use and management of biological resources in the forestry, fisheries, and wildlife/tourism sectors. GEF-financed, Bank-executed projects and components target internationally significant biodiversity and natural habitats, usually in or around national parks and reserves. Institutional strengthening and capacity building in agencies responsible for environmental management and biodiversity conservation, and involving local communities in the management of biodiversity, are major elements of all the projects.

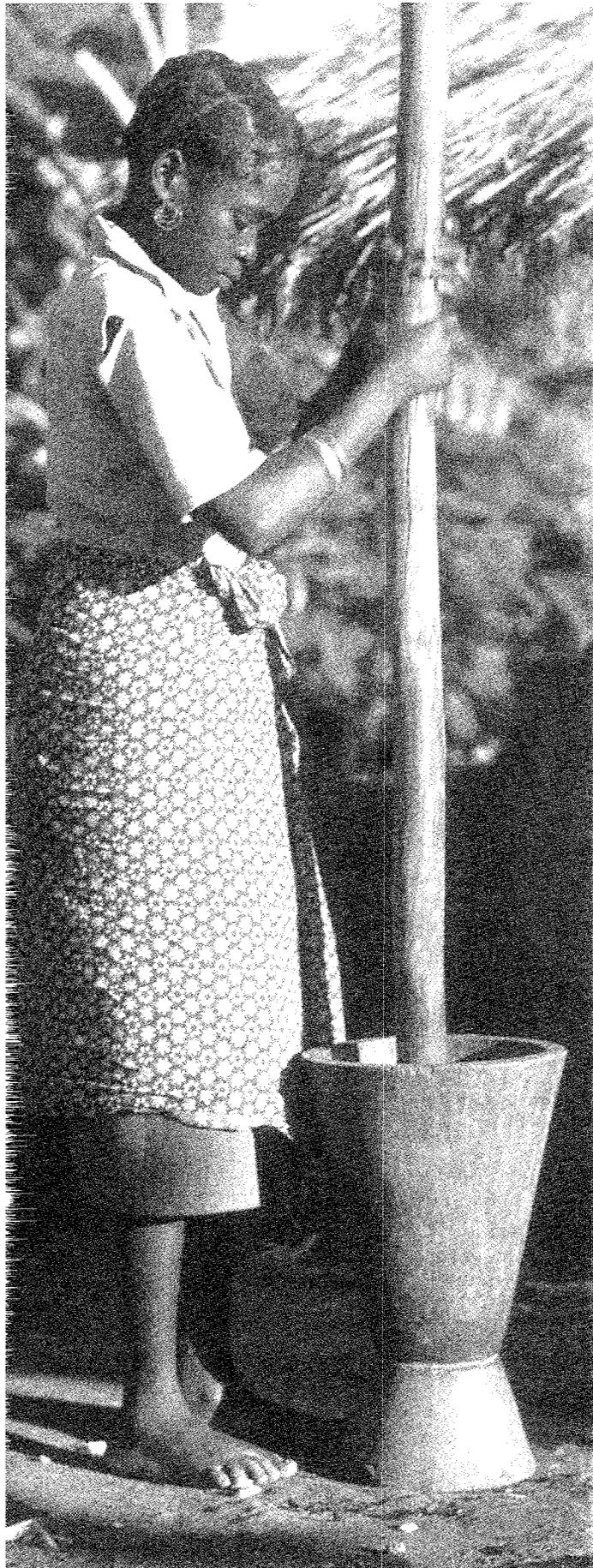
GEF also approved funding in FY98 for the **Cape Peninsula Biodiversity Conservation project**, one of the first Bank-facilitated activities in South Africa (see *Box*, above).

Environmental Assessment and Review

The Bank's environmental assessment and review activities in the Africa region have been particularly intensive, with a sizeable increase in the number and magnitude of category A and B projects in the pipeline and in the portfolio (see *Figure*, page 13).

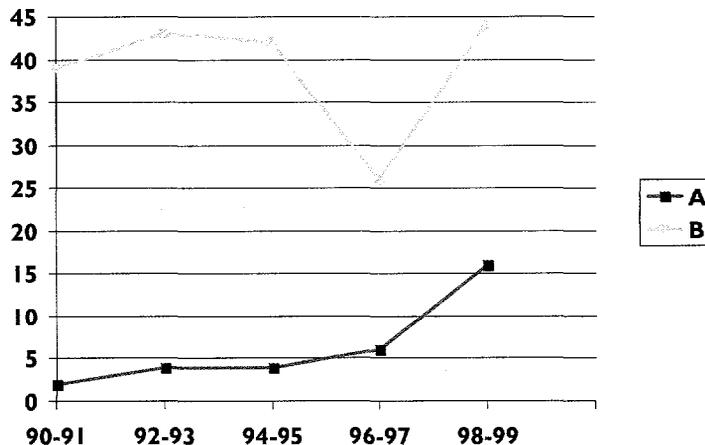
In addition to supporting EA capacity building in the region, the Bank launched three major internal assessment and review initiatives in FY98 and added two senior EA specialists to the permanent EA assessment and review team. The initiatives were:

- ◊ In-depth supervision of 10 ongoing category A projects that have shown uneven implementation of their environmental management plans, thus highlighting the need to build EA capacity in sector ministries, local governments, and parastatals;
- ◊ Development of affinity groups within the Bank among several major operational sectors (health, mining, urban and transport infrastructure, energy, private sector development, tourism);
- ◊ Drafting of good practice and guidance documents (for example, status of EA requirements and procedures in 22 Sub-Saharan countries) for the Bank's EA knowledge management system.



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Number of Category A and B Environmental Assessments in the Africa Region



Training for Environmental Management

The development of proper environmental awareness within the Bank is a continuing process, and several training/sensitization efforts were undertaken in FY98 to provide staff and management with the proper concepts and methods. A two-day course, "Environmental Assessment in Africa," for example, will be delivered by EDI/LLC starting October 1998; attendance will be mandatory for task team leaders of category A and contentious category B projects. The region has also developed and delivered a course on "Environment for Non-Environmentalists," and courses on climate change and the management of biodiversity.

For More Information

The "Best Practice" Africa region website contains information on the environmental program. It can be reached at:
<http://afr.worldbank.org/aft2/envIRON/rrs-env.htm>.

For more on EA good practices (internal Bank access only): http://kms.worldbank.org/scripts/km.fcgi?ESSD:Environment:topic:_EnvironmentalAssessment.

More on MELISSA can be found at: <http://www.melissa.org>.

For more on biodiversity in Africa, and more from the BioNode website, please see: <http://wbln0023/ENV/grapevin.nsf/Main+navigator?OpenNavigator>.

¹ Ekbom, Anders and Jan Boj6, *Mainstreaming Environment in Country Assistance Strategies*, Discussion Paper No. 1, Environment Group, Africa Region, World Bank, November 1997.

² Goodland Robert, Shimwaayi Muntamba, and Jean-Roger Mercier, *Environmental Assessment in Africa: A World Bank Commitment*, World Bank, AFTES-ENVLW, May 1996.

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East Asia and Pacific Region

Giovanna Dore

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 is a rich storehouse of terrestrial and aquatic biodiversity, but the countries of the region face natural resource management (NRM) problems that are difficult to address because of political disinterest, land rights and tenure questions, limited operating funds and suitably trained staff, and the power of vested interests. Some of these problems may only be solved in the long run, when exploitation of natural resources becomes less profitable.

Environmental Challenges — Region in Crisis

Even before the current economic crisis, people throughout the region were beginning to see that a “grow now, clean up later” policy was resulting in unacceptable environmental costs. Congested and polluted cities were affecting health. The destruction of forests increased the risk of erosion, flooding, and elimination of natural habitats. Water pollution was threatening health and fisheries. This realization

prompted efforts throughout the region to improve environmental management. The economic crisis, however, now threatens to cut short those efforts and cause East Asia to fall once again into environmental neglect.

In addition to its economic problems, during FY98 the region also experienced one of its worst environmental crises in recent memory—the Indonesian fires, which put millions of individuals at risk. East Asia was also hit by a serious El Niño-related drought, which affected crop production and led many countries to the brink of food shortage. The interplay of these crises demonstrates the fragility of economic performance even in those countries which, until recently, were considered success stories. From an environmental perspective, these crises may lead to a fundamental reordering of regional priorities in a way that undermines some recent positive, albeit tentative, trends in environmental management.

Environmental Dimensions of the Economic Crisis

The Environment Sector Unit is doing innovative work in analyzing environmental dimensions of the economic crises. This work has focused primarily on the Indonesian case but has relevance for many countries in the region. The study addresses environmental considerations in adjustment programs and looks for opportunities within the adjustment process to prevent environmental risks. An analysis focusing on pollution impacts and opportunities to address these issues in the industrial and energy sectors is planned for FY99.

Some preliminary findings are discussed below.

For several years before the economic crisis, the region experienced growth that outpaced the ability of policy and



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Fishing village, Indonesia.

institutional mechanisms to control its environmental effects. Now, with contracting economic activity, Asian countries are expecting short-term reductions in air pollution from industrial sources and traffic. But in the long run, increased attention will have to be paid to urban air quality management. Without interventions aimed at curbing these emissions, the impacts of increasing pollution could reach high levels, thus further constraining economic growth. The current situation offers an opportunity to introduce environmental considerations into adjustment programs and undertake the reforms needed to establish long-term, environmentally sustainable growth.

There is concern, however, that the region's environment agencies may be disproportionately affected by budget cuts, which would reduce recent progress in building environmental monitoring and enforcement capacity. In Indonesia, for example, the 1998/99 budget for the environmental management agency, BAPEDAL, which oversees water control and air pollution programs and clean cities initiatives, is the lowest since the early 1990s. And in the Philippines, the Memorandum of Economic and Financial Policies, designed with the advice of the IMF in response to the crisis, requires that the national budget be cut by 25 percent and that P14.4 billion worth of new environmental programs and projects be suspended.

Budget cuts could particularly affect environmental safeguards designed to benefit the poor, which could, in turn, increase environmental pressures originating from poverty and economic migration. In fact, poverty is itself a potential source of environmental degradation. The migration of workers from urban to rural areas in response to the deepening economic crisis could

lead to agricultural extensification (often on sensitive areas such as uplands), increased pressure on existing farmland, stress on artisanal fisheries, and increased informal logging activity.

The economic crisis, however, is only a transient event. The critical question for the environment is whether growth will resume in the context of fundamental reforms. The environment problems associated with the crisis cannot be as easily and directly managed as economic problems; solutions involve building regulatory, institutional, technical, and managerial capacity over time.

Forest Fires — Symptom of Deeper Problems

Concurrently with the crisis, uncontrolled fires razed more than 300,000 hectares of forest in Indonesia. This disaster was linked to the widespread practice of using fire to clear previously logged forests and other degraded land in order to plant oil palm trees, rubber and pulp wood plantations, and rice in peat areas. To a lesser extent, land is also cleared by fire for slash and burn agriculture. Due to drought conditions, poor management, and sometimes deliberate acts of defiance, the fires spread to secondary and primary forest areas, grasslands, and peat bogs. The resulting thick smoke covered large parts of East Asia and combined with urban air pollution to cause immense health, social, and economic damage.

In a recent joint report, the World Wildlife Fund (WWF) and the Economy and Environment Program for Southeast Asia (EEPSEA) estimated that the haze cost the region \$1.4 billion, mostly in short-term health costs. An estimated 70 million people were exposed to the haze, which exacerbated respiratory illnesses and caused sore eyes and skin rashes. The fires also took a toll on the region's

heavily threatened terrestrial biodiversity, especially the orangutan and other wildlife in lowland forest areas.

The fires were symptomatic of fundamental deficiencies in land and forest management policies. Like the economic crisis, the fires exposed numerous structural problems and brought into question the strong incentives that exist for clearing land. They forced political leaders to acknowledge the negative impacts of current forest management practices and the urgent need for reforms that address forest conversion for plantation, clearing methods, and enforcement of existing restrictions. Although land-clearing fires were outlawed in Indonesia in 1995, agricultural and forestry authorities have not had the capacity to effectively police fire setting.

El Niño and Regional Drought

The El Niño-related drought has led Indonesia to the brink of serious food shortage. The drought represents the first consecutive two-year decline in rice production in 30 years, leaving projected 1998 production at only 32.2 million tons of milled rice. That will mean a gap of 5.1 million tons relative to previous consumption patterns, with rice stocks dropping to very low levels. Production losses in 1997 were about 3.5 percent, with an additional 2.6 percent expected in 1998.

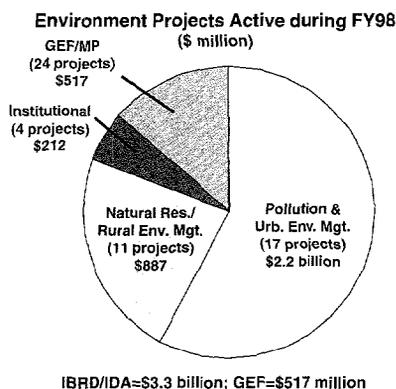
The Environment Portfolio — A Growing Commitment

Throughout the crisis, the World Bank has continued to invest in environmental projects and environmental components of projects throughout East Asia. During FY98 the Bank launched 12 new operations, many of which directly address environment and natural resource management issues and 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. In addition, the number of projects that include strong environmental components is increasing. The **China Energy Conservation Project**, for example, is designed to achieve large and sustainable increases in energy efficiency and associated reductions of carbon dioxide emissions and other pollutants through new project financing concepts and market-oriented solutions. And the **Sumatra Regional Roads Project** has an environmental component for environmental impact assessment and monitoring that accounts for \$23.5 million out of a total loan of \$369.3 million.

The Environment Portfolio for FY98

The **China Ozone Depletion Substances (ODS) IV Project** uses a sectorwide, policy-based phaseout approach supported by the Multilateral Fund for the Implementation of the Montreal Protocol. The project reduces ODS consumption and production through a series of annual programs in specific sectors. The annual program for the halon sector, the first to be developed, includes such innovations as a tradeable production quota and bidding system, and a disbursement mechanism based on performance indicators. The **Guangxi Urban Project** and the **Huai River Pollution Project** are designed to provide substantial support to capacity building for wastewater treatment and river basin management. And the



Vietnam Forest Protection and Rural Development Project aims to achieve effective protection of Cat Tien National Park; protection and management of Chu Mom Ray Nature Reserve; and strengthened government capacity to design, implement, and monitor integrated conservation and development projects.

Some of the projects emphasize local participation. The **China Forest Development in Poor Areas Project** is developing forest resources in central and western China on a participatory basis to support poverty reduction, forest development, and improved environmental management. The **Indonesia Coral Reef Management Project** aims to establish viable coral reef management systems in priority sites throughout Indonesia through pilot community-based management activities. And 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 aims to establish an Integrated Conservation and Development (ICAD) system for priority protected areas (see *Box*).

The regional lending program also emphasizes new investments to support sustainable NRM. The **Philippines Community-Based Resource Management Project** (CBRM) reduces rural poverty and environmental degradation through support for locally generated and implemented NRM projects that aim to enhance the capacity of local governments.

The **Papua New Guinea Forestry and Conservation Project**, currently under preparation, will strengthen capacity to plan and monitor forest operations, promote the sustainability of forest harvests, and promote small-scale sustainable-use enterprises in biodiversity-rich areas in one of the world's last extensive tracts of tropical rainforest. The project will be partially funded by a GEF grant, which will: (a) support development of an accessible mecha-

Sustainable Community-Based Forest Management Initiatives

Several Bank projects are helping governments develop new resource management systems, based on community-led initiatives, so they can achieve sustainable economic development while conserving forestry resources.

The Lao PDR Forest Management and Conservation Project is the first of a series of forestry operations that IDA plans to support over the next 10–15 years. The first phase focuses on completing forestry sector reforms, developing the Department of Forestry's operational capacity, implementing programs in sustainable forest management, and establishing protected areas for biodiversity conservation.

In the second phase, villages will carry out local land use planning under the new forestry conservation legislation. The project will cover about 500,000 hectares of largely intact forest area, to be delineated into village, protection, conservation, and production forest zones and placed under sustainable forest management and protection.

nism to enable landowners to declare their lands for conservation and sustainable use; and (b) provide financial assistance through a Conservation Trust Fund (see *Trust Fund Box*, page 17) to enable landowners to pursue conservation-based livelihoods as an alternative to large-scale commercial logging.

Sector Work — Meeting Challenges and Exploiting Opportunities

Natural Resource Management Review. The East Asia Environment Sector Unit, together with the Rural Development Unit, has initiated a 10-year retrospective review of NRM experience in the region, including more than 100 rural development projects, as well as sector work and country assistance strategies. Its purpose is to assist in formulating a medium-term strategy to

strengthen natural resource management and promote innovations such as community-led initiatives. The review has examined more than 100 rural development projects, and sector work and country assistance strategies prepared since 1990. The review also evaluates the trend in natural resources management to the year 2000.

The review found that Bank lending for direct interventions in NRM has totaled more than \$1.7 billion (15 percent of all lending for the region) since 1990 (see *Box*, at right). The Bank has financed an additional \$2.7 billion (23 percent of total lending for the region) for projects with significant NRM components during that time, and this direct lending has leveraged almost twice that amount in total project investment. The Bank's program in NRM has been flexible and, as noted above, has promoted NRM

The Conservation Trust Fund

As part of the Papua New Guinea Forestry and Conservation Project, a Conservation Trust Fund will be established to provide a source of funds for landowners committed to pursuing conservation-oriented resource use options in forest areas of high biodiversity value. The Fund's three-year pilot phase will be supported with \$5 million from GEF. Contingent on its effectiveness and on adequate cofinancing from other donors, an endowment fund will be established during the second phase. The goal is to capitalize the fund at \$30 million, with \$10 million from GEF, to reliably generate a minimum of \$1.5–2.0 million annually. The fund has been designed with considerable stakeholder participation and with the assistance of The Nature Conservancy.

Natural Resources Management

Of the eight NRM projects in the regional portfolio, four are in Indonesia, reflecting the significance of the country's natural resource base and the threats it is facing. There are two NRM projects in China, and one in each Laos and the Philippines. Four of these projects directly address watershed management and erosion control, although most Bank-supported water projects in East Asia include some watershed management.

The largest NRM project is China's **Loess Plateau Watershed Rehabilitation Project**. Its total cost of about \$260 million covers only five years of a massive soil erosion control program that the Government of China has been working on for 20 years, with no end in sight. The project will have a beneficial environmental impact in nine watersheds in Gansu, Inner Mongolia, Shaanxi, and Shanxi provinces. These benefits include reduction of downstream siltation through erosion control, stabilization of upper land catchments through afforestation and land reclamation schemes, and promotion of more sustainable land management practices. The project also aims to increase agricultural productivity by investing in long-term perennial tree crops and orchards.

innovations relating especially to community-led initiatives.

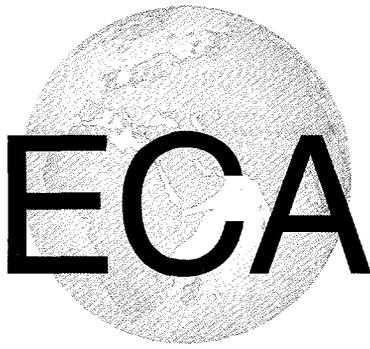
the upcoming country assistance strategy papers.

The Bank also has been instrumental in helping prepare environmental sector notes for Vietnam and the Philippines, which will provide a solid foundation for environmental recommendations in

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Urban pollution, Philippines.



Europe and Central Asia Region

Paavo Eliste and Sari Söderström

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

The transition to a market economy in Europe and Central Asia has caused a decline in economic activities, with a consequent reduction of pollution in almost all sectors. Despite these improvements, however, the environmental challenges facing the region remain serious, and will become more so as widespread privatization and new investments revive economic growth. In some urban centers, increasing air pollution from domestic and mobile sources is already outweighing the decline of emissions from industrial sources and heating. In addition, deteriorating water infrastructure is causing serious supply problems in many areas, and the risk of bacteriological contamination of drinking water is high in both urban and rural areas. The list of environmental hot spots also remains long.

The Bank, in partnership with multilateral and bilateral donors, is helping countries to identify and manage urgent environmental problems through the development of regional, national, and local environmental action plans. The ECA portfolio gives special emphasis to transboundary issues, especially pollution of international waterways, and to significant technical assistance and capacity building activities. This includes support to help European Union (EU) accession countries achieve compliance with EU directives. The Bank is also assisting the countries with mainstreaming environmental objectives into their economic and sector policies and their overall development and investment strategies.

Building Partnerships

Since beginning its operations in the region in the late 1980s, the Bank has been actively building partnerships and supporting coordination among multilateral and bilateral donors through mechanisms such as the Project Prepa-

ration Committee (PPC), which mobilizes resources for environmental projects. The Bank is also playing a role in consensus building through the Environment for Europe Process, and recently (June 1998) participated in the initiative's fourth Pan-European Ministerial Conference on Environment for Europe, held in Aarhus, Denmark. One of the most significant outcomes of the conference was a regional agreement to phase out lead in gasoline by the year 2005.

The Bank is also acting as an umbrella agency for a great number of donor activities to support and expand environmental activities in the region. Maximum leveraging of Bank resources through better coordination with donors will continue to be of great importance, since government funds for environmental improvements, both domestic and borrowed, are likely to be constrained in the ECA countries in the foreseeable future.

Beyond National Boundaries

Addressing the long-term management of regional water resources has been a priority in ECA's environmental work. The Bank is actively involved in a series of interrelated programs in the Aral, Caspian, Baltic, Black, and Mediterranean seas and the Danube river basin. These programs, based on strategic action programs prepared in cooperation with bilateral donors, NGOs, and the governments, address pollution of international waters, management of coastal ecosystems and marine resources, and sustainable development of local communities. Building partnerships to protect these internationally important water bodies is a major challenge, both to countries in the region and to the international community.

Environment in the Lending Portfolio

For almost a decade the Bank has assisted the ECA countries through



Coastline, Estonia.

S. LINTNER

Lake Ohrid, formed 2 to 3 million years ago, is one of the world's oldest lakes. Two-thirds of its 358 square km surface area belongs to the FYR of Macedonia, with the remainder in Albanian territory. Fishing villages and three major cities—Ohrid and Struga in the FYR of Macedonia and Pogradec in Albania—populate the lake's shores. The lake is one of the most popular summer tourist destinations for both countries.

Lake Ohrid is also one of the largest biological reserves in Europe, possessing unique flora and fauna that are extinct elsewhere. The long-term ecological stability of Lake Ohrid is in danger unless action is taken to improve environmental management of the catchment area and the shoreline and to prevent the accumulation of pollutants in the lake. These actions are critical since inflows and outflows are so small that the lake's water is exchanged only every 60 years. Erosion, agricultural runoff, and high concentrations of phosphorus are the primary sources of pollution in the lake.

The Bank is managing a \$4.1 million GEF grant for the Lake Ohrid Conservation Project. The project will conserve and protect the natural resources and biodiversity of Lake Ohrid by developing and supporting cooperation between Albania and FRY Macedonia for joint environmental management of the lake's watershed. By investing now in preventive measures to protect the lake, both countries will save much that would be required for future cleanup and corrective measures.

S. LINTNER

provision of policy advice and investment lending. ECA's current environmental portfolio consists of 28 lending operations for 19 countries, and 2 regional projects that address international waters issues. Bank support for these projects is about \$1.4 billion out of a total cost of about \$3.4 billion. These projects address a variety of issues: control of point source urban air and water pollution, rehabilitation of district heating, management of nonpoint pollution from agriculture, management of important ecosystems, conservation of biodiversity, and promotion of renewable energy sources for domestic use.

In FY98, five new projects were added to ECA's environment portfolio:

- ♦ **The Forestry Project in Bosnia and Herzegovina** will help to revive sustainable forest management planning. The project will also support recovery of the wood harvesting and processing sector, and restore the system of protected areas;
- ♦ **The Uzbekistan Water Supply, Sanitation, and Health Project** will help to improve the health of the rural population by investing in water and sanitation infrastructure;
- ♦ **The Environmental Remediation Pilot Project in Bulgaria** will reduce environmental hazards caused by a copper smelter. The project will promote private investments in the smelter and improve environmental performance of the plant;
- ♦ **The Municipal Solid Waste Management Project Loan in Latvia**, which includes a GEF grant, will assist in developing a self-sustaining municipal solid waste management system through collection and sale of recovered methane gas; and
- ♦ **The Urgent Environmental Investment Project in Azerbaijan** will assist

in restoring the country's sturgeon hatchery capacity, remediate mercury pollution, demonstrate cleanup measures in the oil industry, and strengthen environmental management institutions.

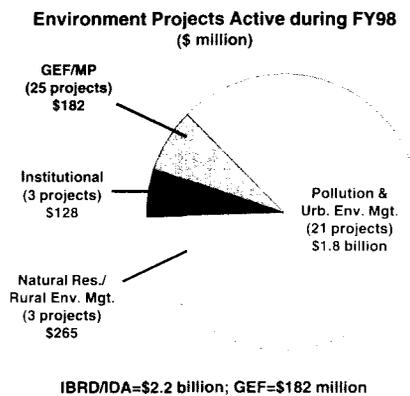
In addition, the Bank manages 22 projects in the ECA region for the Global Environment Facility (GEF), with a value of \$179 million. In FY98, GEF committed nearly \$25 million to two new projects addressing environmental management of two international water bodies—Aral Sea and Lake Ohrid (see *Box*). In FY98 a new ozone-depleting substance (ODS) phase-out project in Ukraine was added to the portfolio of ODS projects in Belarus, Bulgaria, the Czech Republic, Hungary, Poland, Russia, and Slovenia.

Institutional Capacity Building

Building institutional capacity for environmental management in the ECA countries has been the priority in the Bank's lending and technical assistance activities. Most of the lending operations have institutional development and capacity building components and a number of regional programs provide technical assistance and analytical support for environmental activities. Currently there are eight active Institu-

tional Development Fund (IDF)-funded activities in the ECA portfolio, with a total commitment of about \$4 million. The IDF grants are funding capacity building of environmental management institutions or enabling the development of action plans for environmentally critical areas such as Lake Sevan in Armenia and Donetsk in Ukraine. In Latvia and Lithuania, IDF grants are funding priority activities identified in the country environmental strategies, such as improvements to ambient air quality monitoring systems, review of environmental standards, technical assistance for policy implementation, training workshops, and strengthening of local expertise.

As a partner in the Task Force for Implementation of the Environmental Action Program (EAP) for Central and Eastern Europe, the Bank is helping a number of the Former Soviet Union (FSU) countries prepare National Environmental Action Plans (NEAPs). In Azerbaijan, the Kyrgyz Republic, Moldova, and Ukraine, investment projects have been initiated based on priorities identified in NEAPs. The other FSU countries have just completed or are finalizing their NEAPs (see *Box*, on page 20).



The impact of the NEAP process in the FSU countries has been greatly magnified by adoption of a participatory approach in preparation of the Bank-assisted NEAPs. These NEAPs have been prepared with active participation of all relevant government agencies and stakeholders at all stages of the project. This country-owned process, coordinated by local teams, attempts to

identify priority actions, and by organizing workshops and sponsoring training sessions, to fill gaps in local expertise. By the end of the process, the country has not only produced an environmental action plan but has also developed greater expertise in environmental management and a stronger consensus for addressing environmental issues. Throughout the region, NEAPs have been instrumental in increasing awareness of environmental issues among sectoral ministries, external donors, NGOs, and the general population.

