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Public Disclosure Authorized

Environment **matters**

**The World Bank Group
and the Environment
Fiscal 1996**

AT THE WORLD
BANK

Public Disclosure Authorized



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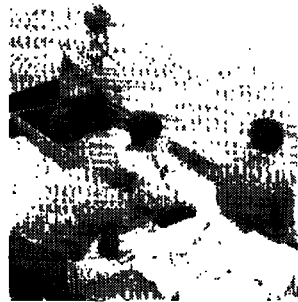
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Fishermen cast nets at sunrise on the Ubangui River on the Zaire-Central Africa Republic border.

Photograph by Maurice Asseo

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Foreword

Does the environment really matter for development?

Absolutely. We are all equal stakeholders in the drive toward environmentally and socially sustainable economic development. This work is a daunting task. Since the 1992 Rio Earth Summit, the World Bank has carried out its commitment to the principles acknowledged in Rio through an environmental agenda which has grown exponentially. What started as a small unit of professionals looking at the environmental implications of our work has grown to a staff of well over 300 specialists whose job it is to integrate environmental and social sustainability into all aspects of the Bank's ongoing operations. Because of our large base of development tools, policies and procedures for economic development, we are able to carry out this new commitment with an ever-growing bank of environmental and social tools and good practices.

Each year since the Earth Summit, we have documented the Bank's agenda for environmental and social sustainability in our Annual Report on the Environment. The fiscal 1995 report, *Mainstreaming the Environment* (October 1995), pointed out the Bank's movement into a 'third generation' of environmental reforms, which called for a more deliberate and early integration of environmental work into all Bank work, in our growing portfolio of environmental projects, in our regular lending portfolio, and in all of our non-lending activities. It also called for an emphasis on on-the-ground implementation and a stronger focus on people and social structures to find solutions and make development more sustainable.

This year, in our continuing effort to 'mainstream' our findings and best practices by making our work more accessible and applicable to Bank task managers, our client countries, our partners and the environmental community at large, we began a new publication called *Environment Matters*. This magazine, to be issued three times a year, folds together a number of separate publications, and is designed to be more participatory in its creation and more accessible in the information which it shares. The fall issue of the triannual magazine has now replaced the old Annual Report and serves as a more informal, more participatory annual review. It is issued in tandem with a descriptive matrix of environmental projects in the Bank Group's portfolio.

This publication is the compendium of the fall 1996 issue of *Environment Matters*, containing the annual review for fiscal 1996 (July 1995-June 1996) and a 10-year accounting of the project portfolio in a project matrix (*Appendix*). The annual review portion of the publication is divided into four sections: an overview, a series of regional reviews, a set of reviews on a spectrum of environmental and social issues, and a brief scan of relevant publications. In addition, we have included the column called *Reflections* written by Maurice Strong at our invitation, which sets the context for the Bank's work in the larger global agenda drawn up in Rio in 1992.

The magazine is available through the Environment Department and on the World Wide Web.

Andrew Steer
Director
Environment Department
The World Bank



**ENGAGING THE PRIVATE
SECTOR TO PROTECT THE
WORLD'S FORESTS**

Together with NGO and private sector partners, the Bank and the International Finance Corporation have created the **Forest Market Transformation Initiative**.

FMTI is designed to help the private sector lead the forestry industry into environmentally sustainable practices. The program works by generating competitive advantage and catalyzing on-the-ground results. The program has already established an impressive stakeholder coalition, including representatives from the forestry industry, NGOs, universities, foundations and bilaterals, and the initial modest seed funding is expected to leverage substantial resources. (see page 41).

A jumb-line resting on the flat, freshly cut surface of this African

tree in Malawi, a protected area, is a sign of its durability.

Called "jumb-lines," because they last for

decades, they are a sign of the durability of the

loggers who have been using them for

This year, on the fifth anniversary of the Earth Summit, a special session of the United Nations General Assembly will review progress towards implementing the agreements reached there, focussing particularly on Agenda 21. In March, the Rio +5 Assembly in Rio de Janeiro will add the perspectives of a broad cross section of civil society. After only five years it may be too early to pronounce final judgement on the ultimate results of the Earth Summit. After all, Rio called for fundamental changes in our economic life and in the behaviour of individuals, corporations and nations. And fundamental change does not come quickly or easily.