Countries such as Azerbaijan, which have just recently completed their action plans, have moved quickly to implement the projects prioritized therein (see *Box*).

European Union Accession and the Environment

The prospect of EU accession is driving environmental policies in countries that have signed association agreements with

the EU which will lead to their ultimate membership. However, enormous investments and major institutional restructuring will be needed in these countries to harmonize their environmental policies and laws with EU directives. To assist in this process, the Bank has established an EU Accession and Environment Regional Work Program. Its focus is to help the member countries develop strategies to comply with EU environmental directives in ways that are cost efficient and that maximize the overlap between the directives and the countries' short and medium-term priorities. The Bank is also promoting direct exchange of experience and technical assistance among ECA and EU countries to disseminate best practices in environmental policy, planning, and management.

The Bank's regional work program is focusing on three countries. In Poland, the Bank has launched a least-cost study of air pollution, a least-cost pilot study for the water sector, and a study on pollution abatement measures (see *Box*, page 21). In the Czech Republic and Hungary, the Bank is financing countrywide least-cost planning studies for the water sector. In all of these countries, the Bank has mobilized a team of experts to help develop strategies that are both environmentally and fiscally feasible, given the institutional capacity and budgetary constraints.

Mainstreaming Environment into Development and Sector Strategies

Bank-supported economic reforms in the region that have promoted efficient resource allocation have also generated significant environmental benefits. For example, removing subsidies and liberalizing prices may yield a positive environmental effect if supported with appropriate institutional restructuring. Therefore, facilitating the transition to a free market economy can often be a cost-efficient approach to achieving environmental goals in ECA countries. Bank-supported policy changes for reducing energy subsidies has had positive impact in many countries in

Participatory NEAP Process in Azerbaijan

In Azerbaijan the NEAP process was carried out by a joint team of Azerbaijani professionals, international consultants, and World Bank staff, supervised by a high-level Governmental Steering Committee. During the process a multidisciplinary team of local experts prepared environmental and natural resource sector studies and analyzed environmental issues within their physical, sectoral, and institutional contexts with assistance from international consultants. Experts from the Committee of Ecology, other governmental and nongovernmental organizations, the Academy of Sciences; and representatives of municipalities, industries, ministries, media, universities, and regional authorities were closely involved throughout the development of the NEAP and, in particular, during the identification and discussion of national environmental priorities and criteria for ranking those priorities. Bank staff assisted the government with setting environmental priorities, developing an elaborated action plan and costing the technical assistance and investment activities needed for its implementation. By promoting such a participatory approach to prepare the NEAP, a strong sense of ownership was created within the country. Also, the process increased the importance of environmental bodies within the Government, as well as in the country as a whole; strengthened institutional capacity of organizations responsible for environmental management; and increased environmental awareness in the Republic.

To make sure that the implementation of the most urgent actions would not be delayed until the finalization of the NEAP, the **Urgent Environmental Investment Project** was initiated in 1997 by the working teams, financed by IDA and bilateral donors. The project represents a first step toward the NEAP implementation in Azerbaijan. The project addresses the most pressing environmental problems of the country, identified in the NEAP and agreed with the government, and consists of the following components: (i) Sumgayit City mercury cleanup; (ii) sturgeon hatchery development; (iii) oil pollution mitigation; and (iv) institutional strengthening.

The EU Accession Work Program Activities in Poland

EU environmental legislation contains technology-based standards for plants of different sizes and ages. It also contains specific national emissions reduction targets. Depending on the specific targets for Poland and the length of the transition period, the total cost of environmental investments for Poland to comply with EU requirements has been estimated at \$3.5 billion. However, a long-range air pollution study commissioned by the Bank found that Poland could achieve the sulfur dioxide reduction targets for 25 percent lower cost if lower-performance technologies, which later could be upgraded to higher-performance technologies, were installed.

Complying with EU urban wastewater directives will also be a challenge for all countries in Central and Eastern Europe. The directive mandates that establishments with a population exceeding 2,000 inhabitants must install at least secondary wastewater treatment technologies. The Bank's least-cost pilot study for the Odra River estimated that constructing treatment plants in all establishments along a specific stretch of the river would cost \$22–35 billion, depending on the interpretation of the requirements. On the other hand, the pilot study demonstrated that the water quality in the river could be cleaned to equivalent of full compliance through strategic placement of treatment plants, reducing the total cost of environmental investments by more than 40 percent. The interim plants might not comply with the EU directive, but could be upgraded at a later stage. Delaying construction of the most sophisticated plants would have an additional advantage of delaying operating costs, consisting of some 40 percent of annualized investment costs.



Urban air pollution, Poland.

S. LINTNER

promoting energy conservation, and facilitating use of cleaner fuels, thus reducing air pollution.

The Bank also has been active in mainstreaming environmental objectives into its structural adjustment and sectoral lending activities. Of 69 investment operations approved in



Toxic waste, Hungary.

FY98, 25 have environmental improvement as one of their direct objectives. Of the 14 newly approved structural adjustment loans, 6 contain energy price liberalization conditions. In addition, Bank-approved sector loans to Albania, Armenia, Bosnia and Herzegovina, Croatia, Georgia, and Turkey also have components that target environmental issues and promote integration of environmental objectives into sector policies. These projects address rehabilitation of power generation facilities, upgrading of urban transport fleets, and improvements in irrigation and drainage infrastructure.

Challenges Ahead

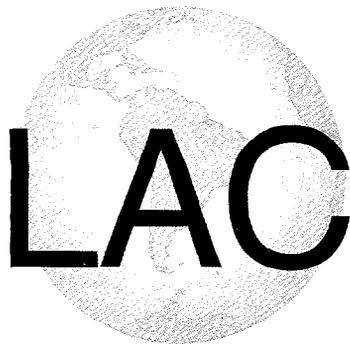
Financial resources available for environmental investments in ECA countries are still limited, but as countries experience economic growth, more domestic resources will eventually become available to address environmental needs. In the meantime, the Bank plays an important role in sustaining environmental activities in the region by supporting national governments in their efforts to design efficient

financing strategies for environmental investments, by mobilizing resources, and by facilitating a range of environmental initiatives.

Project preparation and implementation capacity are still relatively weak in the region. Strengthening of staff skills and institutional structures so they can implement the NEAPs and conduct effective environmental compliance monitoring and enforcement remains a significant long-term challenge. Enhancing environmental awareness through education campaigns and by making environmental information more accessible are low-cost, high-return investments that increase support for environmental policies and limit polluters' ability to obtain exemptions from regulations.

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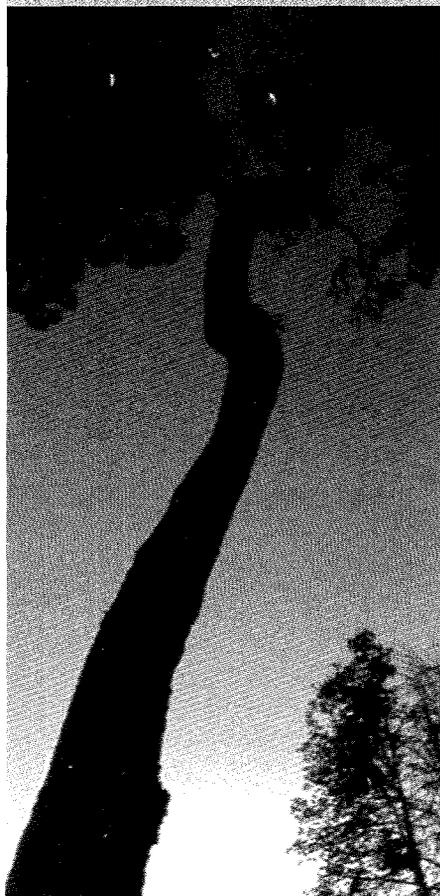
Background photo by S. Lintner.



Latin America and Caribbean Region

John Redwood III

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



J. MOREIRAS

With a population exceeding 400 million, most of it urban, and a land area of 18 million square kilometers covering diverse ecosystems, the Latin America and Caribbean region faces major environmental and social development challenges. These include: setting priorities for sustainable development, mainstreaming the environment into national and sector decisionmaking, strengthening management capacity, introducing market-based instruments, and promoting public-private partnerships to address urban-industrial pollution, land and forest degradation, greenhouse gas emissions, and biodiversity loss. With high levels of rural and urban poverty, growing crime and violence, and a large indigenous population, LAC's efforts to achieve socially sustainable development are equally important.

The Bank is helping meet these challenges through participatory strategic planning, decentralized environmental management, pollution prevention, biodiversity conservation, coastal zone management, indigenous peoples development, and support for sustainable development in ecologically rich subregions such as the Amazon Basin and the Mesoamerican Corridor.

Mainstreaming the Environment: Support for Strategic Planning

In FY98 the Bank supported several important priority setting exercises. One involved identification of key pollution and natural resource management problems in Bolivia, including the impact of agricultural and livestock expansion on land, forests, and biodiversity. Another was a participatory planning process through which a diverse group of stakeholders, including farmers, ranchers, rubber tappers, indigenous communities, and NGOs worked with government officials to

design a sustainable development strategy for the state of Rondonia in the Brazilian Amazon. Local environmental planning initiatives continued in the four largest cities in Colombia under the **Urban Environmental Technical Assistance Project**, approved in FY96.

Work has started on an environmental strategy for the Caribbean, which will focus on sustainable tourism, water resource and coastal zone management, and natural disaster preparedness. And an environmental issues paper for Peru will soon get underway. At the sectoral level, a national energy-environment review has begun in Mexico and similar exercises are planned for other countries. Environmental considerations are now being integrated into investments in the Brazilian water sector through two operations approved in FY98, the **Bahia Water Resources Management Project** and the **Federal Water Resources Management Project**.

Strengthening Decentralized Environmental Management

Ten LAC countries have benefited from Bank projects aimed at developing environmental capacity. Two (in Bolivia and Mexico) were concluded and two others (in Brazil and Chile) entered their final stages in FY98. New capacity building operations were approved in FY98 in Venezuela and the Dominican Republic, and second generation projects are under advanced preparation in Brazil and Mexico. All four encourage decentralization and the use of market-based instruments to complement more traditional regulatory approaches:

- ♦ The Venezuela **Environmental Management and Cartography Project** will strengthen integrated environmental and economic planning, monitoring and evaluation, and decentralized management through

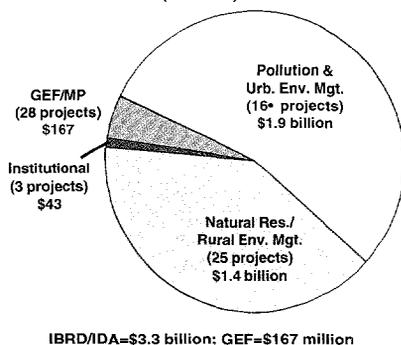
PROTECTING PATAGONIA'S COASTAL ECOSYSTEMS

The **Argentina Pollution Management Project** will be complemented by a **GEF Coastal Contamination Project**, currently under preparation, to conserve biodiversity along the Patagonia coastline and protect the fragile Patagonia Shelf, a large marine ecosystem threatened by coastal loading facilities, oil spills, and ship discharges of oil ballast and bilge waters. This chronic pollution is harming large amounts of marine life. More than 800 oil-covered seabirds were counted in a coastal census in 1995, and there has been one reported occurrence of about 20,000 penguins perishing from oil contamination. The project will strengthen institutions and implement priority investments to safeguard coastal and marine biodiversity from the effects of oil spills and commercial ship traffic, as well as from land-based urban sewage, solid waste, and industrial effluents.

improved policies, economic incentives, and information systems. It will also provide licensing, environmental assessment, and certification services to the private sector, and modernize the national cartography system.

- ◆ The **Environmental Policy Reform Project** in the Dominican Republic—financed by the Bank's first Learning and Innovation Loan (LIL) for the environment—will assess environmental management problems and identify priority reforms.
- ◆ The **Second National Environment Project** in Brazil and the **Environmental Management and Decentralization Project** in Mexico will likewise set environmental priorities and strengthen capacity at the subnational level.

Environment Projects Active during FY98
(\$ million)



J. MOREIRAS

Sea turtle on Galapagos Islands off the coast of Ecuador.

Public-Private Partnerships for Land and Pollution Management

Two FY98 lending operations are promoting public-private partnerships for environmental management. In the economically important state of Sao Paulo, the **Third Land Management Project** will replicate the success in southern Brazil with participatory soil conservation and water resource management. The operation involves collaboration among farmers, public and private sector extension agents, and municipal and state governments. And

in Argentina, the **Pollution Management Project** will strengthen the capacity of the Natural Resource and Sustainable Development Secretariat to introduce innovative instruments for pollution prevention. It will use public-private partnerships to promote cleaner production technologies and contains pilot components to address air and noise pollution in Greater Buenos Aires and

coastal pollution in Patagonia (see *Box*, above).

In addition, the **Guadalajara Environmental Management Pilot**, carried out in FY98, has helped small enterprises, working with mentoring larger firms, training institutes, and government agencies, to introduce improved management systems that generate significant economic and environmental benefits. Public-private partnerships will also be a key element in the **Clean Air Initiative for Latin American Cities**,



J. MOREIRAS

which will feature stakeholder workshops to develop action plans for transport-related air pollution in several large urban areas.

Other Regional Priorities

Biodiversity Conservation. Two major multidonor initiatives, the **Pilot Program to Conserve the Brazilian Rain Forest** and the **Mesoamerican Biological Corridor** (see *Box*, below) are among the vehicles through which the Bank is helping protect the region's rich biodiversity. The Bank is also sponsoring studies on fisheries management and aquatic biodiversity for Argentina, Central America, and the Amazon River system. And in FY98 the GEF supported conservation programs in Argentina, Costa Rica, Honduras, and Panama, as well as providing LAC's first medium-sized grant, for the **Promotion of Biodiversity Conservation within Coffee Landscapes** in El Salvador.

MAJOR REGIONAL BIODIVERSITY CONSERVATION PROGRAMS

The **Pilot Program to Conserve the Brazilian Rain Forest**, a joint undertaking of the Brazilian government, civil society, and the international community, seeks to conserve the Amazon and Atlantic coastal forests. Financed by the G-7 countries, the EU, and the Netherlands and coordinated by the World Bank, the program supports: (i) experimentation and demonstration projects; (ii) conservation of protected areas; (iii) environmental institution building; (iv) scientific research on tropical forests and their sustainable management; and (v) disseminating lessons of experience. Key accomplishments include:

- **Civil society organizations.** Strong program support has helped to create active NGO networks in the Amazon and Atlantic forest regions.
- **Community-based initiatives.** Demonstration projects have enabled some 100 communities and organizations, including indigenous ones, to test new approaches to natural resource use.
- **Extractive reserves.** Four reserves have been established and consolidated.
- **Environmental policy.** State governments in the Amazon region have begun to strengthen their environmental agencies and are preparing integrated environmental management projects.
- **Science.** Two important scientific centers in the Amazon have been modernized and research grants provided for 23 priority projects.

- **Rainforest corridors.** A new project to link protected areas and their buffer zones, creating wider spaces for species dispersal and genetic flux, is under advanced preparation.
- **Amazon floodplains.** Amazon riverine ecosystems will receive special attention under the recently appraised **Floodplain Management Project**.

The **Mesoamerican Biological Corridor** (MBC) is being promoted and implemented by the countries of Central America. It is based on the existence of a natural corridor linking the biotas of North and South America, and reflects the imperative to balance conservation with the development needs of the local population, much of it indigenous. Over the past three years, the Bank has been the largest sponsor of the MBC, which provides a mechanism for people, projects, and donors to work together toward common goals.

About 450 significant MBC activities are underway in the region, with the Bank supporting some 75 major projects and studies. The core projects receiving Bank assistance include GEF investments in Mexico, Honduras, Nicaragua, Costa Rica, and Panama to protect both terrestrial and marine (coral reef) ecosystems. MBC's real success, however, has been its influence on regular Bank lending operations, including rural development, land administration, road rehabilitation, conservation, decentralization, and institutional strengthening projects. MBC also promotes indigenous rights through legal reform and is influencing the planning processes of sector agencies and local governments.

GEF is also supporting preparation of a new tropical forest protection project in Brazil. The project reflects the Brazilian government's commitment to protect ten percent of its rainforests under the Bank-World Wide Fund for Nature (WWF) "Forest for Life" initiative. Civil society will be fully involved in preparing the project and identifying new areas for protection.

Other Global Environmental Activities. Two GEF projects, the **High Efficiency Lighting Pilot** in Mexico and the **Wider Caribbean Initiative for Ship Waste**, were successfully completed in FY98. And new GEF projects for renewable energy in rural areas in Argentina and energy efficiency in Brazil are currently under advanced preparation.

In addition, the Bank is helping Colombia and Mexico elaborate strategies to reduce greenhouse gas emissions under the Kyoto Protocol, signed in December 1997. The **Second Transport Air Quality Project** in Mexico, now under development, will seek to limit greenhouse gas emissions and reduce local pollutants from vehicular sources. The Bank is also supporting certification of carbon sequestration in protected areas in Costa Rica. Finally, in FY98 the Bank continued to assist seven countries in reducing their use of ozone-depleting substances (ODS), consistent with their Montreal Protocol commitments. A new ODS operation was recently approved for Mexico and projects are under preparation in Colombia and Ecuador.

Natural Disaster Preparedness and Mitigation. In FY98, the Bank responded to El Niño-related flooding with emergency operations in Argentina, Bolivia, Ecuador, and Peru, and reallocated resources from existing projects in Mexico, Central America, and Brazil to address El Niño-related

fires. **An Emergency Fire Prevention and Control Project** in Brazil is also under preparation in response to the greatly increased danger of forest fires in the southern Amazon region due to the drought in the first half of 1998. These activities are part of a broader Bank initiative with national governments and other aid agencies to help LAC countries assess their vulnerability to natural

and implement local development efforts.

Reducing Violence. The Bank is also assisting LAC countries to achieve social sustainability by reducing poverty and violence. Based on an analytical framework that identifies the main types and causes of political, economic, and social violence, the Bank initiated a



M. CASTRO

disasters and develop strategies to mitigate these risks.

Indigenous Peoples. The Bank provides support to indigenous peoples through natural resource management projects in Bolivia, Brazil, Colombia, Mexico, Nicaragua, Panama, and Peru. Other efforts include the Indigenous Lands component of the **Pilot Program to Conserve the Brazilian Rain Forest**, which featured demarcation of 106,000 square kilometers in FY98, benefiting 19 ethnic groups. Also in FY98 the Bank approved a pioneering **Indigenous Peoples Development Project** in Ecuador. This project aims to help poor indigenous and Afro-Ecuadorian communities develop the technical, legal, and institutional capacity to plan

regional Urban Peace Program in FY98. In this connection, studies have been undertaken for Colombia, where violence was identified in the Bank's country assistance strategy as a major constraint to development. Research on violence also began in FY98 for an urban poverty assessment in Brazil. Finally, an LIL was recently appraised to help local citizens reduce poverty and increase peaceful coexistence in the Magdalena Medio region of Colombia, which has suffered from extensive rural violence over the past decade.

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Middle East and North Africa Region

J.B. Collier and Sherif Arif

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



WORLD BANK

Since the publication of *Towards Sustainable Development: An Environmental Strategy for the Middle East and North Africa*¹ in 1995, policymakers in Middle East and North Africa countries have developed a better understanding of the linkages between sustainable economic growth and a clean environment. The region faces three major challenges in its efforts to achieve environmentally sustainable development:

- ♦ Protecting the health of citizens;
- ♦ Preventing further degradation of natural resources; and
- ♦ Integrating environmental concerns into national social and economic development programs in a manner that makes protecting the environment an instrument of growth rather than a restraint on development or trade.

To achieve these goals, the countries will need to address a number of interrelated problems:

Overuse of water resources. The population in this arid region is growing rapidly and the countries continue to over-exploit precious water resources by mining nonrenewable fossil aquifers at alarming rates. Such over-exploitation is understandable since more than 50 million people have no access to clean drinking water and few other affordable options are available. The challenge is to develop affordable, sustainable options for meeting their needs.

Desertification of arable land. Farmers continue to overgraze marginal lands, overcut scarce forest resources, and use increasingly poor quality water for irrigation, causing the continual shrinkage of productive land.

Rapid, unregulated urbanization. As both water and arable land become scarcer,

the region's urban centers are growing at an unprecedented rate, exposing more of the poor to shoddy housing, worsening air pollution, and inadequate sanitation.

Increasing air pollution in major population centers. Uncontrolled use of leaded gasoline and diesel for transportation, and of high-sulfur fuel oil for power, are worsening air pollution and increasing the incidence of pulmonary disease among urban populations.

Threatened coastal and marine resources. Urban expansion and the resulting waste disposal issues, pressure from developing tourism, increased shipping traffic, and poorly regulated fisheries are threatening fragile coastal zones and the sustainable use of marine resources.

Meeting the Challenges

The World Bank is working with each of the MNA countries to mainstream environmentally sound practices into economic planning and development. In FY98, the Bank assisted the Government of Lebanon in preparing its Environmental Code, which was approved by the Council of Ministers.

Also in FY98, Syria completed its National Environmental Action Plan (NEAP), bringing the number of countries in the region with completed NEAPs or environmental strategies to seven (Egypt, Iran, Jordan, Lebanon, Syria, Tunisia, and Yemen). NEAPs are also being prepared in Algeria and Morocco, with completion expected in FY99.

The Investment Portfolio

The Bank is also helping to strengthen the ability of the MNA countries to carry out environmental impact assessments (EIAs). In FY98, under financing from the Strategic Compact, the Bank conducted an environmental

review of projects in the water and wastewater sectors and recommended improvements in their environment components. In addition, an in-depth analysis of the EIA system in Tunisia was the basis for developing an action plan to harmonize that system with the Bank's environmental directives. And the Mediterranean Environmental Technical Assistance Program (METAP, see *Box*, page 29) approved a \$400,000 initiative to work with the 13 METAP countries to strengthen national EIA systems and harmonize their environmental guidelines. Strengthening national EIA systems is of key importance as both private investors and multilateral financial institutions increase their capital investment in the region, requiring high-quality EIAs for all major projects to avoid liability for environmental damage.

Of the 24 investment projects approved for the MNA region in FY98, two are category A projects, requiring extensive EIAs and environmental monitoring plans (EMPs); 14 are category B projects, requiring an environmental analysis and monitoring during implementation; and only 8 are category C projects, which are expected to have little to no environmental impact. In fact, approximately \$700 million of the \$1 billion approved for lending in MNA in FY98 includes environmental components to be monitored during implementation. Countries are working closely with the Bank and other lending organizations to ensure that their sector development projects are indeed good for both their economies and their environments.

Several of the 16 category A and B projects approved in FY98 stand out as examples of the forward thinking that is going into integrating environmental concerns into sector investments and strategies.

The **Algeria Low-Income Housing Project (A)** improves water, sanitation, and solid waste collection in urban slums and nonserviced low-income areas. It also strengthens the capacity of the Ministry of Housing to analyze the environmental and social impacts of low-income housing projects.

The **Egypt East Delta Agricultural Services Project (B)** provides core services (irrigation and drainage, potable water, agricultural extension) to facilitate settlement and increase agricultural production in newly developed lands. It also improves infrastructure for on-farm drinking water and management of soil and irrigation water.

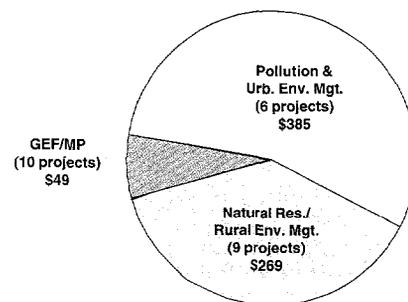
The **Gaza Industrial Estate Project (A)** develops an industrial site with core utility and waste disposal services, as well as standard factory, administration, and distribution buildings. It includes environmental training for the Ministry of Planning.

The **Second Tourism Development Project (B)** develops and expands Jordan's tourism potential, especially at Petra and Wadi Rum, in a sustainable manner. The project addresses ongoing environmental degradation and implements improved land-use management plans to prevent future degradation.

The **Morocco Rural Water and Sanitation Project (B)** improves potable water supply and sanitation, and thereby public health, in rural areas of the country. The project is an outstanding example of participatory design. The target population—the rural poor, and particularly women—was involved in designing the project and will be involved in implementation.

The **Tunisia Transport Sector Investment Project (B)** improves the overall

Environment Projects Active during FY98 (\$ million)



IBRD/IDA=\$654 million; GEF=\$49 million

transportation system in Tunisia by developing a plan to increase the use of cleaner fuels across the sector, thereby reducing air pollution and related illness. The project also creates air monitoring capacities in major urban centers.

Also in FY98, the Bank continued to make significant strides in decentralizing its environmental activities and personnel to Resident Missions. For both Egypt and the West Bank and Gaza, the country directors and the majority of the country teams are now located in the field. The **Gaza Industrial Estate Project**, one of the two category A projects approved in FY98, is being managed directly from the Bank's West Bank and Gaza offices. In addition, several projects are under preparation around the region at the METAP regional facility in Cairo (see below).

Beyond National Boundaries

The MNA countries are engaged in several regional environmental initiatives:

The **Mediterranean Environmental Technical Assistance Program (METAP)**, now in its third phase, has established a regional facility in Cairo (in the offices of the Egyptian Environmental Affairs Agency) as its primary center for project development and

capacity building throughout the Mediterranean region.² The opening of the regional facility is one of the cornerstones of METAP III and marks a significant shift toward decentralized, field-based project management and increased country ownership. The facility prepares investment projects and develops capacity building activities on the national and regional levels. In addition to the activities of the regional facility, there are four METAP activities—MEDPOLICIES, Public-Private Partnership, the EIA Initiative, and MED-BRANCH—that deal directly with mainstreaming environmental issues into sector policies (these activities are described in the *Box* on page 29).

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. It helps countries to formulate and implement policies and strategies to achieve sustainable management of limited water resources and sustainable economic growth. It also helps them to

mobilize financial resources for implementation of environmental action programs.

On June 1-3, 1998, the parties met in Cairo to:

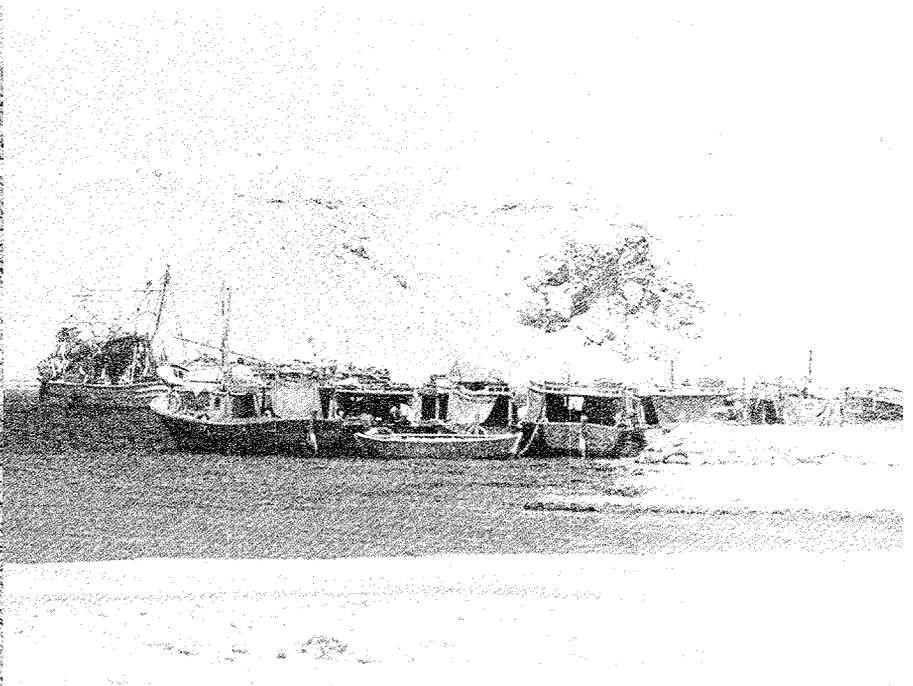
- ♦ Begin development of a *21st century vision* for a balanced, efficient, and equitable water resources management strategy;
- ♦ *Exchange experiences* from ongoing efforts to formulate and implement water resource management strategies; and
- ♦ Discuss the relative merits of *alternative policy options* as well as opportunities for and constraints to policy reform.