At this point it can be said that in many respects the response to Rio has been disappointing. Official development assistance has declined. Despite progress in some areas, environmental deterioration continues while the unsustainable practices which give rise to it persist.

However, there is also some good news. Developing countries have taken important steps to integrate sustainable development into their own national development policies and practices. Many have adopted national strategies based on Rio's Agenda 21. China is an example, as is Costa Rica, which also took the lead in establishing a Central American Alliance for Sustainable Development.

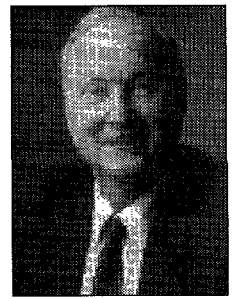
But it is at the level of civil society that some of the most promising progress has been made - much of it at the grass roots and community levels. More than 1500 cities and towns around the world have adopted their own Agenda 21. National Councils for Sustainable Development or equivalent bodies now exist in more than 100 countries to foster consultation and collaboration between civil society and governments.

For me the single most important and encouraging development since Rio has been the emergence of the World Bank under President Jim Wolfensohn as a leading champion of sustainable development. Not only has the Bank become the single largest source of funding for environmental programs and projects, it is integrating environmental and social dimensions into all of its operations. The World Bank is playing a key role in tackling global issues like climate change and regional issues like marine pollution and it is mounting an initiative to establish sustainable development guidelines for private investment.

These and the many other activities that will be reported in *Environment Matters* clearly put the World Bank at the centre of the movement towards a more sustainable way of life on our planet for which the agreements reached at the Earth Summit provide the basic blueprint. Intrinsic to this are some essential premises: for development to be sustainable, environmental and social dimensions must be integrated fully into its planning and management processes; the creation of wealth must be accompanied by the reduction of poverty, resulting in a more equitable sharing of the benefits of development; human activities must respect and maintain the integrity of the natural environment and the life support systems on which all life on Earth depends.

I am persuaded that the 21st century will be decisive for the human species. We are pushing to the limits this planet's capacity to support human life. This confronts us with a challenge of unprecedented proportions; we literally must manage our own future. Although science and technology provide us with new tools which vastly lever our capacity to do this, we will not find the solutions there. It will require the application of human ingenuity, political will and social discipline on a scale never yet achieved to ensure the kind of cooperative management on which our survival will depend.

Despite the current low level of support for international institutions, these organizations will inevitably be pivotal in facilitating and supporting the collaboration that is indispensable for dealing with the issues that will determine our common future. No organization will be more essential to this process than the World Bank. And none is doing more to prepare itself for the new dimensions of service to its members and the world community which will be required of it as we move into the 21st century.



by **Maurice Strong**
*Secretary-General, 1992
Rio Earth Summit
Senior Advisor to the
World Bank President*



Overview

THE YEAR IN PERSPECTIVE

by Andrew Steer, *Director, Environment Department*

Recent years have witnessed a profound change in our understanding of the links between economic development and the environment. The key 'propositions' of sustainable development—laid out in the Brundtland Commission Report in 1987 and in Rio's Agenda 21 in 1992—were controversial at the time, but are now broadly accepted. Among such propositions:

- there is a crucial and potentially positive link between economic development and the environment;
- the costs of inappropriate economic policies on the environment are very high;
- addressing environmental problems requires that poverty be reduced and that economic growth be guided by prices which incorporate environmental values; and
- environmental problems pay no respect to borders — regional and global problems require regional and global actions.

Broad acceptance of these propositions, however, has not assured their effective implementation. Many environmental problems continue to intensify and in many countries there are few grounds for optimism. Nonetheless, in a growing number of countries, awareness is leading to action. Around 100 countries have now prepared national environmental strategies, and tangible changes are apparent in about half this number.

Along with other international agencies, the World Bank has sought to help its client countries make development sustainable, and in the process has undergone its own 'greening.' Since the Earth Summit, our capacity to deal with environmental and social concerns has risen sharply. Environmental and social specialist staff now number over 300, and a series of operational policies on the environment have been put in place (*see page 39*).