The Regional Initiative for Collaboration to Control Natural Resource Degradation (Desertification) of Arid Lands in the Middle East continues to plan field activities and elicit donor support for developing solutions to natural resource degradation. As part of the Middle East peace process, this program enables scientists and planners from Egypt, Israel, Jordan, Tunisia, and the West Bank and Gaza to share experience and expertise in desert land management.

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 Red Sea and Gulf of Aden Environmental Strategic Action Program (SAP) was included in the work program approved by the GEF Council in FY98 and is scheduled for implementation in FY99. This partnership of the littoral states aims to prevent 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.

Caspian Environment Program. Iran and its neighbors around the Caspian (Azerbaijan, Kazakhstan, Russia, and Turkmenistan) have joined with the World Bank, TACIS (the EC's Technical Assistance Programme for the CIS countries), UNDP, and UNEP to counter the negative effects of sea level fluctuation and industrial pollution, and promote the sustainable use of the



R. PATON

A fisherman on the Gulf of Aqaba and fishing boats on the Red Sea.

Mainstreaming Environment through Regional Programs—the METAP Experience

MEDPOLICIES

The Harvard Institute for International Development (HIID) is coordinating the MEDPOLICIES effort, which brings local researchers together with representatives of environmental and sector ministries in each country. Through roundtable discussions and case studies on such issues as trade and the environment, the social and economic impacts of air quality, and environmental liability in privatization, MEDPOLICIES is helping facilitate the integration of practical solutions into planning and policymaking.

The EIA Initiative

To improve the region's business climate and achieve environmentally sustainable economic growth, there is a need to establish clarity and transparency in environmental rules, regulations, and legal liabilities. All of the METAP countries have taken steps to introduce EIA systems, but legislation, institutionalization, and implementation are at varying stages of development.

The EIA Initiative will help selected METAP countries to acquire the technical and policy tools needed for credible and operational EIA systems. The initiative has four specific objectives:

- Build capacity in EIA procedures and management, through training and involvement with EIA-relevant projects;
- Develop the technical capacity of line agencies, private consulting firms, and financial institutions to carry out EIAs;
- Develop the capacity to evaluate and approve EIAs; and
- Advise on guidelines developed by national and environmental institutes.

Public-Private Partnerships (PPP)

Public-Private Partnerships is a pilot activity developed jointly by the Bank and UNDP which is being implemented in Tunisia under the leadership of the METAP regional facility. It emphasizes collaboration among government, business, and community groups to create for-profit environmental enterprises specializing in environmental management. The first PPP project, **Tunis Package Waste Collection and Recycling**, aims to establish a joint effort between the municipal government and a private company to relieve strain on municipal landfills by promoting profitable recycling activities.

Building Regional and National Capacity in Hot Spots (MED-BRANCH)

This is a pilot effort to build capacity to manage the region's environmental hot spots and to initiate policy dialogues on urban environmental management and planning, water legislation, and other key issues. The objective of MED-BRANCH is to create a common vision among different stakeholders in order to generate a sustainable development approach to managing these zones, while promoting public participation through information sharing and mobilizing the commitment of decisionmakers. The six hot spots are:

- Oued El-Harrach, Algeria
- Lake Maryut, Egypt
- Zarqa Basin, Jordan
- Casablanca, Mohamedia, Morocco
- Aleppo/Sheikh Said, Syria
- Lac Sud de Tunis, Tunisia.

Case studies from each hot spot were presented at a course on Integrated Environmental Management and Pollution Abatement in Hot Spots held in Tunis in March 1998.

Caspian's unique bioresources. At a meeting in Iran in May 1998 the countries adopted the framework for the program and a draft GEF program brief, which will be proposed to the GEF Council in November 1998. If accepted, the program would begin in January 1999.

The Challenges and Opportunities Ahead

While the environmental threats facing the region—the overuse of water resources, desertification, urbanization,

air pollution, and coastal zone degradation—will not soon diminish, the ability of the countries to mitigate these 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. And the media

are increasingly reporting on environmental issues, helping to generate public pressure for environmentally responsible activities.

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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South Asia Region

Carter Brandon

Meeting the Challenges

ALTHOUGH South Asia has remained largely untouched by the financial crisis of East and Southeast Asia, environmental degradation in the region continues to worsen—driven by the familiar factors of increasing industrial and urban pollution in urban areas (see *Cities* article, page 38) and by degradation in rural and coastal areas from the unsustainable use of land, forests, and water resources (see *Box*). India, which has been relatively well studied from an environmental point of view, shows rising levels of sickness and death from pollution, as well as economic costs attributable to resource degradation of more than 5 percent of GDP. Pakistan, Bangladesh, and other countries in the region are experiencing similar trends, albeit at lower levels.

In the face of these problems, there have been some notable environmental initiatives. Private sector investments in industrial pollution control and common effluent treatment plants are expanding in India, partly in response to private sector ISO¹ incentives and to the voluntary compliance of some larger industries. Cleaner vehicle fuels, such as unleaded gasoline in major Indian cities and compressed natural gas (CNG) in Dhaka, are being introduced. Joint forestry management involving both communities and government in India and Nepal is slowing forest degradation in some of their hill areas, and private plantations are increasing the tree cover in other degraded areas, such as in West Bengal. Investment in renewable energy in India and Sri Lanka, especially wind and small-scale hydro, has been significant. A water treaty between India and Bangladesh has reduced bilateral

tensions over allocation rights to the waters of the Ganges, and is helping guarantee minimum flows to Bangladesh during the dry season. This will help restore aquifers, provide needed irrigation water, and maintain sufficient flows to the Sundarbans—the world's largest mangrove area—to reduce the saltwater intrusion that has already started to take place.

But the region needs more than isolated environmental initiatives; it needs improved planning and management, which is largely an institutional challenge. But political support for environmental management is sporadic at best, and surfaces mainly in reaction to crises.

The Environmental Portfolio

The Bank's South Asia environmental portfolio is concerned with clarifying the proper role of the public sector in all aspects of the environmental agenda. The Bank is emphasizing: (a) environmental impact assessment, (b) strategic analysis across a broad range of sectoral issues, and (c) environmental investments—in that order. All three of these approaches build on a long-term Bank commitment to help build in-country institutional capacity to address environmental issues.

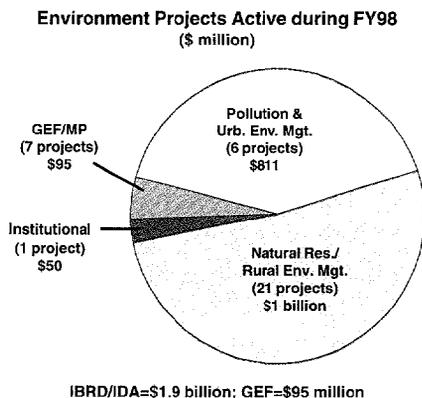
Environmental Impact Assessment (EIA). Strengthened EIA procedures and compliance are fundamental to environmental management. In South Asia, however, neither the procedures used for conducting and reviewing EIAs, nor procedures used to monitor EIA compliance throughout the life of projects, are currently adequate. The Bank is placing high priority on technical assistance and specialized training programs to increase EIA capacity and introduce worldwide best practice into sector, regional, and strategic EIAs.



COREL

Strategic Analysis. One objective of strategic analysis is to help over-stretched and often relatively junior environment ministries focus on the few most important activities with the greatest environmental and economic returns. It typically consists of priority setting, valuation, and cost-effectiveness analysis. Strategic analysis is also used to mainstream environmental concerns into the policies and operations of other sector ministries, such as Energy, Transport, and Agriculture. For example:

- ◆ In New Delhi and Dhaka, the Bank facilitated workshops in which the government and private sectors agreed on a plan to reduce transport-related air pollution. Participants were presented with the estimated marginal costs and benefits of many possible interventions and engaged in an exercise to rank options for achieving pollution control targets.
- ◆ In Andhra Pradesh, a joint government-Bank study is quantifying: (a) the health impacts of water pollution to justify expenditures on water and sanitation infrastructure by local governments; and (b) the loss in agricultural yields due to land degradation.



Key Environmental Problems in South Asia

- Water quality degradation from poor sanitation, industrial effluents, and pesticide runoff;
- Urban degradation from lack of clean water, poor solid waste management, and air pollution;
- Poor management of water resources and unresolved issues such as balancing the needs and potential of hydropower, irrigation, and inland fisheries;
- Dwindling forests, coastal wetlands, and freshwater bodies; and poorly managed protected areas;
- Soil degradation in agricultural and range lands;
- Energy-related damage from the commercial energy sectors and the collection and burning of biomass; and
- The impact of global climate change, particularly in low-lying Bangladesh.

- ◆ In Nepal, a Bank-sponsored study is calculating the incremental costs and benefits of eight distinct sustainable forest management systems.
- ◆ In Bangladesh, the Bank facilitated a framework for implementing the National Environment Action Plan (NEAP), involving a dozen government ministries in the analysis of options for improved environmental management (see ECA article, page 18, for more on NEAPs). The strength of the exercise lay in each ministry applying a simplified cost-benefit analysis to assess the economic, technical, and political viability of each option—leading to a short list of a dozen priority actions from an initial list of nearly a hundred. Separate environmental projects were originally identified, but most were subsequently mainstreamed into other projects (see *Box*, page 32).

Environmental Projects. The region's environmental portfolio consists of 29 projects—17 in India, 6 in Pakistan, 3 in Sri Lanka, and one each in Bangladesh, Bhutan, and Nepal. These projects span the pollution, natural resources, and capacity building aspects of environmental management.

The Bank approved two new forestry projects in India in FY98: **Kerala Forestry** and **Uttar Pradesh Forestry**. These projects add to a portfolio of forestry projects that is the Bank's largest for any country in the world. In addition, GEF is supporting with PDF grants preparation of a Nepal Biodiversity Trust Fund and a Bay of Bengal regional initiative. GEF is also supporting, under the Montreal Protocol, an ozone-depleting substance phaseout project in Pakistan.

ENVIRONMENTAL MAINSTREAMING — THE CASE OF BANGLADESH

In FY98, preparation began on the proposed **Bangladesh Environment Project** (BEP), a project intended to help Bangladesh implement its NEAP. But nearly all the priority environmental issues identified in the original project concept paper were subsequently taken out of the BEP and mainstreamed into other Bank investments. The following six projects now include environmental components that were originally part of the BEP:

- A *vehicle emissions inspection program* under the **Dhaka Urban Transport Project**,
- Investment in *CNG distribution stations* under the **Gas Marketing Development Project**,
- Improved *slum sanitation and drainage* under the **Slum Improvement Project**,
- *Wetlands conservation* under the **Fisheries IV Project**,
- *Water quality monitoring* under the **Arsenic Mitigation Project**,
- *Environmental education* under the **Post-Primary Education Project**.

As a result of this mainstreaming, the BEP was broken up into three environmental activities and the name was formally dropped. These three activities are:

- A proposed **Air Quality Management Project**, to improve air quality in Dhaka;
- A proposed **School and Community Sanitation Project**, to improve sanitation facilities, water quality, and environmental awareness nationwide;
- **Environmental Capacity Building Technical Assistance** (UNDP-funded, Bank implemented), to address core environmental assessment and policy issues.

This combined approach of *mainstreaming* the original set of environmental priorities into several project components, plus *unbundling* the BEP into three stand-alone operations, has resulted in a more decentralized institutional arrangement for introducing improved environmental management in Bangladesh.

Mainstreaming the Environment

Because experience with stand-alone environmental investments in the region has been mixed—due largely to the lack of capacity of environmental ministries—the Bank is moving away from such investments and toward mainstreaming environmental concerns into sectoral projects (for instance, in transport, fisheries, and education; see *Box*). As a consequence, no new stand-alone environment projects were approved in FY98.

This mainstreaming approach, which has proven more promising, involves

developing environmental capacity in sector ministries and—in the case of India and Pakistan—at the state and local levels. The environmental components of sector investments focus on appropriate policies, good management, and pollution abatement incentives rather than on narrow actions to deal with specific environmental problems.

This approach also encourages private sector investment and community involvement in addressing pollution problems, and focuses the role of government more toward regulatory concerns than investment responsibili-

ties. For example, a strong push is being made to increase the share of private investment in urban and regional infrastructure, ranging from roads to water supply and sanitation to telecommunications. Governments cannot continue to finance all of these investment needs, especially in light of low cost recovery. In industrial pollution control, the practice of the public sector financing the construction of effluent treatment plants is beginning to be replaced by private sector solutions, such as a new privately owned common effluent treatment plant in Andhra Pradesh.

Environmental concerns are also being mainstreamed into such projects as the **Uttar Pradesh Diversified Agriculture Project** and the **Coal Environment and Social Rehabilitation Project** in India, as well as into projects addressing industrial pollution, land degradation, urban water supply and sanitation, cleaner power production, and improved water resource management.

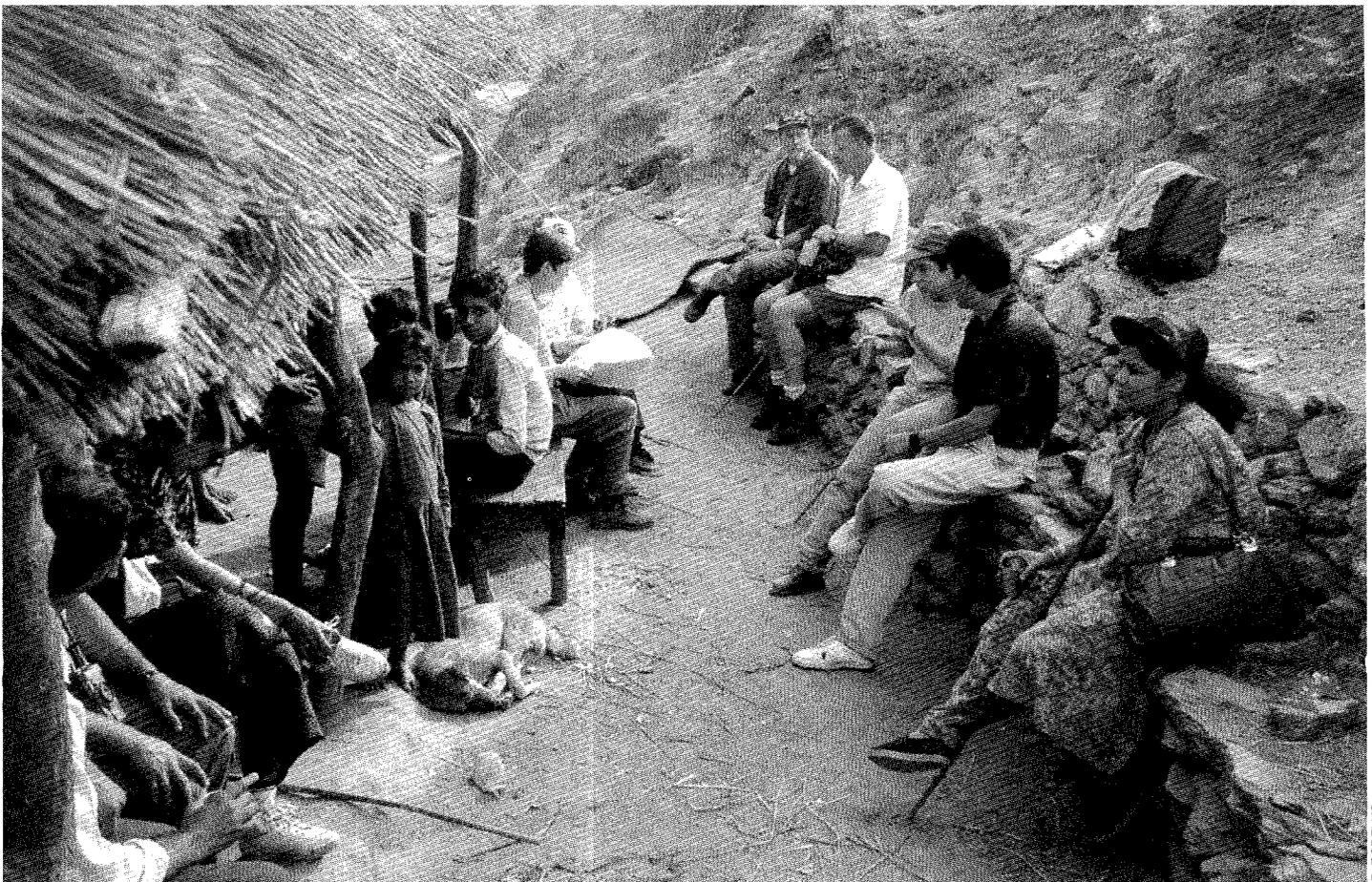
Civil Society

Public awareness of environmental issues is steadily increasing in the region due to NGO activity, the media, activist courts (especially in India), and government education programs. This increased awareness is fundamental to both improving the effectiveness of government policies and enabling greater decentralization to local agencies and communities.

Beyond National Boundaries

The four transboundary efforts in the region are relatively unchanged from FY97.

- ♦ **URBAIR and the Two-Stroke Vehicle Engine Initiative** addresses the rapidly worsening air pollution problem in Asia's largest cities. The *URBAIR Guidebook*, published in spring 1998, lays out a strategy to combat air pollution and its harmful effects.



R. ROBELLUS

Consultation with potentially affected people for Anun Hydro (dam) Project, Nepal.

- ◆ **The Bay of Bengal Environment Program** (GEF funded and jointly implemented with FAO) addresses fisheries research, environmental emergencies, large marine ecosystems, and coastal zone management in and around the bay. Both South Asian (Sri Lanka, India, Maldives, Bangladesh) and East Asian (Thailand, Malaysia, Indonesia, and Myanmar as an observer) countries are involved.
- ◆ **The South Asia Development Initiative** seeks to improve regional cooperation in the poorest part of South Asia (Bangladesh, Bhutan, Nepal, and eastern India) in water resource management, energy development and trade, and transport and commerce. This activity is in the preliminary study phase.
- ◆ **Cultural Heritage in South Asia**, being carried out in Bangladesh, India, and Nepal, promotes the active

involvement and financial support of the public, nonprofit, and private sectors to rehabilitate national heritage sites that are deteriorating from neglect and environmental damage (such as acidic air pollution damaging the marble in the Taj Mahal and the old city of Lahore, and water salinization eroding the structures in Moenjadoro, the ancient city ruins in Pakistan). This activity also remains in the preliminary study phase.

Challenges and Opportunities Ahead

With their growing understanding of the close linkages among economic growth, poverty alleviation, and environmental degradation, the countries of the region are beginning to generate the political will to introduce needed regulatory, financial, and policy reforms, including private sector incentives. To assist in this process, the Bank will continue to: (a) support improved

environmental assessment of all investments, not just Bank-funded projects; (b) instill a greater strategic sense in government and community operations regarding the need for more efficient use of scarce natural resources; and (c) mainstream environmental concerns into sector operations. This three-fold approach is important for meeting the environmental challenges that lie ahead.

¹ International Standards Organization, which promotes quality management (series 9000) and environmental management (series 14000) standards.

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International Finance Corporation

Shawn Miller and Lee Doran

Toward Environmentally and Socially Sustainable Development in the Private Sector



Proposed site of the Lafarge Surma Cement Project, Bangladesh.

The International Finance Corporation (IFC), is the private sector development arm of the World Bank Group. IFC is committed to financing environmentally and socially sound projects in its member countries.

During the past year, IFC has undergone an extensive exercise to more clearly articulate its environmental and social review and information disclosure requirements and provide its sponsors and staff with improved guidance. The Environment Division has also taken initiatives to strengthen its social review capacity and ensure that staff from its Environmental Projects Unit, Environment and Social Review Unit, and Capital Markets Environmental Services Team are integrated more fully into project teams.

In support of the policy review exercise, IFC commissioned two independent studies. The first assessed the effectiveness of IFC's 1993 environmental review procedure and reviewed the compliance of more than 100 IFC projects across a spectrum of industries and regions. The second study was conducted by an independent consulting firm which reviewed IFC's experience with public consultation and disclosure. That study included site visits to eight category A projects. It concluded that IFC generally complies with its public consultation and disclosure requirements, but suggested improved guidance in this area for its sponsors. Both studies are available through the Environment Division, which is part of IFC's Technical and Environment Department.

IFC's Environmental and Social Safeguard Policies

These external reviews, in addition to IFC's own internal deliberations and an extensive public comment process, have

resulted in IFC adopting, for the first time, its own environmental and social safeguard operational policies (OPs), which include:

- ♦ OP 4.01, Environmental Assessment
- ♦ OP 4.04, Natural Habitats
- ♦ OP 4.09, Pest Management
- ♦ OP 4.36, Forestry
- ♦ OP 4.37, Safety of Dams
- ♦ OP 7.50, Projects on International Waterways.

These policies are harmonized with those of the World Bank while reflecting IFC's unique private sector mandate, project cycle, and organizational structure. Three other policies are still under revision by joint IFC/World Bank working groups and are forthcoming. They are:

- ♦ OP 4.11, Safeguarding Cultural Property in IFC-Financed Projects
- ♦ OP 4.12, Involuntary Resettlement
- ♦ OP 4.20, Indigenous Peoples.

In addition, IFC has jointly published with the World Bank the *Pollution Prevention and Abatement Handbook*, which includes revised environmental guidelines for 41 sectors and industries. IFC has also recently published a *Good Practice Manual* on public consultation and disclosure in the private sector (see *Box*, page 36). One project approved in FY98, the **Lafarge Surma Cement Project** in Bangladesh, required the use of a number of IFC's environmental and social safeguard policies and consultation requirements (see *Box*, page 35).

Environmental and Social Review for Sound Investment

During the past fiscal year, IFC also revised the environmental and social review procedure (ESRP) used in project reviews. The updated procedure reflects IFC's commitment to a stron-

BANGLADESH — Lafarge Surma Cement Project

The **Lafarge Surma Cement Project** includes construction and operation of a greenfield cement plant in the northeastern district of Sylhet, Bangladesh with a production capacity of 1.2 million tons per year. A 15 or more kilometer closed overhead conveyor will be used to transport limestone and sandstone from a quarry at Meghalaya, India to the plant site in Bangladesh.

This project was classified category A under IFC's environmental review procedure, and the sponsor prepared environmental impact assessments (EIAs) for the plant in Bangladesh and the quarry in India. The project will meet all World Bank Group effluent guidelines. Dust emissions from the plant are controlled throughout using appropriate pollution control technology and will be below the specified effluent limits.

A resettlement plan addressed all aspects of resettlement activities with particular attention to income restoration and improvement options, including:

- Assistance in purchasing equivalent land on the active local land market
- Head-of-queue (starting with the poorest families) employment opportunities in the plant and with contractors
- Training in small enterprise development and other assistance to the local community.

Public consultation was conducted in Bengali via group and individual meetings, with local and World Bank InfoShop disclosure of the EIA and resettlement plan in accordance with IFC requirements. IFC will provide regular monitoring to ensure full implementation of all mitigative measures.

ger, more systematic, and more effective and unified process of environmental

Environment and Social Review Unit (ESRU)

and social review. The new ESRP clarifies requirements that were previously either unclear or implicit and

provides more detailed and specific guidance to IFC staff and project sponsors in many areas. IFC's Policy on Disclosure of Information was also updated to reflect new disclosure requirements and more clearly define the constraints to disclosure.

One of the more significant changes to the review procedure is increased attention to social issues. Over the past year, IFC has significantly expanded its social science capability and staff and added "social" to the name Environment and Social Review Unit (ESRU)

to reflect that change. IFC expects to continue the development of its capacity on social issues to stay at the leading edge among international financial institutions working with the private sector. IFC realizes that this area is complex and that our knowledge is evolving. We continue to work with our clients, the interested public, and industry leaders in many sectors on these issues.

In May 1997, Glen Armstrong, formerly Managing Director of a leading UK environmental consulting firm, joined IFC as head of the ESRU. New staff and additional capabilities have been added to ESRU in several discipline and sector areas over the past fiscal year to strengthen and deepen the group's capabilities, including an increased focus on the environmental

and social supervision of IFC's portfolio. Overall, the unit is now better equipped to implement the strengthened review procedure and new policies that will go into effect during fiscal 1999.

Promoting Competitive Environmental Advantage

The Environment Division's Capital Markets Environmental Services Team continued to grow in FY98. The Team has the responsibility for environmental and social review of financial intermediary (FI) projects, a continuously expanding area of IFC activity. The Team also provides internal and external training on environmental and social issues and procedures. The objective of the external training is to train senior officials involved with IFC-supported financial intermediaries to identify, assess, and manage environmental and social risks and opportunities.

**Capital Markets
Environmental
Services Team**

Executives from more than 180 financial institutions attended IFC's introductory environmental management workshop, aimed at demonstrating the value of environmental risk analysis to strengthen portfolios. In addition, IFC launched a new week-long workshop for senior managers. The workshop, "Competitive Environmental Advantage: Leading Environmental Change in the Financial Sector," is conducted quarterly and examines opportunities for financial institutions to transform the increasing risk posed by environmental and social issues into financial opportunity, generating competitive advantage through the delivery of value-adding services to industry clients.

Investing in the Environment

The Environmental Projects Unit (EPU) acts as a catalyst in identifying,

Doing Better Business through Effective Public Consultation and Disclosure — A *GOOD PRACTICE MANUAL*

It is good business to engage in public consultation and disclosure on a project's potential environmental and social impacts. This is a central theme of IFC's new *Good Practice Manual*. The manual demonstrates how, through adequate public consultation and disclosure on a project's environmental and social impacts, companies can:

- Improve relations with local communities, leading to a more stable social environment and the provision of the most appropriate social benefits
- Reduce financial risk and direct costs due to delays, including from community opposition
- Raise brand awareness and, ultimately, market share
- Earn a good public reputation that can lead to winning future government contracts and other business
- Foster greater trust between communities and their new corporate neighbors.

The *Good Practice Manual* provides much-needed guidance to project sponsors by establishing benchmarks for good practice, as well as advice on managing local communities' expectations and tailoring consultation to a private sector context. Geared toward IFC project sponsors, the *Manual* is based on lessons learned from an independent review of IFC's experience with public consultation and disclosure. For copies, contact the Environment Division of IFC at (202) 473-6770 or via fax at (202) 974-4348.

"The long-term sustainability of investments is critically dependent on good relations with all stakeholders."

Jannik Lindbaek,
Executive Vice President, IFC

services for solid waste disposal in Durban, South Africa. In FY98, the EPU received final approval for the \$30 million IFC/GEF **Photovoltaic Market Transformation Initiative**, which aims to accelerate the use of solar energy in India, Morocco, and Kenya. In addition, the IFC/GEF **Small- and Medium-Scale Enterprise Program** began its \$16.5 million expansion phase, including loans to a photovoltaic company in Bangladesh and energy efficiency companies in northern Africa. And the IFC/GEF **Hungary Energy Efficiency Cofinancing Program** provided its first credit guarantee.

Looking ahead, the EPU has begun preparation of the IFC/GEF **Efficient Lighting Initiative**. This initiative builds on lessons learned from the IFC/GEF **Poland Efficient Lighting Project** to promote the use of efficient lighting devices in 7 other countries. The EPU 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

developing, and structuring projects with specific environmental goals. In supporting projects ranging from renewable energy to clean water supply, the EPU draws on IFC's own

Environmental Projects Unit

resources as well as concessional funding from sources such as the Global Environment Facility (GEF). IFC has arranged about \$100 million in GEF funding for a variety of innovative private sector projects and has pioneered the provision of nongrant funding by GEF.

In FY98, the EPU assisted IFC's Power Department in appraising and securing IFC approval for a \$70 million investment in the **Honeywell Energy Service Company Multi-Project Facility**, which will improve energy efficiency in Eastern Europe, Russia, and elsewhere. The EPU also supported an investment by IFC's Utilities Group in the **Binh An Bulk Drinking Water project** in Vietnam, and assisted in the provision of advisory

Environmental supervision of the Ispat Karmet coal mines in Kazakhstan.



IFC ENVIRONMENT DIVISION

Africa

Country	Project Name	FY	Bank (\$m)	Total Cost
Regional (Burkina Faso, Côte d'Ivoire)	Community-Based NRM*	96	7	13
Regional (Kenya, Tanzania, Uganda)	Lake Victoria Env. Mgt.*	97	35	78
Angola	Lobito-Benguela Urban Env. Rehab.	92	46	59
Benin	Environmental Management	95	8	9
	Natural Resources Management	92	14	24
Burkina Faso	Environmental Management	91	17	25
	Urban Environment	95	37	40
Burundi	Energy Sector Rehabilitation	91	23	23
Cameroon	Biodiversity Conservation and Mgt.*	95	6	12
Central African Rep.	Natural Resource Management	90	19	34
Congo	Wildlands Protection and Mgt.*	93	10	17
Côte d'Ivoire	Rural Land Mgt. and Infrastructure Dev.	97	45	65
Eritrea	Biodiversity Strat., Action Plan & Nat'l Report*	97	0.28	0.28
Gabon	Forestry and Environment	93	23	38
Gambia	Capacity Bldg., Env. Mgt.-Technical Assist.	94	3	5
Ghana	Coastal Wetlands Management*	93	7	8
	Environment Resources Management	93	18	36
	Forest Resource Management	89	39	65
	Natural Resource Management	98	9.3	60
Kenya	Biodiversity Strat., Action Plan and Nat'l Report*	97	0.16	0.16
	Forestry Development	91	20	65
	Lake Victoria Environment	97	13	13
	Protected Areas and Wildlife Services	92	61	143
	Tana River National Primate Reserve*	97	6	7
Madagascar	Antananarivo Plain Development	90	31	69
	Environment II Project	97	30	155
	Environment Program	90	26	86
	Environment Program Support*	97	21	155
Malawi	Environmental Management Project	97	12	14
	Fisheries Development	91	9	16
	Lake Malawi/Nyasa Biodiversity Conservation*	95	5	5
Mali	Household Energy*	95	3	11
	Natural Resources Management	92	20	32
Mauritania	Rainfed Natural Resources Management	97	14	24
	Water Supply	92	11	15
Mauritius	Biodiversity Restoration*	96	1	2
	Environmental Monitoring and Dev.	91	12	21
	Environmental Sewerage & Sanitation	98	12.4	65.5
	Sugar Bio-energy Technology*	93	3	55
Mozambique	Transfrontier Conservation Areas Pilot*	97	5	8
Niger	Energy	88	32	79
	Natural Resources Management	96	27	42
Senegal	Sustainable and Participatory Energy Mgt.	97	5	5
	Sustainable and Participatory Energy Mgt.*	98	5	19
Seychelles	Biodiversity Conservation & Marine Pollution*	93	2	2
	Environment and Transport	93	5	7
South Africa	Cape Peninsula Biodiversity*	98	12	117
Tanzania	Forest Resources Management	92	18	26
	Lake Victoria Environment	97	10	10
	River Basin Mgt. of Smallholder Irrigation	97	26	31
Togo	Lome Urban Development	94	26	29
Uganda	Bwindi & Mgahinga Nat'l Parks Conservation*	95	4	6
	Environmental Mgt. Capacity Building	96	12	23
	Lake Victoria Environment	97	12	12
Zambia	Environment Program	97	20	40
Zimbabwe	ODS I**	94	1	1

East Asia & Pacific

Country	Project Name	FY	Bank (\$m)	Total Cost
China	Beijing Environment	92	125	299
	Chongqing Indust. Reform/ Pollution Control	96	170	478
	Efficient Industrial Boilers*	97	33	101
	Energy Conservation*	98	22	202
	Environment Technical Assistance	93	50	70
	Forest Dev. in Poor Areas	98	100	364
	Forest Resource Dev. and Protection	94	200	356
	Guangxi Urban Env.	98	92	175
	Hubei Urban Environmental Protection	96	150	370
	Liaoning Environment	95	110	351
	Loess Plateau Watershed Rehab.	94	150	259
	Nature Reserves Management*	95	18	24
	ODS Project I**	94	8	8
	ODS Proj. II**	94	1	1
	ODS Proj. III**	95	67	67
	ODS Proj. IV**	95	100	400
	Second Shanghai Sewerage	96	250	633
	Shandong Environment	98	95	200
	Shanghai Environment	94	160	457
	Ship Waste Disposal*	92	15	64

Note: * Global Environment Facility
 ** Montreal Protocol (includes several subprojects)

(continued on next page)

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Country	Project Name	FY	Bank (\$m)	Total Cost
China	Sichuan Gas Transmission Rehab.*	94	10	123
	South Jiangsu Environment Protection	93	250	584
	Sust. Coast Res. Dev.	98	100	190
	Tianjin Urban Development and Env.	92	100	195
	Yunnan Environment	96	160	307
	BAPEDAL Dev. Technical Assist.	92	12	15
Indonesia	Biodiversity Collections*	94	7	11
	Coral Reef Rehabilitation and Management Proj.* (COREMAP)	98	12	60
	Integrated Pest Management	93	32	53
	Kerinci Seblat Integrated Conservation/Dev.*	96	15	47
	Kerinci-Seblat Integrated Conservation/Dev.	96	19	47
	National Watershed Mgt. and Conservation	94	57	488
	ODS Proj. I**	95	16	16
	Renewable Energy Small Power Project	97	66	141
	Renewable Energy Small Power Project (RESPP)*	97	4	141
	Solar Home Systems (SHS)*	97	24	118
	Solar Home Systems Project	97	20	618
	Surabaya Urban Development	94	175	612
	Yogyakarta Upland Area Development	91	16	25
	Environmental Research and Education	93	60	97
	Environmental Technology Development	94	90	156
	Kwangju and Seoul Sewerage	93	110	530
Ports Devel. & Env. Improvement	95	100	1107	
Waste Disposal	95	75	305	
Lao PDR	Wildlife & Protected Areas Conservation*	94	5	20
	Forest Management and Conservation	94	9	20
Malaysia	Southern Provinces Renewable Energy*	98	0.74	2
	ODS Investment Proj. I**	96	9	9
Philippines	ODS Recycling Proj.**	93	2	2
	Community-Based Resources*	98	50	70
	Conservation of Priority Protected Areas*	94	20	23
	Environment & Natural Resources Management	91	224	369
Thailand	Leyte-Luzon Geothermal*	94	30	1334
	ODS Proj. I**	95	12	12
	Clean Fuels & Env. Improvement	95	90	370
Vietnam	ODS Proj. I**	95	17	17
	Promotion of Electricity Energy Efficiency*	93	10	89
	Forest Protection & Rural Development*	98	21.5	32.2

Country	Project Name	FY	Bank (\$m)	Total Cost
Albania	Biodiversity Strat., Action Plan & Nat'l Report*	97	0.1	0.1
Azerbaijan	Emg. Environ. Impr.	98	15.0	24.5
Belarus	Phaseout of Ozone-Depleting Substances*	97	6.9	15.7
Bulgaria	Env. Remed. Pilot	98	16.0	25.0
	Ozone Depleting Substances Phase-out*	96	10.5	13.5
Croatia	Biodiversity Strat., Action Plan & Nat'l Report*	97	0.1	0.1
	Coastal Forest Reconstruct. & Protection Proj.	97	42.0	60.0
	Munic. Envir. Infra.	98	36.3	145.4
Cyprus	Southeast Coast Sewerage and Drainage	92	32.0	103.0
Czech Republic	Biodiversity Strategy, Action Plan, and National Report*	98	0.1	0.1
	Biodiversity Protection*	94	2.0	2.8
	Phaseout of Ozone Depleting Substances	95	2.0	4.0
Estonia	Power and Env. Improvement	92	246.0	246.0
	District Heating Rehabilitation	94	38.0	65.0
	Haapsalu and Matsalu Bays Environment	95	2.0	8.3
Georgia	Biodiversity Strat., Action Plan & Nat'l Report*	96	0.12	0.12
Hungary	Phaseout of Ozone Depleting Substances*	96	6.9	8.4
Kyrgyzstan	Biodiversity Strat., Action Plan & Nat'l Report*	97	0.1	0.1
Latvia	Liepaja Environment	95	4.0	21.0
	Solid Waste Management	98	8.0	15.1
	Biodiversity Strat., Action Plan & Nat'l Report*	97	0.1	0.1
Lithuania	Klaipeda Environment	95	7.0	23.1
	Klaipeda Geothermal Demonstration	96	5.9	18.0
	Klaipeda Geothermal Demonstration*	96	6.9	18.0
	Siauliai Environment	96	6.2	22.9
	Coal-to-Gas Project*	95	25.0	48.3
Poland	Energy Resource Development	90	250.0	590.0
	Environment Management	90	18.0	27.0
	Forest Development Support	94	146.0	335.0
	Heat Supply Restructuring and Conservation	91	340.0	739.0
	Katowice Heat Supply	95	45.0	92.9
	Phaseout of Ozone Depleting Substances*	97	6.2	20.2
Romania	Danube Delta Biodiversity*	95	4.5	4.8
Russian Federation	Biodiversity Conservation*	96	20.1	26.0
	Emergency Oil Spill	95	99.0	140.0
	Environmental Management	95	110.0	195.0
	Greenhouse Gas Reduction*	96	3.2	130.9
	ODS Consumption Phaseout*	96	60.0	44.3

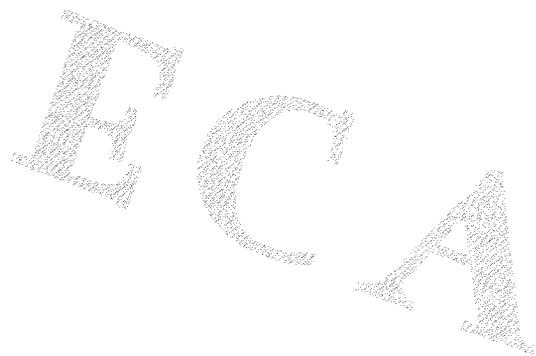
Europe & Central Asia

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Country	Project Name	FY	Bank (\$m)	Total Cost
Slovak Republic	Biodiversity Protection*	94	2.3	3.2
Slovenia	Environment	96	34.6	55.4
	Phaseout of ODS*	96	6.2	9.7
Turkey	Ankara Sewerage	90	173.0	557.0
	Bursa Water Supply and Sanitation	93	130.0	258.0
	Eastern Anatolia Watershed Rehab.	93	77.0	121.0
	IFC-ODS Proj. I**	95	0.9	0.9
	In-Situ Conservation of Genetic Biodiversity*	93	5.1	5.7
	Istanbul Water Supply and Sewerage	88	218.0	570.0
	ODS Proj. I**	94	6.2	6.2
	ODS Proj. II**	96	4.0	4.0
	Tek-iz- IFC Proj.**	96	0.7	0.7
Ukraine	Biodiversity Strat., Action Plan & Nat'l Report	97	0.1	0.1
	Danube Delta Biodiversity*	94	1.5	1.7
Uzbekistan	Tashkent Solid Waste	98	24.00	56.00



Latin America & Caribbean

Country	Project Name	FY	Bank (\$m)	Total Cost
Regional	Planning for Adaptation to Climate Change*	97	6	6
Regional	Terra Capital Biodiversity Fund (IFC)	98	5	55
Regional	Ship-Generated Waste Management*	95	13	51
Regional	Initiative for Ship-Generated Waste*	94	6	6
Argentina	Native Forests and Protected Areas	97	20	30
	Biodiversity Conservation	98	10.1	21.9
	ODS Proj. I**	97	22	22
	Pollution Management	98	18	36
Bolivia	Biodiversity Conservation*	93	5	8
	Eastern Lowlands Regional Dev.	90	35	55
	Environment, Industry & Mining	96	11	50
Brazil	Brazilian Biodiversity Fund*	96	20	25
	Env. Conservation and Rehabilitation	96	50	109
	Espirito Santo Water Supply & Coastal Pollution Mgt.	94	154	308
	Land Management II	90	33	72
	Land Management III	98	55	124.7
	Mato Grosso Natural Resources Management	92	205	286
	Minas Gerais Water Quality and Pollution Control	93	145	308
	National Biodiversity Project*	96	10	20
	National Environment	90	117	166
	ODS Proj. I**	94	8	8
	Rondonia Natural Resource Management	92	167	228
	Water Quality & Pollution Control-Sao Paulo Parana	93	245	494
Costa Rica	Biodiversity Resources Development	98	7	11
	Tejona Wind Power	94	3	31
Chile	Environment Institutions Development	93	12	33
	ODS Proj. I**	93	2	2
Colombia	Natural Resource Management Program	94	39	65
	Urban Environment Technical Assistance	96	20	40
Dominican Republic	Biodiversity Strategy, Action Plan and National Report to the Conference of the Parties	98	0.25	0.25
Ecuador	National Environmental Policy Reform	98	3.00	3.70
	Biodiversity Protection*	94	7	9
	Environment Management	96	15	20
	Lower Guayas Flood Control	91	59	98
	Mining Dev. and Env. Control (TA)	96	14	24
	ODS Proj. I**	94	2	2
El Salvador	Promotion of Biodiversity Conservation within Coffee Landscapes	98	0.3	0.3
Haiti	Forestry and Parks Protection TA Project	97	22	23
Honduras	Biodiversity in Priority Areas	98	7	21
	Environment Development	95	11	13
	Land and Natural Resources Management	97	35	40
Jamaica	Demand Side Management Demonstration*	94	4	12
Mexico	Community Forestry	97	15	23
	Environment and Natural Resources	92	50	127
	High Efficiency Lighting Pilot*	94	10	23
	MAC Recycling and Aerosols**	92	0	0
	Northern Border Environment	94	368	762
	ODS Proj. I**	93	4	4
	Protected Areas Program*	92	25	42
	Second Solid Waste Management	94	200	416
	Transport Air Quality Management	93	220	1087
	Water and Sanitation II	94	350	770
	Water Resources Management	96	187	342
Nicaragua	Atlantic Biodiversity Corridor*	97	7	22
OECS Countries	Solid Waste Management	95	13	51
Panama	Atlantic Mesoamerican Biological Corridor	98	8.4	12.8
	Rural Poverty and Natural Resources	97	23	30
Paraguay	Land Use Rationalization	92	29	41
	Natural Resources Management	94	50	79
Peru	El Niño Emergency Loan	98	150	430

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Country	Project Name	FY	Bank (\$m)	Total Cost
Peru	National Trust Fund for Protected Areas*	95	5	8
	Sierra Natural Resources	97	51	93
St. Vincent and the Grenadines	Biodiversity Strategy, Action Plan and National Report to the Conference of the Parties	98	0.4	0.4
Trinidad and Tobago	Environmental Management	95	6	11
Uruguay	Natural Resources Mgt. & Irrigation Dev.	94	41	74
	ODS Proj. I**	95	1	1
Venezuela	AAISA-MAC**	96	4	4
	Chiller Retrofits- Clinica Atlas**	94	0.1	0.1
	Chiller Retrofits- Congreso de la Republica**	94	0.1	0.1
	Chiller Retrofits- Instit. de Prevencion Social del Medico**	94	0.1	0.1
	Environmental Management and Cartography	98	28.0	45.0
	FAACA-Mac**	95	3	3
	INPARQUES	95	55	96
	ODS Proj. I**	93	1	1

Middle East & North Africa

Country	Project Name	FY	Bank (\$m)	Total Cost
Regional (Algeria, Morocco, Tunisia)	Oil Pollution Mgt.-Southwest Mediterranean*	94	18	20
Algeria	El Kala National Park and Wetlands Mgt.*	94	9	11
	Pilot Forestry and Watershed Mgt.	92	25	37
	Water Supply and Sewerage Rehabilitation	94	110	170
Egypt	IFC-MCMC Compressor**	93	2	2
	Matruh Resource Management	93	22	31
	Pollution Abatement	96	35	51
	Pollution Abatement	98	35	48.7
	Private Sector Tourism	93	130	784
	Red Sea Coastal and Marine Resource Mgt.**	93	5	6
Iran	Teheran Transport Emissions Reduction	94	2	4
Jordan	Gulf of Aqaba Environmental Action Plan*	96	3	13
	ODS Proj. I**	94	2	2
	ODS Proj. II**	95	1	1
Lebanon	Coastal Pollution Control	97	53	308
	Solid Waste & Environmental Management	95	55	135
Morocco	Environmental Management	94	6	11
	Second Forestry Development	90	49	100
	Water Resource Management	98	10	
Tunisia	Biodiversity Strat., Action Plan & Nat'l Report*	97	0.09	0.09
	Natural Resources Management Project	97	27	51
	Northwest Mountainous Areas Development	94	28	50
	ODS Proj. I**	94	2	2
	Second Forestry Development	93	69	148
	Solar Water Heating*	95	4	21
Yemen, Republic of	Land and Water Conservation	92	33	48

Country	Project Name	FY	Bank (\$m)	Total Cost
Bangladesh	Forest Resources Management	92	50	59
Bhutan	Third Forest Development	94	5	9
	Trust Fund for Env. Conservation*	92	10	18
India	Alternate Energy*	93	26	186
	Andhra Pradesh Forestry	94	77	89
	Bombay Sewage Disposal	96	192	280
	Coal Environment and Social Mitigation	96	65	80
	Ecodevelopment	97	28	67
	Ecodevelopment*	97	20	67
	Environmental Mgt. Capacity Building	97	50	61
	Forestry Research Education and Extension	94	47	56
	Hydrology	96	142	178
	Industrial Pollution Control	91	157	236
	Industrial Pollution Prevention	95	168	353
	Integrated Watershed Development (Hills)	90	75	75
	Integrated Watershed Development (Plains)	90	55	55
	Kerala Forestry	98	39	45
	Madhya Pradesh Forestry	95	58	67
	Maharashtra Forestry	92	124	142
	ODS Proj. I**	95	1	1
	ODS Proj. II**	95	25	25
	Renewable Resources Development	93	190	440
	Uttar Pradesh Sodic Lands Reclamation	93	55	80
	U.P. Forestry	98	53	65
Nepal	Hill Community Forestry	89	31	45
Pakistan	Balochistan Natural Resource Management	94	15	18
	Env. Protection & Resource Conservation	92	29	57
	Fordwah E. Sadiquia Irrigation and Drainage	93	54	71
	Northern Resource Management	93	29	40
	ODS Proj. I**	97	2	2
	Punjab Forest Sector Development	95	25	34
	Second Scarp Transition	91	20	49
Sri Lanka	Colombo Environmental Improvement	95	39	49
	Energy Services Delivery*	97	6	55
	Environmental Action	97	15	21
	Conservation and Sustainable Use of Medicinal Plants*	98	5.00	25.00

South Asia



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greenhouse gas emissions reduction; see *Matrix* in Overview, page 7). IFC is also planning a joint initiative with the Bank and several private foundations to support the use of solar power in off-grid applications.

Technical Assistance and Environment

IFC's Technical and Environment Department (CTE) includes a large Technical Group with a wide range of technical skills, commercial expertise, and industrial experience.

CTE specialist teams provide technical assistance to IFC investment officers and clients, as well as:

- ◆ Hands-on business and industrial experience and management expertise
- ◆ Authoritative identity and continuity

WORKING WITH THE WORLD BANK

Over the past year, IFC has increased its coordination and interaction with other World Bank Group institutions. IFC's development of environmental and social policies has been based on and closely coordinated with those of the World Bank. IFC will remain involved with these policy initiatives to ensure continuing harmony with the Bank. IFC's Environmental Projects Unit has also worked very closely with the World Bank on GEF projects, sector strategies, and a joint initiative to support off-grid solar power. IFC also continues to advise MIGA on environmental and social issues related to their projects (see Box below).

IFC has taken an active role in the new Bank structure created to address environmental and social issues. The director of IFC's Technical and Environment Department is a member of the Environmentally and Socially Sustainable Development (ESSD) Council. In addition, senior staff from the Environment Division are on the sector boards of the Environment and Social Development families.

MIGA and the Environment

The Multilateral Investment Guarantee Agency (MIGA), a member of the World Bank Group, has the mission of encouraging the flow of private sector investment to developing countries by providing political risk insurance to eligible foreign investors that request it. MIGA is committed to supporting investment that is environmentally responsible and sustainable. To fulfill this commitment, MIGA continues to obtain the advice of environmental specialists in the IFC. MIGA began in FY98 to develop its in-house environmental capabilities, which will be further expanded in FY99. MIGA also has had extensive discussions with its Board in FY98 to formalize its policies on environmental matters.

A prospective MIGA project is carefully reviewed before a guarantee contract is issued to ensure that the investment meets World Bank environmental policies and guidelines. In addition, MIGA guarantee contracts require the investor to comply with the host government's laws and regulations. In FY98, MIGA issued 55 guarantee contracts for \$831 million in coverage, and expanded its country membership to 145.

MIGA has made a special effort to assist environmentally beneficial private sector investments in natural habitat conservation, natural resource management, pollution control, recycling, and renewable energy sources. In FY98, MIGA added to its portfolio one new project in renewable energy (an 18 MW run-of-river hydropower project in Costa Rica), and two new projects to achieve significant cleanup of existing environmental problems (tailings from an old copper mine in Uganda; and the use of low-emission, fluidized bed technology to revitalize an existing in-town power and district heating plant that was not meeting strict Czech Republic emissions requirements). The cleanup program associated with the Uganda project is particularly important because it will abate an existing threat to water quality and aquatic habitat in Lake George and Queen Elizabeth National Park. This investment will generate income while eliminating a significant source of contamination.

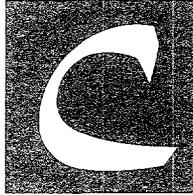
- ◆ Knowledge of business risk and issues in a variety of industrial sectors
- ◆ Global perspective and enduring institutional knowledge.

The objective of CTE's technical assistance and support is to make a tangible contribution to successful business ventures in IFC's target markets and to strengthen the competitive position of IFC's clients. In conjunction with their departmental colleagues in the environmental and social development areas, CTE's technical specialists make significant contributions to optimizing the technical and environmental features of IFC projects by advising on clean and efficient technologies, training, energy efficiency, and health and safety improvements.

Shawn Miller and Lee Doran of IFC's Technical and Environment Department can be reached at (202) 473-6770, fax (202) 974-4348.

Cities and Health

Carter Brandon



CITIES in developing countries are increasingly unhealthy places to live, with local governments lacking the capacity to collect and dispose of municipal sewage and solid waste, or control effluents from industry and emissions from transport. Infrastructure and services are often unable to keep pace with the discharge of pollutants, and the concentration of waste overwhelms the assimilative capacity of natural ecosystems, within city boundaries and often downstream as well, creating problems for rural household and agricultural water use.

These problems will only be compounded as rapid urbanization continues in the next century. In Asia, the urban population is expected to reach 2.5 billion in 2025, three times what it was in 1990, and even now, 87 Asian cities (38 in China, 23 in India) have more than one million inhabitants. Latin America is even more urbanized than Asia, while Africa is slightly less so. Across the world, not only is the number of large cities increasing, but smaller cities are becoming larger at a faster rate.

Of all the costs of urban environmental degradation, damage to human health is by far the highest. This is followed in importance by higher productivity costs, with environmental problems imposing higher costs to producers and consumers. These include the higher costs of supplying clean water due to polluted nearby sources, of transport due to congestion, of repairing and maintaining buildings damaged by air pollution, of higher wages to compensate workers for working in unhealthy environments, and tourism losses. In addition to these local effects, urban areas also generate global environmental costs, specifically the global damage associated with greenhouse gas emissions.

Quantifying Health Impacts

The most direct links between urban environmental degradation and public health are: (a) air pollution and respiratory diseases (see *Box*, page 39); (b) water pollution and water-related diseases such as diarrhea, dysentery, cholera, and typhoid (see *Box*, page 40); (c) solid waste and

such diseases as the plague, carried by rats (although this is far less common than the first two); and (d) toxic waste and toxicity-related cancers and neurological problems. Health impacts can be divided into premature deaths (mortality) and sickness (morbidity), some cases of which may involve hospitalization.

Bank studies estimate that the human costs of air and water pollution in many of the world's major cities run to tens of thousands of deaths, millions of incidents of moderate to severe sickness, and billions of dollars in lost productivity and other damage per year—*per city*. In Africa and in South, Southeast, and Central Asia, water pollution has the severest health impact, while in China, Latin America, and Eastern Europe, the severest impact comes from polluted air. In general, cities in temperate zones and with higher per capita incomes have relatively worse air pollution problems, often in winter; whereas warmer cities with lower income levels and lower rates of access to clean water and sanitation have relatively worse water pollution problems.

At a time when environmental health damage is worsening in many cities, careful quantification of that damage is helping policymakers combine environmental and health decisions with sound economics. Quantification helps set priorities, mobilize public awareness, and encourage communication across different constituencies and interest groups, including environmentalists, health professionals, and anti-poverty NGOs. For example, studies from the mid-1990s showing that thousands of people die every year in New Delhi due to air pollution—and tens of thousands more across India—have been frequently cited in the media, updated by NGOs trained in air pollution modeling, and cited in parliament and in the high courts.

Poverty and the Urban Environment. As described in detail in the *Box* on page 40, the poor bear the brunt of urban environmental degradation: they are less buffered than the non-poor from water pollution, solid and toxic waste, high traffic, and air and noise pollution. In addition, slums lack potable water, sanitation, and drainage; are overcrowded; and are often located closer than



City street in Pakistan.

B. RAHIL

Health Impacts of Air Pollution

The two largest health impacts of air pollution are: (i) premature mortality, primarily from exposure to high levels of fine particulate matter; and (ii) excess cases of chronic bronchitis and other respiratory infections, again associated with fine particulates. While ozone, sulfur dioxide, nitrogen dioxide, and atmospheric lead also cause sickness and occasional death, the impacts are generally less severe than those associated with particulates. Such impacts have been estimated through epidemiological work begun in industrial countries in the 1950s, but similar work is increasingly being done in developing countries as well.

A worldwide review of 126 cities in which high levels of particulates exceed World Health Organization (WHO) guidelines estimates that 130,000 premature deaths and 50–70 million incidents of respiratory illness occur each year due to air pollution.^a In East Asia alone, there are more than 10,000 deaths a year in Beijing, 3,000–6,000 in each of ten other Chinese cities, 6,000 a year in Jakarta, and 2,000–4,000 a year each in Bangkok, Seoul, and Manila. There are also 30,000–90,000 cases a year of severe chronic bronchitis in each of these cities. In monetary terms, these costs total 28 percent of urban GDP in Beijing, 8–30 percent in other Chinese cities, 7 percent in Manila and Bangkok, and 4 percent in Seoul. The costs in many cities, such as Jakarta and Bangkok, would be 20–40 percent higher if vehicle costs and the value of time lost in traffic congestion were included.

Elsewhere in the world, air pollution impacts are comparable: 40,000 premature deaths a year in India, 36,000 in the Newly Independent States, 4,000–6,000 in Cairo, 4,000 in Sao Paulo and Rio de Janeiro combined, and 6,400 in Mexico City. The economic value of this health damage represents 3–10 percent of urban income. One recent study has shown that the “environmental costs of fuel use in large cities can be so high that marginal damage costs are comparable with or even exceed (for some fuels) both producer and retail prices.”^b These numbers make urban pollution both a major health and a major economic concern.

These health damage estimates are increasingly being used to compare the cost of pollution abatement with the health benefits gained, and the findings are that the cost of abatement per life saved is extremely low—often \$1,000 or less. Specifically, the rate of return on particulate emission control is so high that it is an extremely cost-effective public health approach to pursue in all cities with high particulate levels.

Notes:

- a. Maddison, David, “A Meta-analysis of Air Pollution Epidemiological Studies,” Center for Social and Economic Research on the Global Environment, University College London, 1997.
- b. Lvovsky, Kseniya and Gordon Hughes, “Addressing the Environmental Costs of Fuels in Developing Countries,” World Bank, presented at a conference of the Association of Environmental Economists, Venice, Italy, June 1998.

other neighborhoods to waste dumps and industrial sites. One study showed that urban slums in Bangladesh have twice the infant mortality rate as the overall urban population, and nearly 50 percent higher infant mortality than rural areas.¹ While these data capture the effects of other factors, including the hygiene and access to medical services of slum dwellers, they are a strong indicator of the environmental insults to public health in slum areas.

Overall, urban cleanup will reduce more sickness and death in the poorest neighborhoods than

elsewhere in cities. Although the poor may have to pay the cost of improved services, this has proven not to be a serious barrier. Worldwide, the urban poor have been willing to pay for improved water supply, sanitation, and solid waste collection, mainly because they are already paying heavily in other ways: in illness from drinking polluted water, in fuel costs from boiling their water, or from buying clean water from private hawkers, often at two to twelve times the price paid to water utilities by the middle and upper classes.

This article notes that health costs resulting from urban air, water, and solid waste pollution can reach 10 percent of urban income.

HEALTH IMPACTS OF WATER POLLUTION

In Africa and South, Southeast, and Central Asia, more people suffer from polluted water than from any other urban environmental problem. Unlike air pollution, which affects all city residents more or less equally, the lack of access to clean water and sanitation disproportionately affects poor populations living in squatter settlements and other areas not adequately serviced by water and sanitation infrastructure. The health impacts also depend on other nonenvironmental factors—also highly correlated with income levels—such as family hygiene practices and the responsiveness of the local public health system.

A WHO study estimated the correlation between health and improved access to potable water and sanitation.^a The study showed that improved water supply and sanitation produces median reductions in morbidity and mortality associated with diarrhea and other tropical diseases by about 25 and 65 percent, respectively.

Recent studies of polluted water health impacts also have been done by the World Bank for Brazil, East Asia, India, and Central and Eastern Europe/the Newly Independent States.^b The Brazil study showed that a 10 percent rise in urban access to piped water reduces average infant and children mortality rates by almost 3 percent. Furthermore, one “disability adjusted life year (DALY)”^c can be saved for an average cost of \$1,560—significantly less than the value society places on a year of life. Thus there is a very high social return to investments in piped water.

Another Bank study, this one for East Asia, estimated a total regional loss due to poor urban water supply and sanitation of about 15 million DALYs per year—due mainly to poor urban sanitation. The capital cost of sanitation investments to prevent this loss of DALYs would be about \$90 billion, or \$6,000 per DALY—also less than the value of DALYs saved. Even if this cost could not be met in the short and medium term by lower-income Asian countries, spending for improved sanitation should clearly be a health and environmental priority for middle-income Asian countries.

Notes:

- a. Esrey, S.A., J.B. Potash, L. Roberts, and C. Shiff, “Effects of Improved Water Supply and Sanitation on Ascariasis, Diarrhea, Dracunculiasis, Hookworm Infection, Schistosomiasis, and Trachoma,” World Health Organization, 1991.
- b. For Brazil: “Managing Pollution Problems,” World Bank, 1998; for East Asia: “Can the Environment Wait?” World Bank, 1997; for China: “Clear Water, Blue Skies: China Environment in the Twenty-first Century,” World Bank, 1997; and for Central and Eastern Europe/the Newly Independent States: “Transition Toward a Healthier Environment: Environmental Issues and Challenges in the Newly Independent States,” World Bank, 1998.
- c. DALYs are a combination of: (a) discounted and weighted years of life lost as a result of death at a given age; and (b) disability as a result of morbidity, adjusted by severity (see *World Development Report 1993*, pp. 26-27).

Urban Environmental Management

Addressing the health damage caused by air pollution, water pollution, and solid waste does not impose a special agenda on city governments. There is no difference between good urban management strategic thinking and urban environmental strategic thinking, since good urban management encompasses the core public health concerns raised by pollution. Experience has shown that the most successful efforts to integrate environmental and health concerns into urban management emphasize the recovery of

investment through user fees and the pricing of natural resources such as water and fossil fuels to capture the cost of their use (see *Box*, page 41). The challenge, therefore, is for countries to adopt urban management strategies that combine sound fiscal management and the provision of urban services with efficient environmental regulation.



*Squatters' homes,
San Salvador.*

J. ESCOBAL

Environmental Health Successes in Surat, India

Environmental health problems in Surat, the oldest municipality in India, were at their worst in the early 1990s. This city of 2.2 million was incurring nearly half of all diarrheal cases in Gujarat, even though it represented only 5 percent of the state's population. Then, in 1994, it had an outbreak of the plague—making international headlines and costing the city both lives and an estimated \$1.5 billion in disrupted commerce and trade. Considered one of the dirtiest cities in India, it was mobilized into action despite the tight fiscal constraints common to all Indian municipalities.

By 1997, Surat was voted the second cleanest city in India. As a result of prudent actions over four years, water supply and sanitation coverage has improved considerably, and the incidence of diarrheal disease has dropped to only 10 percent of the state total. The plague disappeared. Incidents of malaria—correlated with stagnant surface water and poor drainage—dropped significantly. These health gains were achieved largely through decentralization, improving efficiency, enhancing infrastructure performance standards, and strengthening health services.

In addition, sanitation and drainage infrastructure in the city has been extended: 217 of the previously 253 unserved slum communities have been provided with proper sanitation (including toilets) and drainage facilities. The city has upgraded two sewage treatment plants, which now meet discharge standards. Solid waste management has dramatically improved, to a collection efficiency of nearly 98 percent, and has been partly contracted out in order to make it financially viable. The city also operates a controlled landfill. To combat air pollution, traffic management has been streamlined with the intention of reducing congestion and hence vehicular emissions, but reductions in ambient levels are yet to be recorded. Unleaded gasoline will be introduced shortly.

The municipal corporation collects 85 percent of its property tax—the highest rate for any city in India—and has earned an investment grade credit rating. Its infrastructure policies and investment planning have met its urgent environmental needs in a way that is consistent with sound urban fiscal management. To continue making progress in badly needed infrastructure, the city has made ambitious plans to reach full coverage in the provision of piped water supply, expand the sewerage system to cover half the city's population, and introduce buses fueled by natural gas.

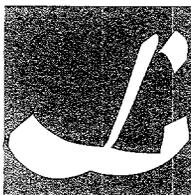
¹ World Resources Institute/UNEP/UNDP/World Bank, *The Urban Environment*, 1996.

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Environmental Capacity Building — A Portfolio Review

Sergio Margulis and Tonje Vellester

Background



LACK of institutional capacity in member countries has long been a constraint to implementing environmental policies and programs. To address this problem, the Bank has been heavily involved in providing technical assistance for environmental institutional development (ID). These efforts are part of a large environmental portfolio consisting of 163 projects costing nearly \$11 billion in Bank loans in such areas as biodiversity protection, pollution control, and water supply and sanitation. The Bank also continues to support the development of National Environmental Action Plans (NEAPs), as it has since the mid-1980s, to help countries establish a framework for environmental management. By the end of 1997, 57 IDA and IBRD countries had completed NEAPs, and 24 more were preparing them. The Bank's current environmental ID portfolio—29 out of the 163 projects, valued at \$1.5 billion—follows directly from this effort.

While it is too early to conclusively judge the impact of ID projects, there is a perception that—although most have been rated satisfactory—the results in terms of improved environmental management have been frustrating. ID is a slow, gradual process, requiring long-term commitment and learning by both the borrower and the Bank. As they have evolved, ID projects have increasingly emphasized participation, decentralization, flexibility, and a long-term perspective.

The Environmental ID Portfolio

The Bank's first two environmental ID projects, in Madagascar and Brazil, became active in 1990; today there are active projects in 26 countries in all regions. The projects average \$55 million, reflecting the relatively low cost of technical assistance, though this is pushed up by a few large projects that mix ID with environmental investment components. Projects are generally larger in Europe and Asia, though the majority are located in Africa and Latin America.

Quality at Entry

Projects tend to focus on the process of creating or strengthening environmental institutions

Typical Activities of Environmental ID Projects

Environmental institutions. Some countries have mature institutions for environmental management (Colombia), but most projects involve the establishment, consolidation, or restructuring of very young institutions.

Policies and instruments. Reviewing, developing, and streamlining policies and guidelines for environmentally sound management in a number of sectors.

Information systems, data management, and monitoring. To facilitate the gathering and management of environmental information. The focus can be general or on specific issues such as biodiversity (China), coastal zone management (Brazil), or urban pollution (Mexico, Chile, and Russia).

Financing mechanisms. Creation of incentive structures, public-private partnerships for environmental management, environmental funds for protected areas or pollution abatement, credit lines for environmental projects.

Education and research. Both primary schools and universities are targeted. Some projects have research components.

Public awareness campaigns. To build consensus for environmental programs and policies, and encourage the participation of local communities and rural people. Media campaigns use television, radio, posters, and newsletters.

rather than on improvements in indicators. The earlier projects tended to minimize risks such as the limited absorptive capacity of local agencies, unfavorable macroeconomic conditions, and lack of government commitment, which later were cited as having negatively affected implementation. Based on these lessons, the trend is now toward encouraging greater participation by various stakeholders, the use of gradual and piloting approaches, the introduction of economic incentives, and the decentralization of environmental management.

Implementation

The performance of environmental ID projects has improved in the last four years, but in FY98 a number of projects had serious implementation problems. The most cited were:

- ◆ *Borrower factors:* (i) volatile political or economic environment; (ii) lack of political will/counterpart funding; (iii) institutional rigidity or tensions;
- ◆ *Bank factors:* (i) more emphasis on preparation than on implementation, with limited resources for supervision; (ii) high task manager turnover; (iii) complex Bank procedures.

Main Lessons

Changing institutions involves changing institutional cultures, and such efforts are inevitably slow and gradual. Institutional development in the environmental field is further complicated by the cross-sectoral nature of the problems, the lack of understanding of environmental issues, and the fact that institutions are typically young, without clearly defined responsibilities.

Three main types of internal Bank problems negatively affect its projects: (i) the incentives for task managers to promote large projects rather than skills transfer and improved management capacity; (ii) the project cycle, originally designed for infrastructure investments, is unsuited to a continuous, gradual capacity building effort; and (iii) blueprint solutions, which are inappropriate in the case of ID because of the individuality of countries and institutions.

On the government side, the key elements for successful implementation are ownership and political support. External assistance can help weak institutions define and carry out their responsibilities, but governments and beneficiary agencies must have the political motivation to ultimately lead the process from the inside.

Recommendations

- ◆ Projects must clearly define what needs to be strengthened, clarify the responsibilities of each

institution, and identify priorities based on a country's specific needs and conditions. They should be designed as a series of building blocks, with specific objectives defined as the project develops, as institutional capacity deepens, and as the Bank learns more about the country's institutions.

- ◆ Government agencies must assume ownership of projects and be committed to involving beneficiaries, other stakeholders, and the public, which will help ensure the accountability of institutions.
- ◆ New operating procedures, such as the Adaptable Lending system, should support longer-term programs and pilot initiatives.
- ◆ Task managers must be given the incentives to pursue a long-term institution building process, to design small rather than big projects, and to take the time to realistically assess the government's interest in and capacity to carry out a project.
- ◆ The overall objective of such projects is to strengthen the environmental management system as a whole, not only an environmental agency in isolation. It is thus important to create partnerships with other environmental institutions and stakeholders.
- ◆ Stand-alone ID projects may be necessary to help prepare or strengthen the policy framework, but specific objectives may be clearer and easier to achieve when combined with investment projects.

While the factors mentioned above may have undermined the Bank's effectiveness in environmental ID, the lessons of experience are now being incorporated into the implementation of older projects and the design of the new ones. But like the institutions that such projects support, the Bank also needs time to change. The Bank will continue to review its performance in this and other areas, and will follow up where the need for improvement is found.

This article says

that long-term

institutional

capacity building

is needed to

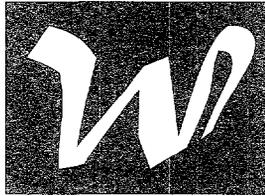
achieve environ-

mental objectives.

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Inter-Basin Water Transfers — Emerging Trends¹

Rafik Hirji



Water is scarce in many arid and semi-arid regions—the Middle East, Eastern and Southern Africa, and parts of Latin America, the Caribbean, and South Asia. But even in countries with an overall abundance of water resources—Australia, Brazil, China, Mexico, and the United States—demand exceeds supply in some areas. To address such

deficits, agencies at the national, regional, and local levels often import water through inter-basin transfers.

Such transfers can have enormous environmental impacts—in the exporting area, the importing area, and the path linking the two areas. The exporting area can experience reduced flows, changed seasonal hydrology, or

reduced dilution. Importing areas can be damaged from inefficient or overuse of water (for example, water logging and salinity buildup), disposal of toxic wastewater, or the transport of nutrients. Imported water can also exacerbate scouring and erosion in the receiving rivers.

This article discusses four cases that illustrate such impacts: two older water transfer schemes in industrial countries, the United States and Australia, designed and built 50–60 years ago, before the environmental impacts of such projects were understood. The resulting degradation of the environment has catalyzed reforms in these

countries' water policies to restore damaged ecosystems. And two newer schemes in developing areas, China and Southern Africa, both designed within the last decade with the benefit of environmental impact assessments (EIAs). The newer cases show that although EIAs have become an important tool for safeguarding the environment in water transfer schemes, they are insufficient for mainstreaming the environment in the absence of sound water policies. Such policies should give high priority to the ecological value of rivers and other bodies of water, and should define explicit criteria and approaches for protecting those waters and restoring damaged aquatic ecosystems.

Early Schemes in Industrial Countries

United States

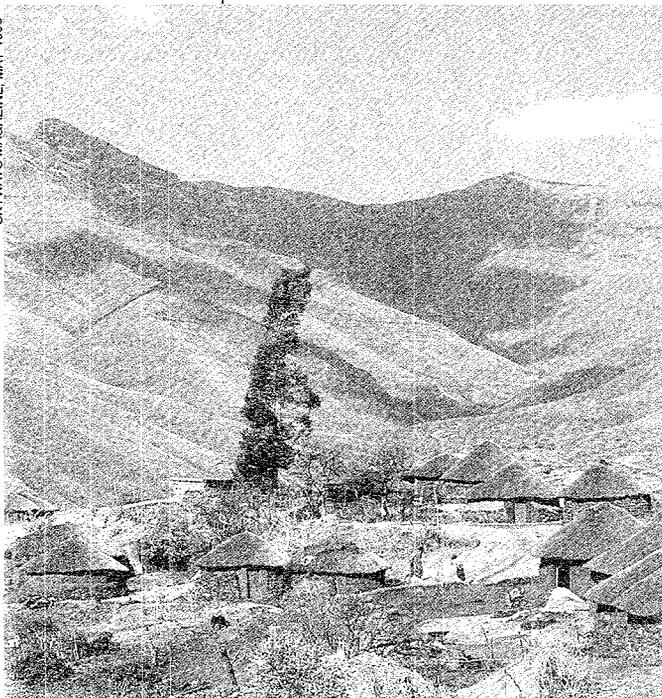
In California, which now has the seventh largest economy in the world, a variety of federal, state, and local inter-basin water transfers were developed over the past 85 years to meet rapidly growing demand.

In 1913, the city of Los Angeles built a 233-mile aqueduct to transfer water from the Owens valley in eastern Sierra Nevada. This scheme still provides 75 percent of the city's annual supply.

Then, in 1937, a **Central Valley Project (CVP)** was funded by the federal government to divert water from the Sacramento-San Joaquin river delta to southern California. The scheme comprised 20 reservoirs, 11 power plants, 3 fish hatcheries, and 500 miles of canals. In a normal year, it still delivers 7 million acre-feet of water to irrigate 3 million acres of farmland and supply 2 million urban customers. The CVP facilities were constructed primarily for river regulation, navigation, and flood control, but they also provide power generation and recreation.

The CVP was supplemented in 1960 by the state-funded **State Water Project (SWP)**, comprising 22 dams and reservoirs and a 444-mile aqueduct from the northern to the southern part of the state. Of the 2.4 million acre-feet of developed firm yield from SWP, 30 percent is used for

SKYWAYS MAGAZINE, MAY 1988



Lesotho Highlands, Africa.

Impacts of Water Transfer Schemes in California

The CVP and SWP water transfer schemes have had a number of serious and interrelated environmental impacts in both northern and southern California.

In the north:

The San Joaquin delta is a habitat for 25 percent of the state's warm water and anadromous sport fish and 80 percent of its commercial fishery. The large amounts of water pumped from the delta to southern California have contributed to: low fresh water outflows in dry years, intrusion of sea water, and high salinity in water supplies for farmers, urban communities, and wildlife. In addition, large-scale irrigation in the San Joaquin Valley has resulted in the conversion of 95 percent of the state's wetlands to farms, causing the migratory bird and waterfowl population to decline from 60 million in the late 1940s to 3 million in the early 1990s. Irrigation has also accelerated the leeching of selenium into wildlife refuge ponds, causing many deaths and deformations.

In the south:

The diversion by the city of Los Angeles of 4 of the 7 Mono Lake tributaries in the Owens Valley has caused the lake level to drop 40 feet, increasing the lake's salinity, threatening its unique shrimp and bird population, and uncovering stretches of the lake bed that contain high levels of alkali. During wind and dust storms, alkali particulates, which are harmful to the respiratory system, pose a major public health hazard.

irrigation in the San Joaquin Valley and 70 percent for residential, municipal, and industrial needs in the south.

The CVP and SWP improved the welfare of the state's farming communities and aided the growth of cities and industries. They also relieved pressure on depleted groundwater aquifers, which had caused severe land subsidence (up to 30–40 feet) and massive damage to urban and rural infrastructure. However, these schemes also created massive ecological changes throughout the state, especially in the San Joaquin Valley (see *Box*).

Remedial Actions and Reforms. As a result of improved knowledge about environmental impacts, growing public pressure, and use of programmatic EIAs to review the impacts of existing water resources operations, new water policies have been legislated. These policies are altering the operations of many old California water projects in order to restore damaged ecosystems. In particular:

- ◊ Since 1987, the San Francisco Bay Delta Hearings between state and federal regulatory agencies and major water operators have led to the development of a comprehensive ecosystems plan for protecting the ailing Sacramento-San Joaquin river estuary.
- ◊ The 1992 CVP Improvement Act fundamentally changed CVP operations and water allocation, making fish and wildlife protection and restoration one of the primary purposes of this water scheme. The Act reallocated 800,000 acre-feet to restore valley fisheries and wildlife, significantly altered the operations of CVP facilities (and added a \$100 million temperature control device), and established a \$50 million environmental restoration fund.
- ◊ In addition, court decisions in the 1980s and 1990s (the result of lawsuits by local and environmental interests) have amended the water rights of the city of Los Angeles and reduced diversions from the feeder streams in the Owens Valley to protect and restore Mono Lake. The lake level has increased by 4 feet.

This article discusses the environmental consequences of water transfer schemes.

Australia

The Snowy Mountains Hydroelectric Scheme in Australia was constructed between 1949 and 1974. It uses 16 major dams, 7 power stations, a large pumping station, 145 km of tunnels, and 80 km of aqueducts to collect and divert 98 percent of the inflows to the Snowy Mountains into the Murray and Murrumbidgee rivers for agricultural production and to meet urban demand in southeastern Australia, including Sydney and Melbourne. The scheme meets 5 percent of the southeast's total annual energy requirements and provides 10–33 percent of flows in the Murray and 25–60 percent of flows in the Murrumbidgee. Irrigated agriculture in the river valleys contributes 25–30 percent of regional output, income, and employment.

This scheme, like those in California, was constructed at a time when there was little concern about the environment. As a consequence, it too had serious ecological consequences.

In the exporting area, the diversion of the Snowy River and tributaries reduced natural flows to 1 percent of those before dam construction, altering habitats, species abundance, and biodiversity. The scheme also extended salt water intrusion into the estuary, impacting the estuarine lakes and the productivity of farmland on the flood plain.

In the importing area, the additional water contributed to destabilizing and eroding the river banks and increased wastewater discharges from municipal, industrial, and agricultural activities. This increased nutrient loads in the Murray-Darling river basin, particularly phosphorous and nitrogen. As a consequence, during the summer of 1991 the Darling River recorded the world's largest bloom of toxic blue-green algae, which extended for 1,000 km (see *Box*). The algae bloom depleted the dissolved oxygen in the water, resulting in massive fish kills.

Recent Projects in Developing Countries

In light of the environmental consequences of such early water projects, and growing public concern, the Bank and other donors now require that environmental impact assessments (EIAs) be performed for all water projects in developing countries. As the two cases below illustrate, however, EIAs by themselves still are not sufficient to mitigate major environmental impacts, since they are often carried out late in the planning process to justify a project after it has already been designed.

China

The Bank-financed \$400 million **Wanjiazhai Water Transfer Project** (WWTP), in its early stages of implementation in FY98, will serve the industrial mining cities in Shanxi province.

Water deficits in Shanxi have resulted in farmers irrigating with untreated industrial wastewater, industries conserving water at the expense of production, and the population not having sufficient water for regular hygiene. The project entails construction of a large dam (not Bank funded) and a Bank-funded water transmission facility, as well as implementation of institutional reforms, pollution control measures, and an industrial waste management and wastewater collection and treatment strategy. Its aim is to improve water quality and supply and reduce groundwater overdraft and saltwater intrusion into coastal cities, in order to enhance economic growth and relieve human distress.

The EIA carried out during project preparation determined that the benefits of the project, including improved public health and reduced pressure on local water resources, would outweigh its environmental and social costs: (a) resettlement of 54 individuals from 16 households and loss of land for 1,024 individuals; and (b) increased wastewater generated from the large volumes of water imported. Instream effects of the transfer are not likely to be significant. At full operation, the project will divert only 2 percent of the mean annual river flow and 5 percent of the flow in dry years. However, cumulative effects could be significant if downstream consumers use more water than they are allocated.

Southern Africa

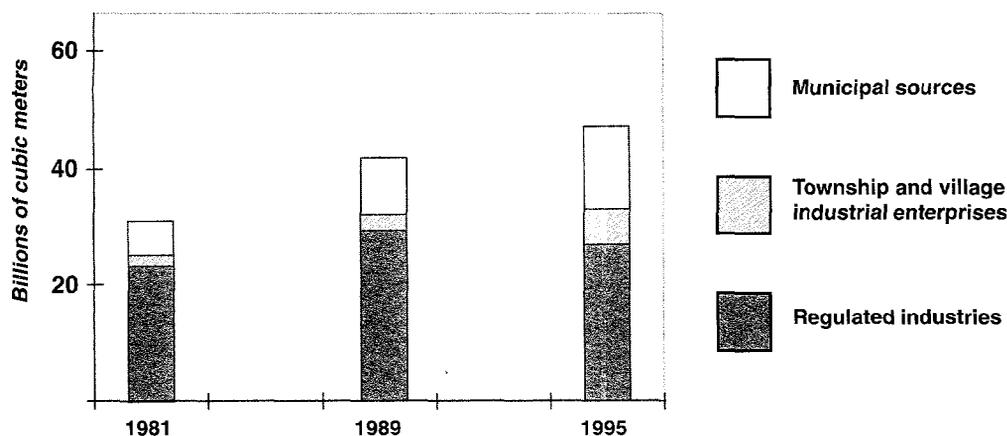
In 1986, the governments of Lesotho and South Africa signed a treaty to implement the **Lesotho Highlands Water Project** (LHWP), which will export water from the Senqu/Orange river in Lesotho to water-short Gauteng province, the

Toxic Algae Bloom as a Catalyst for Reform

The toxic algae bloom, as well as growing salinity problems in the Murray Darling basin, catalyzed efforts to reform the country's water sector, which began with an audit of water use in the river system. The audit found that water use would grow to 90 percent of the natural flows at the mouth of the Murray if policies were not changed. In response, the Murray Darling Basin Ministerial Council—in a major policy shift—instituted a permanent cap on water use in 1996. The cap was defined as the volume of water that was diverted from the Murray at 1993/94 consumption levels. The rest of the water was left for instream ecological needs.

In addition, the Murray Darling River Basin Commission, in conjunction with state and local land and water conservation agencies, has instituted innovative measures to improve land use and reduce waste discharge into receiving waters. It is also planning changes in the operations of dams and other water infrastructure to achieve more sustainable water use.

Wastewater Discharges in China Are on the Rise



Note: Wastewater discharges from township and village industrial enterprises in 1981 are estimated based on the 1989–95 increase.

Source: NEPA, *China Environmental Yearbook*, 1996.

industrial hub of South Africa. Under the treaty, South Africa will pay Lesotho royalties for water exported and is responsible for all project costs, including construction, operations and maintenance, and mitigation of social and environmental impacts. The project is being implemented in five phases. Phase 1A is completed and 1B began implementation in FY98 (the Bank is providing \$45 million of the \$2.4 billion for phase 1B).

Detailed EIAs were carried out for phases 1A and 1B, which determined that the economic benefits of the project would outweigh the environmental costs. Phase 1B alone involves resettlement of 360 households, destruction of habitats of endangered and threatened species, induced seismic activity, and the flooding of 39 hectares of wetlands currently under cultivation or used for grazing. In addition, in the exporting area, the mean annual flow at the confluence of the Senqunyame and the Senqu rivers will be reduced by 40 percent and the resulting downstream impacts are not known. The Lesotho Highlands Development Authority has commissioned a long-term study to determine required instream flows. In the importing area, significant impacts are expected on the Ash River, where the additional water could cause heavy scouring and erosion, affecting the riparian and aquatic communities.

Strengthening EIAs through Institutional Reform

These cases show that while environmental assessments are an important tool for identifying the negative impacts of major water projects, they are not sufficient to protect and preserve the water resource base, particularly if they are performed, as they typically are, after important project elements have been designed. Water policy reforms are needed to ensure that instream uses of water are given as high a priority as industrial, agricultural, and other uses, and that EIAs are required well before projects are designed. South Africa has been one of the forward thinking countries in this regard. Its new Water Law places a *higher* priority on water requirements for ecosystems than for most other uses, including energy, agriculture, and industry.

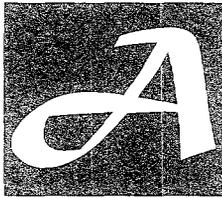
Sound water policy should require that projects include explicit criteria and approaches to protect and restore threatened and damaged aquatic ecosystems. Such policies are emerging in both industrial and developing countries, and will have far reaching consequences for the operations of water infrastructure and for the health of the environment.

¹ This article is a summary of a paper presented at the Fifth International Conference on Water Resources Management in Fortaleza, Brazil, on May 22, 1998. It will be expanded in a World Bank Technical Report.

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Environmental Economics and the Bank

John Dixon



As an economic institution dedicated to the reduction of poverty, the Bank makes an effort to adhere to sound economic principles in all its activities. In the past few years, these principles have been extended to include the environment. The Bank is increasingly concerned about the impacts of its activities on ecosystems and ecological sustainability, and has been creating tools and methods to understand the close linkage between economically and environmentally sustainable development.

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economically and environmentally sustainable development.

The Bank's 1992 *World Development Report*, issued for the Rio Earth Summit, focused on links between economic development and prudent environmental management. Since then, we have learned that sustainable development requires attention to three sets of factors—economic, environmental, and social.

Accordingly, the Bank has invested heavily in strengthening its capacity to carry out economic analysis of environmental issues. More staff are working on environmental economics and indicators at all operational levels, and there is a new environmental economics and indicators (EEI) team within the Environment Anchor of ESSD.¹ The efforts of environmental economists throughout the Bank have resulted in a rapid expansion of both applied and theoretical work.²

During the past year the EEI team has focused on four main areas: indicators, economic policies and the environment, trade and the environment, and training. The team is also exploring the concepts of "benefits transfer" to estimate values for environmental damage or benefits, and of placing an economic value on cultural resources.

Indicators Linking the Environment and Economics

The Bank has been actively working with OECD and the UN to develop about 20 core indicators to measure a

country's progress toward sustainable development. These include six indicators for environmental sustainability: whether a country has an environmental action plan, the number of people with access to safe water, annual freshwater withdrawals, biodiversity land area protected, energy efficiency, and carbon dioxide emissions. Indicators to measure air quality in cities, land use patterns, and coastal resource management also are being developed.

In addition, the EEI team has developed two indicators to track important changes in the environment: Total Wealth and Genuine Savings. Total Wealth measures four major types of capital—produced assets, natural capital, and human and social capital. This is a stock concept that reflects the aggregate resource base a country has for economic development. Genuine Savings is a flow concept that values changes in wealth (including the use and/or mismanagement of natural resources) over time by subtracting the value of resource depletion from traditional savings measures. A negative Genuine Savings estimate for a country is a clear signal that it is on an unsustainable development path. Work is presently underway with a number of countries (including China, Mongolia, and South Africa) to further develop and apply these indicators.

The *Figure*, page 49, shows that negative Genuine Savings is more than just a theoretical possibility. Plotting the savings rate net of the depreciation of produced assets against the value of resource depletion as a share of GNP shows that many countries—those to the right of the "marginal sustainability" line—in fact have negative Genuine Savings.³

Economic Policies and the Environment

Once indicators identify trends and potential problems, the next step is to design effective policies to address those problems. Over the past 10 years, the Bank and other agencies have introduced a number of innovative policy interventions. This experience has been pulled together by the EEI team in a report entitled *Five Years after Rio: Innovations in Environmental Policy*.⁴

The Bank has also identified four broad types of policy approaches: those that rely on existing

Trade and the Environment

One conclusion emerging from the April 1998 conference (see page 49) on trade and environment linkages was that they are quite country specific. Three different effects can be identified:

- The *scale effect* is due to greater economic activity following trade liberalization, which leads to increased environmental degradation.
- The *technique effect* results from increased transfers of modern technology and stricter environmental regulations and enforcement at higher income levels. This reduces environmental degradation per unit of output.
- The *composition effect* results from shifts in production. The shifts can be damaging or beneficial depending on whether they occur in more or less pollution-intensive sectors.

Since the scale and technique effects have opposite impacts, the key factor determining the final result is the composition effect; that is, the mix of goods produced in each country. An example of this was the trade liberalization between Indonesia and Japan, which increased industrial pollution in Indonesia (as a result of more economic activity) and, at the same time, decreased it in Japan (because of a shift in the mix of industries).

markets (pollution taxes, deposit-refund schemes); that create markets for improved environmental management (development of tradeable pollution permits); that rely on command and control (setting emissions levels, or mandating technology to be used); and that rely on an involved public (public compliance monitoring, green labeling, and other information-based systems). These approaches address two broad classes of environmental problems: “green” or resource management issues, and “brown” or pollution-related problems.

Another dimension to the economic/environment agenda is the difficult issue of demonstrating the link between macroeconomic policies and the environment. For example, how do particular changes in the economic structure—the removal of distorting subsidies or opening to capital flows—affect forests or water resources? The Bank is exploring this issue both at the regional level (as with work on the environmental impacts of the Southeast Asian financial crisis) and for individual countries (as in the preparation of country assistance strategies).

Trade and the Environment

The Bank’s innovative work on trade and the environment focuses on the impacts of trade liberalization. Does freer trade promote the relocation of polluting industries to countries with lower standards (the so-called “pollution haven” hypothesis)? Does eco-labeling of environmentally friendly products produce environmental changes? Do countries compete with each other to lower environmental standards so as to attract

investments (the “race to the bottom” hypothesis)? An international conference on trade and the environment, held at the Bank in April 1998, addressed many of these issues (see *Box*, page 48, for selected results.)

Environmental Training

The Bank has an active training program to disseminate environmental knowledge as it is developed. The recent merger of the Economic Development Institute (EDI) and the Learning and Leadership Center (LLC) offers exciting possibilities for joint training on environmental issues for Bank staff and their professional counterparts from member countries (see article on EDI/LLC, page 66).

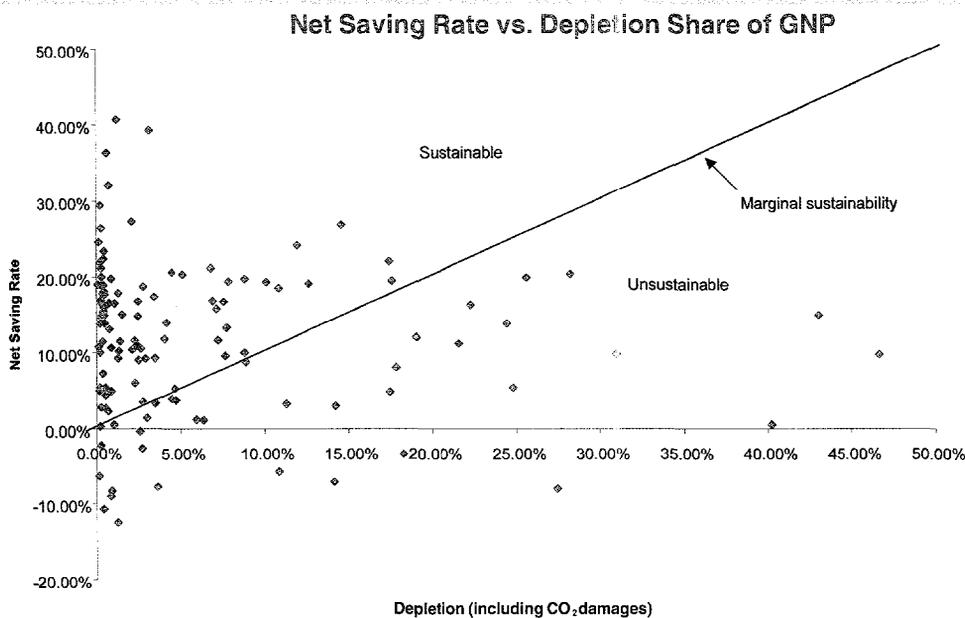
In July 1998, EDI/LLC presented a new core course on environmental economics and development policy, attended by more than 50 participants from around the world. It will be offered on a regular basis, making it possible for the Bank to disseminate best practice in applying economics to environmental management.

Conclusion

Recent advances in environmental economics have produced many useful tools. With such tools at our disposal, we find that what is usually needed is not more theory, but rather the disciplined application of these tools to the wide mix of environmental issues facing the Bank’s member countries. This is both the challenge to and the direction of the Bank’s work in environmental economics.

Environmental Economics

This article concerns the Bank’s innovative work in developing indicators to track environmental change.



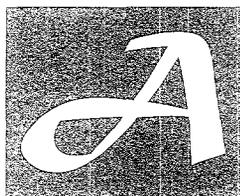
Note: Each dot represents the average net savings and depletion shares of GNP for individual countries over the period 1988–1993.

¹ Economically and Socially Sustainable Development Family.
² A sample of this work can be obtained by visiting these Bank web sites: www-esd.worldbank.org/EEL, and www.worldbank.org/nipr.
³ More on the wealth and savings estimates can be found in *World Development Indicators 1998* (World Bank); *Expanding the Measure of Wealth: Indicators of Environmentally Sustainable Development* (ESD Studies and Monographs, No. 17, 1997), and *Estimating National Wealth: Methodology and Results*, Environment Department Papers, No. 57, January 1998.
⁴ ESD Studies and Monographs, No. 18, 1997.

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Global Climate Change — Facing Up to the Challenge of Kyoto

Charles Feinstein, Odil Payton, and Kerri Poore



ADDRESSING the threat of climate change will require large reductions in greenhouse gas (GHG) emissions. Industrial countries are primarily responsible for the buildup, and so far only they have made commitments to cut emissions. Yet developing country emissions are also growing fast, and may exceed those of industrial countries by early next century. Thus the focus with regard to climate change will inevitably shift toward developing countries in coming years. The fundamental question for them will be how to reconcile economic growth, primarily fueled by coal, oil, and gas, with protecting the environment.

Industrial and developing nations alike will have to improve energy efficiency, reduce reliance on fossil fuels, and move toward renewable energy. Countries can achieve strong economic growth even as they pursue a lower-carbon energy path, and in fact, such a path will ensure that development is more sustainable. The Bank is working on several strategic fronts to help countries find effective climate change solutions that are consistent with their development priorities.

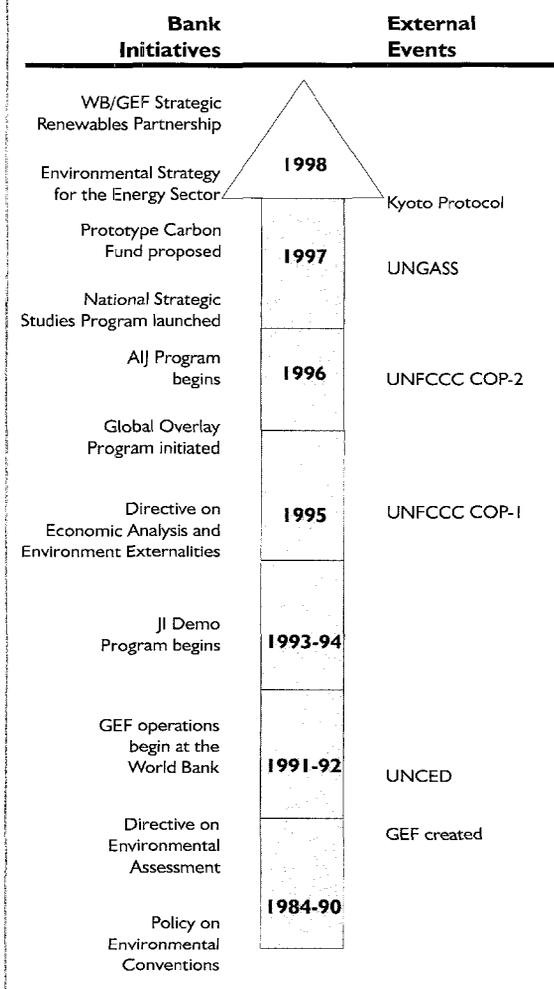
Changes in economic structure affect energy use and resulting

GHG emissions more than any other factor, so it is in a country's best interest to pursue actions with both economic and climate change benefits, such as eliminating subsidies for fossil fuels. To support such efforts, the Bank aims to invest in a country's energy sector only if that country has shown its commitment to efficiency improvements through *economic policy reform and market-based economic restructuring*, as well as *production and end-use efficiency*. With increasing evidence that the market is an effective means to address environmental problems, the Bank is working actively through IFC to help the private sector move toward environmentally sustainable practices. The Bank is supporting *competition and private sector investment*, enabled by *sound regulatory frameworks*, to stimulate efficiency gains in production, fuel substitution, and trade.

The Bank also encourages countries to address environmental issues as part of their larger development picture by *measuring and internalizing the cost of environmental damage from pollution and identifying environmentally friendly processes and technologies* that can be put into place early in the policy and investment cycle. The Bank and IFC are also working to mobilize new resources to support such investments. As this process develops, countries will be able to create synergies among local, regional, and global pollution abatement efforts (see *Box*). The Bank is also strengthening its own capacity to assess the risks and rewards of new technologies and of market-based approaches to environmental problems.

In addition, the Bank aims to increase its support for *long-term technological substitution and international market mechanisms to reduce the cost of greenhouse gas abatement measures*. In the long term, a major shift to renewables and low-carbon energy sources will be necessary to reduce emissions, but given the long lead times required to develop and commercialize new technologies, it is crucial to start now. The Bank recently began working with other partners, particularly GEF, to deploy such technologies, in addition to allocating more resources for existing options such as natural gas development (see *Box*). At the same time, the Bank is exploring ways to cut the cost of

Tracing the Evolution of Bank Climate Change Initiatives



Think Globally, Act Locally — Synergies in Addressing Local Pollution and GHG Gas Emissions in the Energy Sector

Many measures imposed to reform the energy sector or reduce local pollution also help to solve global environmental problems. And measures taken to reduce GHG emissions (adopting renewable energy technologies, improving energy efficiency) simultaneously reduce local and regional pollution. Designing the right response, however, presents a tough challenge; while benefits accrue to the whole world, the costs accrue to the country where the investment or policy change takes place.

But while improvements in economic and technical energy efficiency produce simultaneous local/regional and global environmental benefits, a tradeoff is not operative: benefits are produced in 1:1 relation, with a 20 percent efficiency improvement associated with 20 percent less fossil fuel consumption for a given output, 20 percent less local/regional pollution, and 20 percent lower GHG emissions.

Once these efficiency gains are fully exploited, however, the available options present quite different combinations of local/regional and global benefits. One option in the power sector would be to adopt coal plant emissions controls, perhaps flue gas desulfurization (FGD) for SO_x abatement. However, FGD has no benefits for greenhouse emissions. Alternatively, money could be invested in natural gas substitution. Gas reduces NO_x emissions by about 90 percent and SO_x and particulate emissions by nearly 100 percent, and it contains half the carbon content of coal per unit of primary energy. So, depending on how aggressively gas substitution is pursued, it should reduce GHG emissions without sacrificing local air quality compared with FGD.

Finally, any tradeoffs may cease to exist in the long run. In a future world of technologically advanced and affordable large-scale renewable supply options, perhaps developed in response to climate change concerns, local/regional and global environmental benefits would once again accrue simultaneously.

Sources: Pollution Prevention and Abatement Handbook 1998; IPCC Guidelines for National Greenhouse Gas Inventories, 1997.

addressing climate change through an international market for carbon emission offsets. Such a mechanism was accepted in principle at the Kyoto Conference, and the Bank will participate in the development phase as details of implementation are worked out.

The United Nations Framework Convention on Climate Change and the Kyoto Protocol

The United Nations Framework Convention on Climate Change (UNFCCC) was signed at the Earth Summit in Rio de Janeiro in 1992 and entered into force in 1994. UNFCCC provides a framework within which countries can begin to address the threat of climate change, but does not impose binding obligations to limit GHG emissions.

At the Third Conference of the Parties to the UNFCCC in Kyoto, Japan in December 1997, the Parties adopted the Kyoto Protocol. The Protocol represents an historic first step toward reducing GHG emissions, with 39 industrial countries and economies in transition—known as Annex 1 countries under the UNFCCC and as Annex B countries under the Kyoto Protocol—accepting binding commitments (or “quantified carbon emission limitation and reduction commitments,” QELROs) to ensure that their GHG emissions do not exceed their assigned amounts. Overall emissions will be reduced by at least 5 percent below 1990 levels in the commitment period 2008 to 2012. Developing countries do not assume any emissions reduction obligations at this time. Specific implementation decisions will be made at future Conferences of the Parties.

This article
concerns the
Bank's
involvement in
international
efforts to reduce
greenhouse gas
emissions.

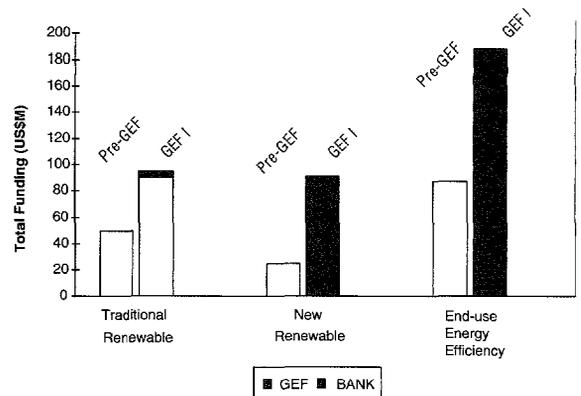
Bank/GEF Financial Commitments and Climate Change

Climate change is a key focal area for GEF, accounting for about 45 percent of its total allocations. Since its establishment, GEF has spent about \$100-125 million a year to address climate change in Bank projects.

Much of this support has been for two forms of energy development: renewables and end-use efficiency. Despite an overall decline in energy lending since the early 1990s (from close to \$5 billion in FY92 to \$2.15 billion in FY98), the share of lending for renewables and energy efficiency has been increasing. The figure shows the Bank's portfolio in traditional renewable energy (geothermal), new renewables (wind, solar, biomass), and end-use efficiency. In each case, Bank lending has increased concomitantly with GEF financing. This growth reflects the leveraging effect of GEF: each dollar of GEF climate change financing has stimulated about \$1.25 in associated Bank financing, as well as about \$4.00 in bilateral cofinancing, government funds, and private capi-

tal. The upward trend in the share of Bank lending for renewables and efficiency also reflects an increasing alignment with the priorities of GEF and the UNFCCC.

Annual Bank/GEF Commitments for Renewable Energy and Energy Efficiency



The Protocol allows countries to meet their QELROs on their own and through the following three flexibility mechanisms:

- ◆ *Joint Implementation (JI)*: Article 6 of the Protocol allows Annex B countries to transfer or acquire emission reduction units resulting from emissions reduction projects. The countries may also authorize legal entities, including the Bank, to participate, under the country's responsibility, in actions leading to the generation, transfer, or acquisition of emission reduction units.
- ◆ *The Clean Development Mechanism (CDM)*: The purpose of the CDM, as outlined under Article 12, is to help non-Annex B countries achieve sustainable development while assisting Annex B countries in complying with their QELROs. The CDM allows non-Annex B countries to sell certified emission reductions obtained through project activities beginning in the year 2000. The CDM will be supervised by an executive board and operate under the authority of UNFCCC. A share of the proceeds will be used to help particularly vulnerable developing countries meet the costs of adapting to climate change. Private and public sector entities can participate in CDM activities under the guidance of the executive board.

- ◆ *Emissions Trading*: Article 17 provides for the possibility of trading emission reduction and limitation obligations among Annex B countries. Trades are permitted only to fulfill the countries' commitments and must be supplemental to domestic actions.

While the Protocol obligates only Annex B countries to reduce emissions, developing countries have responsibilities as well. For example, under Article 10 they agree to formulate regional emission reduction programs that take account of the socioeconomic conditions of each country in the region, and to implement other measures, including market-based mechanisms, to address climate change.

Implications of the Kyoto Protocol for the Bank and Its Members

The Kyoto Protocol contains several provisions of significance to Bank operations. Its concern with energy efficiency and renewable energy technologies underscores the importance of the Bank's new environmental strategy for the energy sector, which calls for increased emphasis on energy efficiency, phasing out of market imperfections, and market-based mechanisms (see first item in Overview matrix) to encourage widespread use of renewable energy technologies.

The Protocol implies the following actions by the Bank and IFC:

- ◆ Increased integration of climate change considerations in Bank-country dialogues and development planning;
- ◆ Expanded mandate to transfer and implement efficiency and renewable technologies in member countries;
- ◆ Consistency of lending with Annex B country obligations;
- ◆ Enhanced capacity building activities in the area of climate change;
- ◆ Expanded role in financing climate change vulnerability/adaptation projects (see *Box* on Burkina Faso); and
- ◆ Exploration and near-term implementation of market mechanisms utilizing project-based emission reductions trading based on Articles 6 and 12, subject to UNFCCC guidance (see *Box* on Building Capacity).

The Future

The Kyoto Protocol has created a solid framework for addressing climate change, yet it needs considerable fleshing out. This will depend on continued political momentum and on increased financial resources to support the UNFCCC process.

Combining Adaptation and Mitigation — Burkina Faso Sustainable Energy Management Project

The Burkina Faso AIJ (Activities Implemented Jointly) project supports development of low and noncarbon energy sources. It promotes efficient carbonization techniques, community-based forest management, improved kerosene cooking stoves, and solar photovoltaic (PV) systems for rural communities. The project, which began in December 1996, is contributing to the sustainable use of 130,000 tons of wood for charcoal processing per year, resulting in the abatement of 1.5 million tons of CO₂ emissions over the six-year project life.

The CO₂ abatement, at a cost of \$1.66 per ton, will create alternative sources of income for communities, and strengthen local institutional capacity for natural resource management. Deforestation in Burkina Faso will be reduced. The introduction of PV systems will create social benefits such as access to safer drinking water and improved education and health conditions, as well as expanded market opportunities.

Building Capacity for Market-based Responses to Climate Change

Two Bank programs are helping member countries explore opportunities for trade in GHG reduction credits:

The pilot program on Activities Implemented Jointly (AIJ), initiated in 1996 under sponsorship of the Government of Norway, is experimenting with using market mechanisms to promote the environmental interests of Bank member countries. The program includes pilot projects in Mexico, Poland, India, and Burkina Faso (see *Box* at left), and has had considerable impact on awareness and capacity in these countries. It also involves extensive methodological research, active participation in international processes to develop trade mechanisms, and widespread dissemination of results.

The National AIJ/JI/CDM Strategy Studies Program (NASS) is sponsored by the governments of Switzerland, Finland, and Canada. Before the Kyoto Conference, the studies focused on countries with economies in transition. After the Clean Development Mechanism was established in Kyoto, they included developing countries. The studies are assessing the potential for trade in GHG reduction credits and identifying potential projects in the Czech and Slovak republics, Russia, Uzbekistan, Zimbabwe, South Africa, Argentina, Colombia, India, and the Philippines.

The Protocol will take effect 90 days after it is ratified by 55 parties to the Kyoto Convention, provided they represent at least 55 percent of total 1990 CO₂ emissions of all Annex B countries. A number of observers have commented on the implications of this trigger, and wonder whether the Protocol will ever enter into force in the face of substantial opposition from factions within key emitting countries. However, in the Bank's view such scenarios are not fatal, nor do they represent a rationale for inaction. Perhaps as significant as the legal requirements posed by the Protocol is the effect it is having on the awareness and attitudes of decisionmakers in both corporate boardrooms and government agencies.

The Protocol is a modest but important first step in a process that will continue for decades to come. The Bank is committed to actively supporting the UNFCCC and Kyoto Protocol by financing activities that support their goals, and by helping countries build capacity to carry out environmentally sound policies and sustainable investments.

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Social Development Update¹

Bonnie Bradford



HETHER considering the social impacts of the East Asia crisis, structural adjustment in Africa, privatization in Eastern Europe and the former Soviet Union, or the social costs and benefits of infrastructure and

large dams, the World Bank is increasingly concerned with the fact that to be sustainable, development must be broadly inclusive.

In recent years the Bank has embarked on a course of organizational and cultural change in order to focus on the eradication of poverty and support social development. These actions are anchored in a new paradigm of development: that without attention to the social underpinnings of development, it is difficult for economic growth and development to succeed—and virtually impossible for it to be sustained.

In 1997, World Bank President James D. Wolfensohn commissioned a Task Group to look at current social development initiatives and approaches, and recommend further actions to advance this work. Since the Task Group's *Social Development Report* (SDR) was issued on May 1, 1997, significant progress has been made.

One of the major initiatives cited in the Task Group Report was the January 1997 launching of the Social Development Family in the Environmentally and Socially Sustainable (ESSD) Network. The Social Development Family builds on the work of the former Social Policy and Resettlement Division of the Environment Department, and it works in close collaboration with the Environment and Rural Development families, also in the ESSD Network.

The Social Development Family provides technical guidance within the Bank and works in partnership with agencies outside the Bank on social development issues. It promotes social assessment, social analysis, and participatory processes in sector work and country assistance strategies; participation and community-based development; and substantive work on social inclusion, social capital, and civil society. The *Box* provides summaries of the major thematic teams

and focus areas of the Social Development Family.

At a regional level, members of the new Social Development Family designed and carried out a wide range of activities in FY98, many of which are still ongoing. For example, regional staff are:

Africa. Involving civil society in the design of Bank strategies, and assisting in a gender and poverty study for the Special Program of Assistance for Africa. Post-conflict work is also underway in a number of countries.

East Asia and Pacific. Developing a strategy to understand and help mitigate the social consequences of the current crisis in East Asia on a regional and country-by-country basis.

Europe and Central Asia. Focusing on the social impacts of transition, and fine-tuning country assistance strategies and poverty assessments to be more inclusive. An issues paper on the elderly is being prepared.

Latin America and Caribbean. Developing a Regional Urban Peace Program with a focus on reducing violence and its effects on poor communities, and designing a new rural violence reduction initiative in Colombia.

Middle East and North Africa. Addressing social concerns in public sector reform and carrying out regional economic and sector work on cultural heritage. A region-wide review of social inclusion also has been completed.

South Asia. Planning a study of gender-based violence and its economic and welfare consequences. A Poverty and Gender team has also been also formed with the PREM Network for conducting participatory poverty assessments.

During the past year, the Social Development Family also developed a number of products and programs identified as high priority for the Bank. We developed a strategy to guide Bank-NGO relations, worked to strengthen the Bank's capacity in post-conflict reconstruction, and supported a new cultural heritage initiative. To

“What we are seeing in the world today is the tragedy of exclusion. Our goal must be to reduce these disparities across and within countries, to bring more and more people into the economic mainstream, to promote equitable access to the benefits of development regardless of nationality, race, or gender. This—the Challenge of Inclusion—is the key development challenge of our time.”²

Focus Areas for Social Development

Social Assessment: Helps task teams incorporate social analysis and participatory processes into project design, address social issues, and assist clients in reaching the poor.

CAS/Macro-Social Analysis: Promotes stakeholder and institutional analysis as tools for aligning country assistance strategies (CAS) with the goals of poverty reduction, social inclusion, and sustainable development.

Participation: Promotes methods and approaches that encourage the involvement of stakeholders, especially the poor, in development initiatives that affect them.

Indigenous Peoples: Involves vulnerable cultural and ethnic groups in Bank-financed operations.

Resettlement: Helps identify, plan, implement, and monitor involuntary resettlement to minimize displacement and restore incomes.

NGOs and Civil Society: Works with NGOs to strengthen operational collaboration and encourage policy dialogue; supports government efforts to create an enabling environment for civil society organizations.

Post-Conflict Reconstruction: Supports conflict-affected countries in the transition from conflict to sustainable peace and development.

Culture in Sustainable Development: Supports living and material culture as a key element of social and economic development that results in poverty reduction, social inclusion, and environmental protection.

Two overarching concepts, institutions and social inclusion, help integrate the Family's thematic teams. The Family is developing a conceptual framework and techniques to better understand and identify institutions that promote inclusive and sustainable growth. The Family also develops policies and projects to include people who might otherwise be excluded from economic and social development.

Y. HADAR

Digging for water in a dry wadi bed, Karamoja district, Uganda.

support the expanded work program, the number of social scientists in the Bank is growing, and NGO and civil society liaison officers are on site in most resident missions.

Over the next year or two, the Social Development Family will focus on partnerships with other Bank networks on two major issues: inclusion and institutions (see *Box*). Work in these areas is well underway. The Social Development Family looks forward to a rich range of partnerships within the Bank and with member countries and country institutions to help expand understanding of these issues.

In short, considerable work on social development has been initiated in and by the Bank and

much progress has been made; but more work is needed to ensure that momentum is maintained to make Bank operations socially, as well as economically and environmentally, sustainable.

¹ This article is based on the *Social Development Update: Making Development More Inclusive and Effective*, Social Development Paper Number 27, May 28, 1998, prepared by the Social Development Family of the Bank's Social Development Department.

² World Bank President James D. Wolfensohn, "The Challenge of Inclusion," Annual Meetings Address, Hong Kong, China, September 23, 1997.

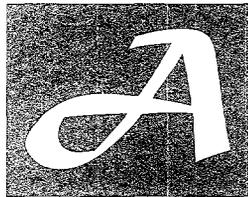
³ *Social Development: Results on the Ground*, Task Group Report, Social Development Paper Number 22, Social Development Family, World Bank, May 1, 1997.

This article notes the importance of cultural preservation, post-conflict resolution, and the involvement of marginal peoples in development projects.

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The World Bank and Forests

Ken Newcombe, Juergen Blaser, and Kerstin Canby



ALL over the globe, natural forests are being lost at a rate unprecedented in human history. Large parts of formerly untouched boreal forests have become the object of intensive timber exploitation in the past few years. Old-growth forests in temperate climate zones, most of them located in industrial countries, continue to disappear. The tropical rain forests, spread over more than 60 countries, are diminishing at a rate of around 15 million hectares a year because of the human need for food, timber, energy, minerals, and other resources. With the destruction of the forests—

estimates are as high as two-thirds of the planet's original forest cover—has gone much of the biodiversity of the planet, since forests are home to at least half of all life forms on earth.

There is, however, growing recognition that wise forest management is critical to sustainable development, particularly where the local or national economy is based directly on the use of forest resources. The economic development of some Southeast Asian countries, for example, depends on the exploitation of their rainforests (dipterocarp forests), and local communities in tropical rural areas depend heavily on forest

resources for their livelihood. In addition, forest ecosystems have major impacts on soil, water, and coastal marine productivity over very large areas. They also influence carbon cycles, which play a crucial role in local and global climate regulation.

A New Approach to Forest Management

Although forest management has been high on the international agenda for two decades, little has been achieved so far. The Bank is now fundamentally reviewing its approach to forests issues, in

recognition of the fact that saving the forests depends not only on changing the behavior of all critical stakeholders, but also on partnerships to accomplish what no country, government agency, donor, or interest group can do alone.

In a speech before the United Nations General Assembly Special Session (UNGASS) in June 1997, World Bank President James Wolfensohn committed the Bank to playing a leading role in improving forest conservation and management. The ambitious “stretch” targets for improved forest management and ecosystem conservation (see *Box*) set forward in that speech have helped to catalyze the international conservation and development communities and set the stage for a number of important partnerships, including public-private partnerships, to achieve these goals. The Bank is now working to strengthen relationships with multilateral organizations and NGOs and to facilitate forest initiatives at the global and national levels. Some of these initiatives are described below.

Current World Bank Program on Forests

Forests Portfolio. The Bank forests portfolio¹ is estimated at roughly \$4 billion. The projects cover a wide range of forest activities including investments in collaborative forest management and social forestry, forest institutions capacity building, protected areas, and technical assistance for policy reform and for regulatory and enforcement systems.

In addition to directly financing projects, the Bank is giving increasing attention to linking policy dialogue and its major country-level adjustment interventions to its specific forests involvement, and to resource mobilization from GEF, IFC, and other donor sources. This approach allows the Bank to pursue powerful reform proposals that eliminate unfair concession policies and perverse market incentives such as transport subsidies and underpriced timber, which can rarely be justified on the grounds of efficiency or equity. The Bank also enters into partnerships to complement its strengths and compensate for its weaknesses (see *Box*).



Reforestation, Madagascar.

J. BLASER

TARGETS FOR FOREST CONSERVATION AND IMPROVED MANAGEMENT

The Targets for the year 2005

- An additional 50 million hectares of new forest protected areas, plus a comparable area of existing reserves under effective protection;
- 200 million hectares of independently certified improved forest management^a—100 million hectares each in tropical and temperate/boreal forests.

The World Bank–WWF Alliance for Forest Conservation and Sustainable Use

To achieve the targets, the World Bank and World Wide Fund for Nature (WWF) have agreed to work together to form a broad-based Alliance for forest conservation and sustainable use. The organizations recognize that their mutual concerns for biodiversity conservation, deforestation, forest degradation and climate change can be more effectively addressed through a strategic partnership that takes advantage of complementary skills to address common goals. Both organizations are convinced that these targets could be a rallying point for a broad-based initiative involving many partners and stakeholders who will see it as a way to halt the ever intensifying cycle of forest destruction.

The Targets Explained

Similar types of targets had already been discussed in international fora and adopted by WWF. For adoption by the World Bank, initial global targets for forest protection and improved forest management had to be very significant, considering the scale of the problem. They also had to be achievable (even if with difficulty) within a reasonable timeframe. The targets are intended to be short term (7 years) and interim—even more ambitious longer-term goals will still need to be discussed and developed in partnership with other stakeholders.

Protected Area Target: Of the 3,300 million hectares of forests remaining on Earth, only 6 percent are in legally protected areas. Many of these exist only on paper, lacking effective management and protective infrastructure in place on the ground. Achieving the 7-year protected area target would represent a significant increase in the area under effective protection in all IUCN categories, and would make a meaningful contribution to long-term biodiversity conservation.

Improved Forest Management Target: This target aims to improve the overall biological, social, cultural, and long-term equity and economic outcomes of existing forest timber operations. Achieving the target would mean improved management in approximately 10 percent of existing production forests worldwide by 2005.

Note:

^a The interpretation of independently certified forest management for the purpose of these targets is provided in a “**Guidance Note for Improved Forest Management & Certification Target,**” issued jointly by the World Wide Fund for Nature and the Bank. The Guidance Note, available on the Alliance website, recognizes that the steps toward this goal will vary considerably from one country and region to another. In some countries, export markets are not significant enough to provide an incentive for improved forest management in the domestic forest sector. In these cases, alternate systems of independent monitoring and verification, as well as standards, need to be agreed with clients and stakeholders as appropriate. The Guidance Note provides a set of criteria that any system of certification or independent verification must meet, in order to be acceptable for scoring against Alliance targets.

This article describes the Bank's efforts to protect the world's forests and promote the sustainable use of forest resources.

“... (T)he economic costs of deforestation are astronomically high.... In the end, the burden of these costs falls most heavily on those who can least afford it: the poor of the developing world. Too often, conservation is depicted as a concern of the rich, a luxury the poor cannot afford. This view is tragically short-sighted.”

— James D. Wolfensohn,
President, World Bank
 and Kathryn S. Fuller,
President, World Wildlife Fund-US.



J. BLASER

World Bank Forest Policy Review and Sector Strategy²

To better direct its assistance to the forests sector, in FY98 the Bank began a review of its forest sector policies and issues, and its own historical role in the sector. This review, undertaken by the independent Operations Evaluation Department, is highly consultative, as will be the development over the next 18 months of a forward-looking strategy to determine how the Bank can best assist forest management and conservation in collaboration with other major stakeholders.

The Forests Partnerships Program

The Bank's Forests Partnership Program is the umbrella under which a number of joint initiatives are being carried out. Among them:

- ◆ **The World Bank-World Wide Fund for Nature Alliance³** (WB-WWF Alliance) was launched in April 1998. Within this framework, the Bank and WWF will work with governments, the private sector, and civil society to significantly reduce the loss and degradation of all forest types worldwide. The Alliance will promote forest

conservation and the adoption of international best practices in forest management.

- ❖ **Bilateral partnerships** with donors, foundations, and NGOs are being pursued to build the Bank's technical capacity, particularly through the exchange and training of staff, to help implement program initiatives. Staff exchanges are in place with the MacArthur Foundation, WWF, and Swiss Development Cooperation/Intercooperation of Switzerland, and are anticipated for Germany and Finland.
- ❖ Within the framework of the recently created **Intergovernmental Forum on Forests (IFF)**, the **Interagency Task Force on Forests (ITFF)** is the vehicle for transforming the Forum's recommendations into concrete actions. Multilateral partnerships within the ITFF, including with FAO, UNDP, UNEP, the International Tropical Timber Organization (ITTO), and CIFOR (Center for International Forestry Research), will enhance the Bank's strategy in the forest sector.

The Forest Market Transformation Initiative (FMTI)

The FMTI is a Bank initiative designed to promote dialogue and pilot activities to assist in turning market forces toward more forest-friendly practices. Three major FMTI activities are described below.

Forest Trends is a strategic coalition of the private sector, financial institutions, NGOs, and research bodies that believe market forces will play an increasing role in making the use of forest products ecologically, economically, and socially sustainable. Formally organized in June 1998 with commitments from the World Bank and the MacArthur Foundation and temporarily hosted by the World Resources Institute in Washington DC, Forest Trends will provide credible, balanced information about best practices in forest management and improved technologies to reduce the demand for virgin fiber. It will also support and encourage sustainable cooperative forest-related activities, and provide a neutral forum for the resolution of disputes.

Recognizing that the private sector has a critical role in stopping forest degradation and loss, the **CEOs' ad hoc Forum** met twice in 1998 to promote dialogue between the CEOs of international forest industries and environmental NGOs.

Participating companies include Weyerhaeuser and Caterpillar of the United States, Samling of Malaysia, *Grupo Roda* of Bolivia, and Danzer and ISOROY operating in Africa. Participating NGOs included WWF, IUCN, the Nature Conservancy, Conservation International, Greenpeace Russia, and *Centre pour l'Environnement et Development* (Africa). In January 1998 the Forum established a series of working groups to produce recommendations on conservation and forest management. These recommendations can be seen at the website <http://www-esd.worldbank.org/forestry/umbrella/index3.htm>. The Forum continues to be ad hoc, and will exist only as long as it continues to be an effective vehicle for dialogue and progress.

The Carbon Forestry and Land Use Management Action Plan, to be implemented by the Bank in collaboration with a range of governmental and nongovernmental partners over the next decade, was created in response to a request from Costa Rica and Mexico for the Bank to be more proactive in defining the development benefits of trade in forest and soil-based carbon offsets.

The plan includes an evaluation of the policy and related market development issues that need to be addressed to gain credibility within the framework of the Kyoto Protocol (see article on Climate Change, page 50, for more on the Kyoto Protocol). Elements of the plan include research on the local economic benefits of generation and sale of carbon emissions reductions to smallholder agriculture; improved forest management and conservation; and demonstration projects to develop baseline determination, monitoring, certification, and offset verification tools and procedures. A note on policy issues relating to different classes of forest-based carbon sequestration activities and how these might be addressed will be issued in November.

¹ The portfolio includes IBRD/IDA, World Bank-implemented GEF, and G-7 Rainforest Trust Fund projects, as well as forestry components within other sectoral projects.

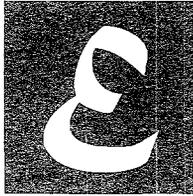
² More details on the Bank's forest policy review and sector strategy can be found at <http://www-esd.worldbank.org/forestry/umbrella/index3.htm>.

³ WWF is known as the World Wildlife Fund in the United States and Canada.

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Safeguards Update

Colin Rees



ENVIRONMENTAL and social policies instituted by the Bank over the past 10–15 years have helped to ensure quality and consistency within its investment portfolio. Scrutiny by NGOs and others of Bank operations—especially the Narmada Dam in

India and other contentious projects—has reinforced the importance of strict compliance with these policies (see *Box*), as has the creation of the Inspection Panel in the early 1990s in response to criticism of environmentally damaging projects. These policies include the Bank's important environmental and social "safeguard" policies, designed to protect those who might be adversely affected by Bank-funded operations.

The responsibility for policy compliance in the Bank rests with the six regional vice presidencies, consistent with the effort to devolve decisionmaking and resources closer to the operational front line. (This approach differs from that of IFC, which for business reasons has chosen to centralize the clearance of activities that come under its safeguard policies.) With the Bank's devolution of responsibility, however, comes the need to ensure consistent compliance with the safeguard policies across the six regions. Thus, the Bank is taking steps to monitor implementation of the safeguard policies and related procedures. These include:

- ◆ Providing dedicated, nonfungible resources to the regions, the Environmentally and Socially Sustainable Development (ESSD) anchors, and the Legal Department to strengthen their review, advisory, and monitoring activities.
- ◆ Conducting comprehensive, random audits (performed by the anchors in cooperation with the Legal Department, the Quality Assurance Group, and the regions) of the safeguard aspects of representative projects at the Project Concept Document, Project Appraisal Document, and supervision stages.
- ◆ Ensuring that regional staff address concerns promptly if an audit determines noncompliance with a safeguard policy. A task force will develop a framework to facilitate greater accountability,

including the possibility of sanctions, for staff and managers responsible for noncompliance identified through the audit process.

- ◆ Putting in place quick response procedures to promptly resolve issues that may arise between or among the anchors, regional staff, and/or the Legal Department.
- ◆ Strengthening support for quality assurance by the ESSD anchors through the formation of a Safeguard Compliance Unit; this will include technical support for project preparation and implementation (available within the next few months), advice on policy issues, and mandatory training of task team leaders on safeguards.

In addition, a number of existing functions managed by ESSD and others will be strengthened to enhance quality assurance throughout the Bank Group. The ESSD anchors will help identify performance/quality issues to be investigated by the Bank's Quality Assurance Group; support quality assurance training and institutional capacity in countries with the largest portfolios and where internal capacity is weakest; and disseminate good practice information to Bank Group staff and clients through the knowledge management infrastructure.

Arrangements to implement an audit system are also underway. The proposed system defines interventions to ensure compliance and quality assurance and the application of criteria for selecting projects to audit; it also specifies levels of auditing effort and organizational and staffing arrangements. The Safeguards Compliance Unit will be charged with overseeing all auditing activities and coordinating operational, training, staffing, and budgetary arrangements across the ESSD Network and reporting to senior management on a regular basis.

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This article

describes the

Bank's efforts to

ensure that all

projects include

protections for

natural habitats,

forests, waters,

indigenous

peoples, and

cultural sites.

World Bank Environmental and Social Safeguard Policies (Operational Directives and Operational Policies)

OD 4.01 Environmental Assessment (EA) (to be issued as OP/BP/GP 4.01)

This directive outlines Bank policy and procedures for the environmental assessment of Bank lending operations. Environmental consequences should be recognized early in the project cycle and taken into account in project selection, siting, planning, and design by preventing, minimizing, mitigating, or compensating for adverse environmental impacts and enhancing positive impacts. EA includes the process of mitigating and managing environmental impacts throughout project implementation.

OP 4.04 Natural Habitats

The Bank does not support projects involving the significant conversion of natural habitats unless there are no feasible alternatives for the project and its siting, and comprehensive analysis demonstrates that overall benefits from the project substantially outweigh the environmental costs. If the EA indicates that a project significantly converts or degrades natural habitats, the project must include mitigation measures acceptable to the Bank.

OP 4.36 Forestry

This policy statement provides guidance to Bank staff involved in forestry projects, detailing that the Bank will not finance commercial logging operations or acquisition of equipment for use in primary moist tropical forests; in forests of high ecological value, the Bank will finance only preservation and light, nonextractive use of forest resources. Objectives are to provide for a sustainable stream of direct or indirect benefits to alleviate poverty and to enhance community income and environmental protection.

OP 4.09 Pest Management

This policy supports safe, effective, and environmentally sound pest management. It promotes the use of biological and environmental control methods. In Bank-financed projects, pest management is carried out by the borrower in the context of the project's environmental assessment. An assessment is made of the capacity of the country's regulatory framework and institutions to promote and support safe, effective, and environmentally sound pest management.

OP 4.12 Involuntary Resettlement

Involuntary resettlement as used in this policy covers both (a) the involuntary displacement (physical and nonphysical) of affected people that arises from change in land or water use, loss of productive assets, or loss of income or means of livelihood, whether or not the people must move to another location; and (b) the measures for mitigating the impacts of displacement. The policy applies whether or not the Bank is financing the part of the project that may require involuntary resettlement, and it covers resettlement resulting from activities that are not part of the Bank-financed project but are necessary to achieve the objectives of the project. Displaced persons are assisted in their efforts to improve their former production levels, income-earning capacity, and living standards, or at least restore them to the levels they would have been without the project.

OD 4.20 Indigenous Peoples

This directive provides guidance to ensure that indigenous peoples benefit from development projects, and to avoid or mitigate adverse effects of Bank-financed development projects on indigenous peoples. Measures to address issues pertaining to indigenous peoples must be based on the informed participation of the indigenous people themselves.

Operational

Policy Note

No. 11.03 Management of Cultural Property in Bank-Financed Projects (to be issued as OP/ BP/GP 4.11)

Bank policy is to assist in the preservation of cultural property where it is part of a Bank-financed operation, and to avoid its destruction. The Bank normally declines to finance projects that will significantly damage irreplaceable cultural property, and assists only projects that are sited or designed to prevent such damage.

OP 4.37 Safety of Dams

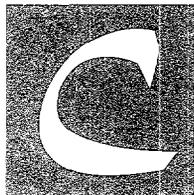
For large dams (15 meters or more in height), the Bank requires: reviews by an independent panel of experts throughout the investigation, design, and construction of the dam and the start of operations; preparation and implementation of detailed plans; and periodic inspections of the dam after completion.

OP 7.50 Projects on International Waterways

Under this policy, the international aspects of Bank-supported projects on international waterways projects are dealt with at the earliest possible opportunity and, where appropriate, other riparians are notified of the proposed project and its details. Any proposed project's potential to harm other riparians through deprivation of water, pollution, or otherwise is determined and affected riparians are notified.

Developing Partnerships for Effective Pollution Management

David Hanrahan, David Wheeler, Michelle Keene, and David Shaman



CONTROL of pollution cannot be achieved without laws and regulations, but legislation alone is rarely enough to produce major improvements in environmental performance in most of the Bank's member countries. There are limited resources available for inspections, monitoring, enforcement, and prosecution of offenders, and in the absence of sufficient government pressure, many regulations are implemented unevenly or not at all.

The Bank is working with many countries to increase and upgrade their regulatory frameworks, but there is a growing acceptance that this is a long-term task. In any case, moves to downsize government will make it difficult to rapidly increase the number of environmental regulators. At the same time, there is a growing appreciation that even in industrial countries, environmental legislation is just an initial step in the long and complex process of creating a social consensus—backed by legal instruments—on what is acceptable environmental behavior.

The initial step away from a purely command and control approach in the 1980s was the use of market-based or economic instruments to control the behavior of polluters. But while such instruments were found to be effective in some cases, they are ineffective in others, and the administrative and information requirements are often high. In the search for other options, it has become increasingly clear that government is only one player in the complex set of interactions that defines environmental management, and that effective partnerships are needed at all levels to achieve environmental goals. Such partnerships are being driven in part by the increasing openness of many economies and the expanding role of the private sector, which has been instrumental in forging a collaborative approach between regulators and industry—one that balances more flexible regulation with more targeted and effective enforcement and with market-driven incentives for improved environmental management.

While there is no substitute for an environmental regulatory regime, such partnerships—involving

government, industry, and the public—are helping to create innovative pollution management tools that encourage and support environmentally sustainable development practices. These tools include:

- ◆ Pollution inventories
- ◆ Corporate environmental reporting and information dissemination on firm performance
- ◆ Cleaner production techniques
- ◆ Environmental management systems
- ◆ Greening of the supply chain
- ◆ Negotiated agreements between regulators and industry.

Negotiated agreements between regulators and industry help to translate regulatory requirements into implementable terms, based on popular support. The other tools listed above target industrial environmental improvements by strengthening public and private sector capabilities through partnerships with external players, including universities, institutes, and other centers of expertise.

International experience has shown that consultation with both industry and the public in the design of environmental policies helps to ensure that the policies are feasible and can be successfully implemented. Such collaboration can also facilitate implementation of existing environmental regulations, where large gaps frequently exist between regulatory requirements and actual performance. This is particularly true for local environmental issues, where public participation can contribute local knowledge and build a stronger commitment to solutions. Similarly, consultation with industry can help regulators identify more cost-effective approaches to achieving environmental goals. In addition, partnerships that link centers of expertise and knowledge in dealing with pollution management issues can significantly enhance the ability of individual facilities to effectively deal with such challenges.

The Bank's portfolio increasingly reflects the growing importance of such partnerships. In Guadalajara, Mexico, for example, the Bank assisted a pilot in which large companies (some of

“As we progress in managing pollution, we are moving from purely adversarial systems to using a range of incentives and other approaches to achieve environmental goals.”

David Hanrahan
Urban, Industry, and
Energy Management
Program Team Leader,
Environment Family

which were multinationals) mentored some of their smaller suppliers (small and medium enterprises; SMEs) as they implemented environmental management systems (EMS) to try to improve their environmental performance (see *Graphic*, page 65). The Bank and the large companies provided the SMEs with funding for EMS training and implementation support, which was delivered by a team of international and national consultants, including experts from two local universities. The incentive for the SMEs to participate was largely their desire to maintain relations with their buyers—the larger companies. The incentives for the mentor companies included enhanced competitiveness and improved quality of products through enhanced supplier performance. With the success of this pilot, momentum has been created throughout many parts of Latin America for improving the environmental performance of SMEs. Colombia, El Salvador, Argentina, and Brazil all have requested Bank assistance in replicating this approach.

The Bank is now working in Argentina to bring national and local regulators together with private industry to develop consensus-based environmental goals, targets, and solutions. Under this project, the Bank is encouraging industries and regulators to form partnerships with outside organizations, including universities, NGOs, and other experts, to share experiences in improving environmental performance and develop negotiated agreements and other consensus-based means of achieving environmental goals.

Colombia provides an example of collaborative work on economic instruments for pollution control. The Environment Ministry developed a program under which representatives from municipalities, industry, and regulatory agencies negotiate pollution reduction targets for biochemical oxygen demand (BOD) and total suspended solids (TSS) in major river basins. Starting from a common national charge rate, regions will increase their charges each semester until their targets are reached. Although they initially were skeptical, many Colombian industrialists now support the program because they appreciate its flexibility. They are free to adjust

their own operations as they see fit, as long as they pay for their emissions. However, many cost-conscious managers will likely choose to invest in pollution control, because the base charge provides a powerful incentive to abate. An FY98 evaluation by the Bank's Development Research Group's industry-environment team (DRGIE) of cases where pollution charges were implemented suggests that the program is beginning to work, since BOD and TSS emissions from several large factories have fallen sharply in the face of stiff pollution charges.

The Bank is also supporting the use of negotiated compliance agreements between industry and government as part of the **Second National Environmental Project in Brazil**. And the Bank is also promoting partnerships through its support of privatization (see *Box*).

The Privatization-Environment Link

The Bank's support of privatization is helping to forge public-private partnerships to achieve environmental goals. Privatization offers tremendous opportunities to improve both commercial and environmental performance, especially as governments integrate environmental goals into their privatization efforts. The Bank's portfolio increasingly reflects this important nexus between public and private sector efforts to improve environmental performance. In Bulgaria, for example, the Bank is supporting efforts to privatize a large copper smelter by facilitating private investments in the company, while simultaneously reducing hazards caused by past pollution and contributing to improvements in the environmental performance of the plant.

In addition to promoting partnerships, the Bank continues to refine methods for estimating the benefits and costs of pollution control and testing the effectiveness of different regulatory instru-

This article says that public-private partnerships can help create consensus for achieving environmental goals.

ments. Collaborative projects between Bank operations and environmental agencies in Asia and Latin America have helped the DRGIE team understand existing regulatory practices, industry's environmental performance, and the cost of pollution abatement. This has enriched the team's work with environmental agencies and its contribution to the design, implementation, and evaluation of new approaches to pollution regulation. The team has focused particularly on economic instruments, public information strategies, and benefit-cost assessment of regulatory priorities.

In addition to benefiting the environmental agencies in many developing countries, including Brazil, Mexico, Colombia, China, Indonesia, and the Philippines, the team's collaborative work has given it unprecedented access to new information and has promoted many new research initiatives. China provides an excellent example: a wealth of new data has permitted econometric research on the impact of China's pollution charge system, variations in compliance and enforcement across provinces, and the role of citizen complaints in

pollution regulation. Policy dialogue in FY98 between the Bank and the Chinese government has incorporated the results, which suggest that the welfare of China's citizens would be improved by substantially higher pollution charges.

Other policy and research initiatives have shown that regulators are not the sole source of pressure on plants to improve environmental performance. Communities and market agents, ignored by traditional regulatory models, are now recognized as playing important roles. Communities that are richer, better educated, and better informed find ways of enforcing environmental norms even if formal regulation is weak or nonexistent. DRGIE research carried out in FY98 also suggests that international and local investors already include environmental performance in their assessment of financial risk (see *Box* for more on DRGIE research). Stock markets in Latin America and Asia adjust the valuation of publicly traded firms by 5–15 percent in response to media reports about polluters. This provides a clear, powerful incentive for improved environmental performance.

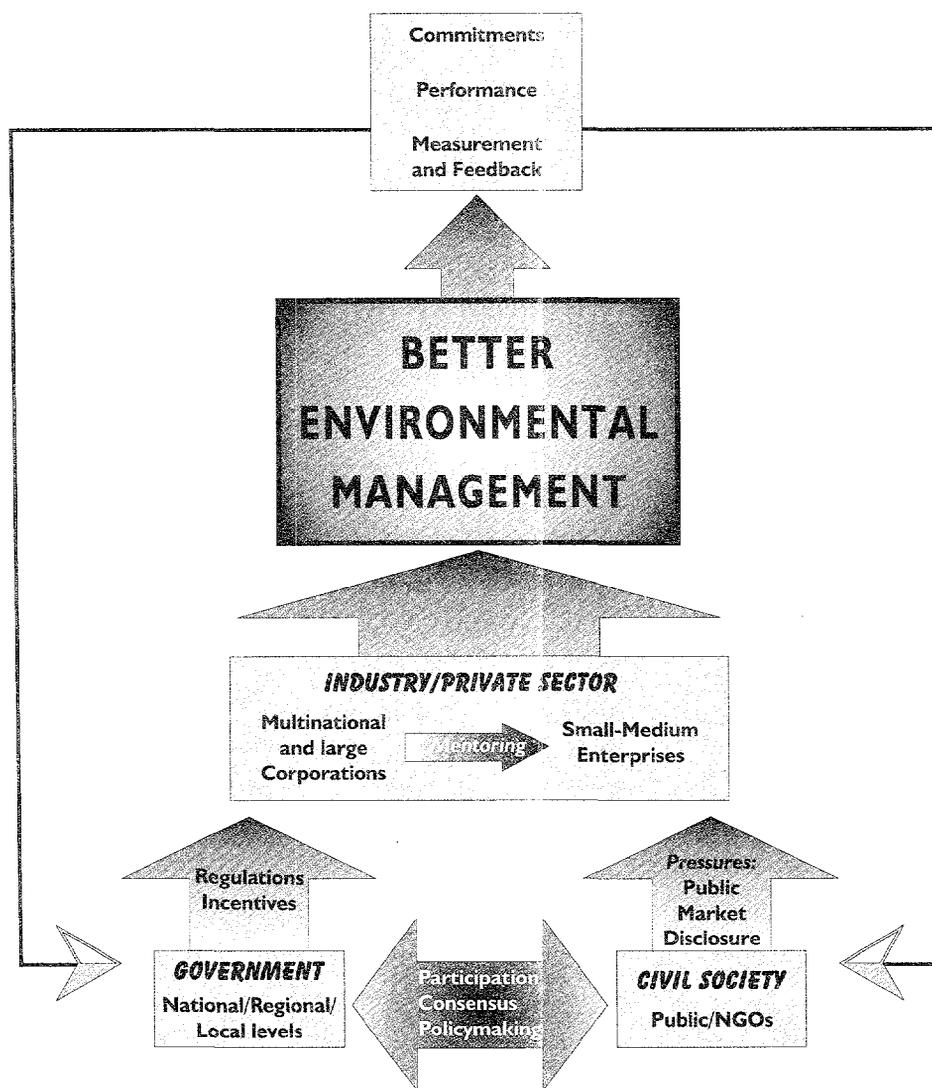
KNOWLEDGE MANAGEMENT AND POLLUTION

As result of the Bank's increasing number of links to outside organizations, we are improving our websites. A core site providing information on pollution management and abatement is being developed to provide links to relevant work inside and outside the Bank. This pollution site will be soon be accessible through the World Bank home page (www.worldbank.org).

For information on DRGIE research and collaborative programs, visit the New Ideas in Pollution Regulation (NIPR) website (www.worldbank.org/nipr). The NIPR site houses numerous research papers, data sets, and information kiosks on industrial pollution regulation and control issues.

Finally, as a way of bringing the Bank's knowledge and experience into wider circulation, the Environment Family published a revised edition of the *Pollution Prevention and Abatement Handbook* in late summer. The process by which this *Handbook* was drafted and compiled reflects the new approach of developing partnerships for more effective pollution management. Industry groups, individual specialists, and governments all played an essential role in completing this document, which provides practical advice on promoting cleaner and more productive industry.

Environmental Management Involves Multiple Players



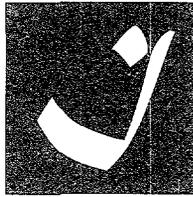
The Bank, more broadly, is also beginning to take a more proactive role in developing partnerships with outside organizations and agencies in order to benefit from their experience and knowledge and more effectively achieve program goals. We are continuing to share ideas on pollution management and to learn from others, including

organizations such as Resources for the Future and the World Resources Institute. We are also increasingly engaged in dialogue with representatives from the private sector to assist member countries in developing the most efficient and cost-effective solutions to pollution management.

David Hanrahan of the Environment Family can be reached at (202) 458-5686, fax (202) 477-0565. David Shaman and David Wheeler of the Development Economics Department can be reached at (202) 473-3779, and (202) 473-3401, fax (202) 522-1158.

Sustainable Development Capacity Building Initiatives at EDI/LLC

EDIEN Staff



In conjunction with the Bank's efforts to become a knowledge-based development institution, the Economic Development Institute (EDI), which has trained participants from member countries, merged in FY98 with the Learning and Leadership Center (LLC), which has been responsible for staff training. The resulting sharper focus on selected themes, including the environment, has put EDI/LLC in the position to reach broader audiences through new technologies and partnerships, to better deliver core policy and skills training, and to promote knowledge networks.

EDI/LLC's Environmental and Natural Resources Division (EDIEN) promotes capacity building in the environmental, health, and social dimensions of development. Its program is organized around three cross-cutting themes: urban environment and pollution, sustainable land use, and water resources management. Within these themes, priority is given to issues surrounding the often difficult tradeoffs between development and the environment.

URBAN ENVIRONMENT AND POLLUTION

The goal of EDIEN's Urban Environmental and Pollution team is to strengthen the capacity of central and local governments, the private sector, and civil society to manage the environmental consequences of rapid urbanization and economic growth. This team also promotes understanding among these key stakeholders of the importance of shared responsibility and collaboration in addressing such challenges, including through public-private partnerships (see *Developing Partnerships for Effective Pollution Management*, page 62).

Key programs:

- ◆ Pollution Management
- ◆ Decentralization and Strengthening of State and Local Environmental Agencies
- ◆ Urban Air Quality Management in Latin American Cities
- ◆ Urban and Industrial Environmental Management.

Collaborating for Cost-Effective Pollution Management

October 26-28, 1998, Washington DC

This seminar will bring together senior government and private sector representatives to highlight successful collaborative approaches and lessons for:

- enhancing profitability through responsible environmental management;
- designing environmental information disclosure programs;
- managing environmental liability and related issues; and
- removing barriers to and promoting incentives for environmental innovation.

An important outcome of the seminar will be an action plan to establish networks and focal points for encouraging public-private partnerships for pollution management in various countries.

The Clean Air Initiative in Latin American Cities

December 3-5, 1998, Washington DC, and First Semester 1999, various Latin American cities

The program aims to bring together development agencies, local leaders from the public and private sectors, NGOs, and academics from cities facing significant air pollution problems to share experiences and propose ideas and actions to improve urban air quality. The initiative will:

- facilitate the sharing of technical knowledge and experience among participating cities to improve urban air quality cost-effectively;
- promote action plans based on the participation of local stakeholders and the private sector;
- facilitate technical and financial assistance from development agencies; and
- foster the exchange of experiences among participating cities.

SUSTAINABLE LAND USE

Helping countries manage and utilize their land-based natural resources in a sustainable way is the main goal of the Sustainable Land Use team. Work in this area builds capacity for designing and implementing strategies and policies for sustainable land use, within the overall objective of promoting economic growth and alleviating poverty.

Key programs:

- ◆ Rural Development
- ◆ Forestry Management
- ◆ Wetlands Management and Fisheries.

Policy and Institutional Reform for Sustainable Rural Development

December 7-11, 1998, Washington DC

The course aims to strengthen the capacity of senior government officials to promote rural development in the context of sustainable natural resources management. Since the majority of rural people rely for their livelihoods on land and water resources, the first major objective will be on policy and institutional reforms to enhance the sustainable management of land and water resources. The second major objective will be to institutionalize strategies such as decentralization and community-based development to improve governance of the rural sector.

Sustainable Forestry—National and Global Perspectives

December 7-12, 1998, Indonesia

The program aims to strengthen efforts to control deforestation in tropical rainforests in East Asia, the Amazon, and the Congo basins. The program objectives are to:

- develop dissemination and training activities on forestry issues for a multisectoral audience;
- create international professional networks of government officials, private sector executives, NGOs, journalists, and academics to foster institutional and policy reforms in the forestry sector; and
- encourage regional cooperation in forest conservation, especially where forest ecosystems go beyond national boundaries.

The program will focus on management of forest fires, sustainable logging, and managing forests for biodiversity conservation and climate change mitigation.

WATER RESOURCES MANAGEMENT

The Water Resources Management team developed the Water Policy Reform program. This program pays particular attention to the environmental, institutional, economic, and social aspects of integrated water resources management in the three main water-using subsectors: ecosystem protection, irrigation and drainage, and water supply and wastewater.

Key programs:

- ◆ Integrated Water Resources Management
- ◆ Water Supply and Wastewater Policy

- ◆ Water Supply and Sanitation for the Urban Poor
- ◆ Sustainable Irrigation Policy.

Africa Water Resources Management Policy Workshop

January 11-14, 1999, Tanzania

This workshop, to be organized in conjunction with the Global Water Partnership, will be the first of a series of joint learning and capacity building activities of the Africa Water Resources Management Initiative. The purpose of the workshop will be to share and disseminate lessons of their experience in reforming water resources management policies in Africa. The workshop objectives are to:

- provide a forum for senior policymakers to share their experiences with institutional reforms and the challenges of managing water resources in an integrated manner; and
- promote the development of a network of African water resources professionals.

Economic Growth, Aquatic Biodiversity, and Water Resources in the Amazon River Estuary

November 16-20, 1998, Brazil

The program will support the creation, implementation, and coordination of sustainable grassroots initiatives to manage aquatic and water resources in the estuary to enhance human welfare, ensure the long-term viability of natural resource use, and preserve as much biodiversity as possible.

CROSS-CUTTING THEMES

Cross-thematic linkages permeate all of EDIEN's work and contribute to the essential strategies in addressing natural resources, environmental, health and social problems. Cross-cutting theme events focus primarily on:

- ◆ Public-private partnership
- ◆ Decentralization and participation
- ◆ Information management, transparency, and accountability
- ◆ Institutional capacity building
- ◆ Economic valuation.

Environmental Economics for Development Policy

July 6-17, 1998 and First Semester 1999, Washington DC

This course presents analytical tools that link economic and environmental/health/social issues and policies. EDI/LLC will also deliver the course through partner organizations. Encouraging such partnerships will help spearhead EDI/LLC's distance learning strategy, which is intended to provide policy services at the regional, national, and local levels.

EDI

This article

highlights several

Bank programs to

train staff and

experts from

borrower agencies

in environmental

best practices.

For more information, please contact Dennis Mahar, Manager, EDIEN at (202) 458-7970, fax: (202) 676-0978, email: dmahar@worldbank.org

This article was prepared by EDIEN staff and compiled and edited by Fadi Doumani of EDI/LLC. He can be reached at (202) 473-6315, fax (202) 676-0977.

At a glance . . .



POLLUTION PREVENTION AND ABATEMENT HANDBOOK 1998

The World Bank Group has recently adopted, for use in its projects, the *Pollution Prevention and Abatement Handbook 1998*. This document replaces the *Environmental Guidelines 1988* and supercedes draft versions of the *Handbook* that have been in circulation for comment and discussion.

The *Handbook* was released in August 1998 and about 200 copies were distributed to managers and technical specialists within the Bank, IFC, and MIGA. It will soon be disseminated more widely in two ways:

The full text will be made available on the web, accessible both internally and externally, via the Pollution Node at www.esd.worldbank.org/pollution/. The electronic

version is expected to be available on-line by October 1998.

Hardcover copies of the *Handbook* will be published by the Bank and should be available through the Infoshop by November 1998. A limited number of copies will be provided to Bank staff at Headquarters and in country offices but it will not be possible to meet all individual requests for copies. Reference copies will also be provided to Resident Missions, partner organizations, and government agencies. Other requests will be referred to the Infoshop.

Requests for information can be sent by e-mail to p-ph-admin@worldbank.org.

The World Bank recently launched a Marine Market Transformation Initiative (MMTI) to support more environmentally and socially sustainable practices in the production of marine goods and services. The Bank's efforts under the MMTI will initially focus on: (1) eliminating destructive practices in the harvest and trade of live coral reef fish for the restaurant and aquarium industries; (2) promoting sustainable shrimp farming in Southeast Asia; (3) linking marine tourism to coral reef conservation; and (4) reducing overcapacity in the marine fisheries sector. MMTI's approach will be to identify market incentives for current unsustainable practices and support the introduction of measures, including

policy reforms, alternative technologies, economic instruments, targeted investments, consumer education, and eco-labeling and marketing, that will shift signals in favor of greener production and consumption.

In undertaking this effort, the Bank will form strategic coalitions with key private sector stakeholders that are leading the change. These include industries in which unsustainable practices are adversely affecting profits, NGOs that advocate change and are active in driving it, technical institutions that provide know-how and alternatives, and development financiers (including bilateral agencies and philanthropic foundations) that can provide catalytic financing for largely private sector investments that demon-

strate sustainable practice. The Bank will also use its convening power to facilitate flexible and informal consultations between interested but often opposing groups to find common ground and forge new alliances.

The Bank has identified a preliminary pipeline of projects, and pilot activities have been initiated with seed money in two of the four areas noted above. The Bank is seeking to leverage these limited funds through contributions from interested donors (both bilateral and private foundations) and joint sponsorship of activities with stakeholders,

including recipient governments. Once the pilots are well underway and the potential for



scaling up has been demonstrated, MMTI will seek to mainstream these efforts into the Bank's lending operations.

World Commission on Water establishes body to assess water resources

Dr. Mahmoud Abu-Zeid, President of the World Water Council, has announced the formation of a World Commission on Water for the 21st Century. The Commission is expected to prepare a long-term vision for addressing water issues in the next century.

The 21-member Commission—comprising internationally recognized water, environmental, and development experts—is chaired by Ismail Serageldin, Chairman of the Global Water Partnership (GWP) and Vice President for Special Programs at the World Bank.

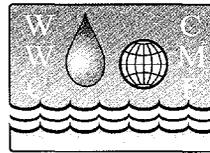
In preparing the long-term vision, the Commission will address the impact of climate change on variability of rainfall and desertification, and the most likely scenarios for population growth and spatial deployment. It will also look into ways of reducing losses in monsoon areas and water harvesting in semi-arid and arid zones, as well as possibilities for desalinization, the treatment of pollution through incentives and new technologies such as single cell proteins, the reuse of city wastewater for high-value agriculture, and techniques to transform water efficiency in agriculture. The role of civil society, local communities, women, the private sector, and other institutional actors must figure in this vision for it to become a

reality. The remarkable scope of experience on the Commission will help promote action in concert with local communities, national governments, and international bodies around the world.

The Commission's Secretariat, to be located at UNESCO headquarters in Paris, is co-sponsored by the World Bank, the Food and Agriculture Organization of the United Nations, United Nations Development Programme, United Nations Environment Programme, and the World Meteorological Organization—and additional institutions may also extend their support. The Commission's report will be released on World Water Day, May 22, 2000, in the Netherlands.

In announcing the Commission, Dr. Abu Zeid said, *"At the threshold of a new century, few challenges loom as large as the declining availability of fresh water to meet the rising demands of an expanding human family while recognizing the intimate link of that precious resource to the global ecosystems on which human survival depends."*

Dr. Ismail Serageldin, Chairman of the Commission, Chairman of the Global Water Partnership (GWP) and World Bank Vice-President for Special Programs, promised that the Commission would consult widely in arriving at its views, and would reach out to different regions of the



World Water Council
Conseil mondial de l'eau
Consejo mundial del agua

world and to different constituencies in its work.

For further information, please contact:
Laura Edwards,
GWP Secretariat in

Stockholm +46 8 698 5384; mobile +46 70 347 4382; or
Sarwat Hussain, World Bank Special Programs, (202) 473-5690,
Shussain@worldbank.org.

MEMBERS OF THE WORLD COMMISSION ON WATER FOR THE 21ST CENTURY

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Dr. Ismail Serageldin, Vice President, World Bank, and Chairman, Global Water Partnership

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Wilfried Thalwitz, Former Senior Vice President, The World Bank

José Israel Vargas, Minister for Science and Technology and President, Third World Academy of Sciences, Brazil

A Selection of World Bank Group Environmental Publications

Economics

Economic Perspectives on Nature Tourism, Conservation, and Development

Environment Department Paper No. 55
M.P. Wells, September 1997.

The Use of Spatial Analysis at the World Bank

Environment Department Paper No. 56
D. Gray and J. Nelson, September 1997.

Subsidies and the Environment: A Televised Dialogue

(Available in NTSC/PAL/SECAM).

Estimating National Wealth: Methodology and Results

Environment Department Paper No. 57
John Dixon, January 1998.

Managing Water as an Economic Resource: Reflections on the Chilean Experience

Environment Department Paper No. 62
John Briscoe, April 1998.

Environmental Assessment

Assessing the Environmental Impact of Urban Development

Environmental Assessment Sourcebook Update No. 19
October 1997.

Biodiversity and Environmental Assessment

Environmental Assessment Sourcebook Update No. 20
October 1997.

Environmental Hazard and Risk Assessment

Environmental Assessment Sourcebook Update No. 21
December 1997.

Environmental Assessment of Mining Projects

Environmental Assessment Sourcebook Update No. 22
March 1998.

Economic Analysis and Environmental Assessment

Environmental Assessment Sourcebook Update No. 23
April 1998.

Natural Resources

Biodiversity Conservation Projects in Africa: Lessons Learned from the First Generation

Dissemination Notes No. 62
July 1998.

The Convention to Combat Desertification and the Role of the World Bank

Dissemination Notes No. 63
August 1998.

Natural Resource Management Portfolio Review

Environment Department Paper No. 58
January 1998.

Biodiversity in World Bank Projects: A Portfolio Review

Environment Department Paper No. 59,
March 1998.

Integrating Freshwater Biodiversity Conservation with Development—Some Emerging Lessons

Environment Department Paper No. 61
April 1998.

Water Resources Management

Strategic Action Programme for the Red Sea and Gulf of Aden

Regional Organization for the Conservation of the Environment of the Red Sea and Gulf of Aden (PERSGA), September 1998.

Pollution

Phasing Out Lead from Gasoline: Worldwide Experience and Policy Implications

World Bank Technical Paper No. 397
Magda Lovei, January 1998.

Environmental Action Programme for Central and Eastern Europe — Setting Priorities

Abridged version of the document endorsed by the Ministerial Conference, Lucerne, Switzerland, 28–30 April 1993
May 1998.

Priorities for Environmental Expenditures in Industry — Eastern Europe and the Former Soviet Union
Mark Ambler and John Marrow with contributions from Wynne Jones, Gordon Hughes, David Hanrahan, and Magda Lovei, May 1998.

Municipal Wastewater Treatment in Central and Eastern Europe
László Somlyódy and Peter Shanahan. May 1998.

Social Development Papers

Toward a Listening Bank — A Review of Best Practices and the Efficacy of Beneficiary Assessment
Social Development Paper Number 23
Lawrence F. Salmen, 1998.

Nurturing Civil Society at the World Bank — An Assessment of Staff Attitudes toward Civil Society
Social Development Paper Number 24
Saad Eddin Ibrahim, 1998.

Implementing Beneficiary Assessment in Education — A Guide for Practitioners (with examples from Brazil)
Social Development Paper Number 25
Lawrence F. Salmen, assisted by Misgana Amelga, 1998.

Social Development Update: Making Development More Inclusive and Effective
Social Development Paper Number 27
Social Development Family, 1998.

Social Assessment in Tajikistan Brings Rural Realities to Urban Decisionmakers
Social Development Note Number 34
Michael Mills and Keith Rennie, May 1998.

Stakeholder Participation through Social Assessment in the Argentina Small Farmer Development Project
Social Development Note Number 35
Steven Schonberger and Estanislao Gacitua-Mario, May 1998.

Beneficiary Assessment for Monitoring: The Zambia Social Recovery Project
Social Development Note Number 36
Bruce Jones and Dan Owen, May 1998.

Social Assessment Helps Sharpen Sector Reforms in Armenia
Social Development Note Number 37
Gillian Perkins, Laura Rose, Toomas Palu, and Mary Beth Schmidt, May 1998.

Social Assessment Builds a Project for People and Parks in Argentina
Social Development Note Number 38
Robert Kirmse and Estanislao Gacitua-Mario, May 1998.

Meaningful Consultation in Environmental Assessments
Social Development Note Number 39
Shelton H. Davis and Nightingale Rukuba-Ngaiza, September 1998.

Post-Conflict Reconstruction: The Role of the World Bank
1998.

Mainstreaming Gender and Development in the World Bank: Progress and Recommendations
ESSD Series/Social Development Subseries, Caroline O.N. Moser, Annika Tornqvist, and Bernice van Bronkhorst, forthcoming 1998.

Integrating Social Concerns into Private Sector Decisionmaking: A Review of Corporate Practices in the Mining, Oil, and Gas Sectors
Kathryn McPhail and Aidan Davy, World Bank Discussion Paper No. 384, 1998.

Participation and Social Assessment: Tools and Techniques
(book and video tape)
compiled by Jennifer Rietbergen-McCracken and Deepa Narayan, 1998.

Contact information:

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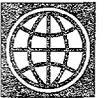
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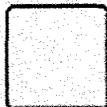
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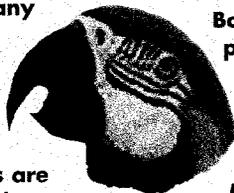
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THE KNOWLEDGE BANK

OUR PARTNERSHIPS

The Bank has developed many partnerships over the years and is rapidly expanding in this area. One example is the World Bank - Worldwide Fund for Nature (WWF), whose goals are to: a) establish a network of protected areas including at least 10% of each of the world's forest ecoregions (by 2000); and b) achieve sustainable management of 200 million ha of forest area, half temperate, half tropical (by 2005).



ABOUT THE WORLD BANK GROUP

Baffled by the organizational maze of the World Bank? Currently, the Environment Family, along with the Social and Rural Development families, falls within the Environmentally and Socially Sustainable Development Network (ESSD). Robert Watson is the Director of the Environmental Department and Ian Johnson was just appointed the Vice President and head of ESSD.

DATA AND PUBLICATIONS

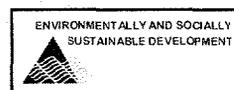
Books, data, and project information provide you with a rich knowledge base to do research, explore a new interest, or learn about a project. Key areas: a) InfoShop - provides you with Bank publications such as *World Development Indicators*, project documents including summaries of environmental assessments, environmental datasheets, and Global Environment Facility documents; b) *World Development Sources* - an enormous online catalog of Bank documents and publications; c) Libraries' JOLIS catalog - a searchable database available online; d) Publications Home Page - ordering information; and e) Depository Library list - see which one is close to you.

NEWS AND EVENTS

Did you know that there is a conference on Culture in Sustainable Development: Investing in Social and Natural Endowments happening in late September? Or that the Board recently approved a \$32.4 million Arsenic Mitigation - Water Supply Project in Bangladesh? Or that the *World Bank News* - a fortnightly newsletter for journalists and the development community - is published in English, Spanish, French, German and Japanese? Investigate this and more in the News and Events section. This section includes media contacts.

DEVELOPMENT TOPICS

Different "communities of practice" within the Bank are in the process of developing sites reflecting their knowledge and experience about various topics. Environment themes include Pollution Management; Climate Change; Montreal Protocol; Biodiversity; Forests and Forestry; Water; Drylands and Desertification; Environmental Economics and Indicators; and Global Environment.



A World Free of Poverty

Special Interest

- 1998 Annual Meetings
- The Year 2000 Problem
- World Development Indicators

WDR 1998-99

Knowledge for development

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Key Contacts (also see on web: About the World Bank - Contacts)

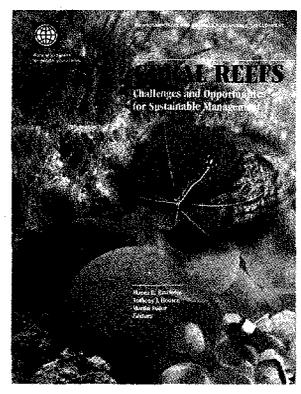
InfoShop (publications, project documents, general inquiries)
call: 202.458.5454 (USA country code -1)
email: books@worldbank.org

Business Partnership Center (procurement, resource guide, services)
call: 202.552.4272
email: Business_Partner@worldbank.org

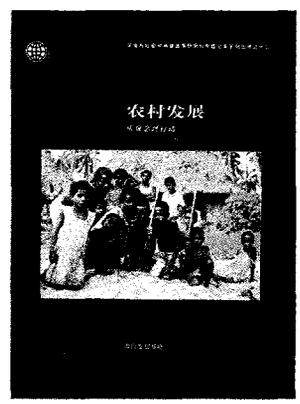
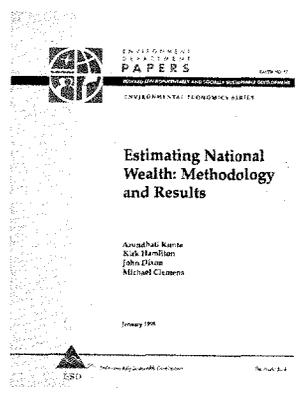
Media Inquiries (environment issues):
call: 202.473.9453
email: Mmatheusatchley@worldbank.org

ESSD Advisory Service (best practices, policies & guidelines)
email: eadvisor@worldbank.org
call: 202.552.3773

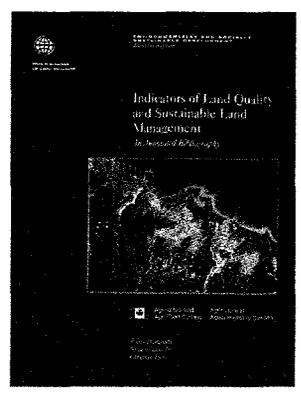
Coral Reefs: Challenges and Opportunities for Sustainable Management by Marea E. Hatziohos, Anthony J. Hooten, and Martin Fodor (eds.). *Environmentally and Socially Sustainable Development Series*, work in progress for public discussion.



Estimating National Wealth: Methodology and Results by Arundhati Kunte, Kirk Hamilton, John Dixon, and Michael Clemens. *Environment Department Paper No. 12.*

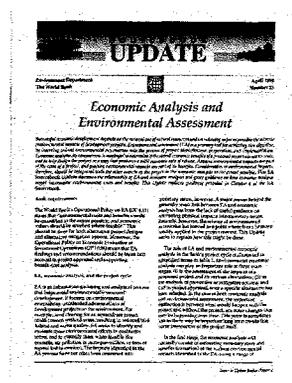


Chinese translation of **Rural Development: From Vision to Action** *Environmentally Sustainable Development Studies and Monograph Series No. 12.*

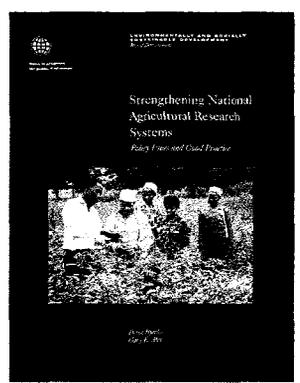


Indicators of Land Quality and Sustainable Land Management: An Annotated Bibliography by Julian Dumanski, Samuel Gameda, and Christian Pieri. *Environmentally and Socially Sustainable Development Series* (Rural Development subseries), work in progress for public discussion.

Economic Analysis and Environmental Assessment by John Dixon and Stefano Pagiola. *Environmental Assessment Sourcebook Update No. 23.*



Strengthening National Agricultural Research Systems: Policy Issues and Good Practice by Derek Byerlee and Gary E. Alex. *Environmentally and Socially Sustainable Development Series* (Rural Development subseries), work in progress for public discussion.



Chinese translation of **Expanding the Measure of Wealth: Indicators of Environmentally Sustainable Development by the World Bank.** *Environmentally Sustainable Development Studies and Monograph Series No. 17.* (ISBN 0-8213-3956-7).