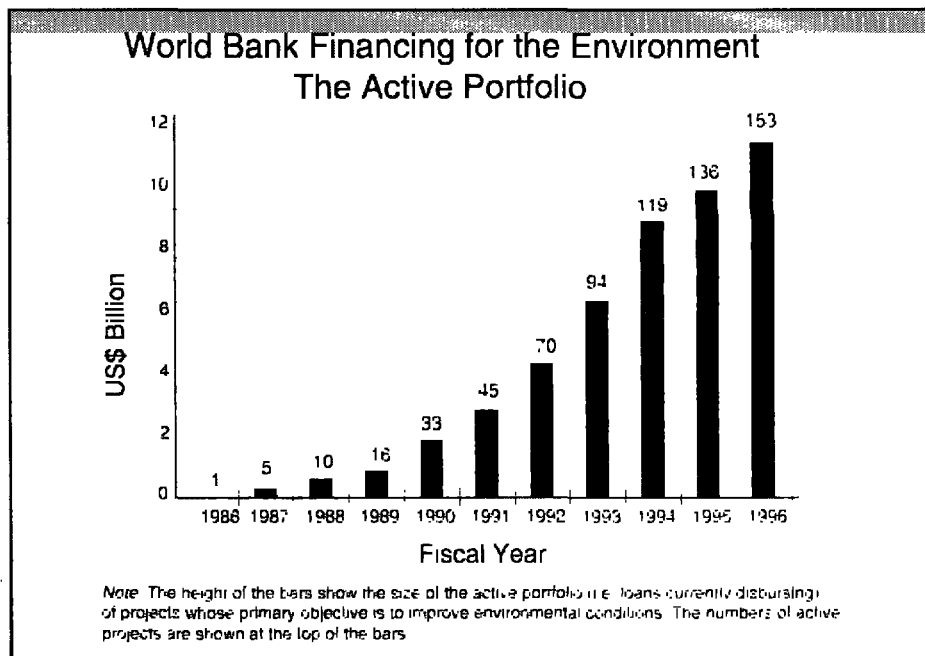
The Bank's environmental agenda is two-fold: to support countries as they seek to reform their environmental management, and to factor environmental concerns into *all* Bank activities.

Targeted Support for the Environment

In attempting to reconcile economic development with environmental protection, a growing number of developing countries are attempting to implement a 'new environmentalism' that recognizes economic development and environmental sustainability as partners. The Bank's President, James Wolfensohn, recently articulated the principles of the new environmentalism, which are increasingly reflected in our lending for enhanced environmental management (*see Box, page 5*).

“What is sustainable development other than sound economic management, rationality, respect for the rights of others, and concern for future generations? To move from vision to action requires methodologies and best practices for improvements in measurement, proper pricing, enabling environments and participatory approaches to development”.

Ismail Serageldin, Vice President,
Environmentally Sustainable
Development



The World Bank's active environmental portfolio now stands at \$11.5 billion for 153 projects in 62 countries (see Box, page 6). Of this amount, \$7.2 billion has been committed since the Rio Earth Summit in 1992 (see figure), including \$1.6 billion (for 20 projects) in the past year. Our lending for the environment has leveraged an additional \$14.5 billion from other sources, bringing total investment in the environment to \$26 billion.

The environmental portfolio is on average currently performing slightly better than the Bank's overall loan portfolio, but continued strong progress should not be taken for granted. Environmental programs, due to their cross-sectoral nature and frequent opposition from vested interests, pose complex implementation challenges, and careful supervision will be necessary.

This portfolio, which is unique in size and scope, is not only a large responsibility, it is also a rich living laboratory from which we and others must learn. It is vital that lessons be distilled, and factored into future programs. With this in mind, we are currently carrying out a systematic review of project and policy implementation, focusing first on natural habitat protection, pollution management and capacity building.

Beyond National Boundaries

Many environmental problems need regional or global solutions. The past year marked the second meetings of the Parties to the Biodiversity and Climate Change Conventions, the Tenth Anniversary of the Vienna Convention on Ozone Depletion, and progress towards ratifying the Desertification Convention. The Bank, as an implementing agency for the Global Environment Facility (GEF) and Montreal Protocol, and through its regular lending, is committed to implementing these global agreements and other regional environmental programs.

The focus of our **biodiversity** projects continues to evolve from traditional protected area management to an emphasis on sustainable natural resource utilization, participation and involvement of the private sector (see page 44). IFC's Biodiversity Enterprise Fund for Latin America, for example, will support investments in sustainable agriculture, forest management and the use of non-timber forest products. In addition, the past year has seen the completion of landmark work on defining a biodiversity conservation strategy for Latin America and the Caribbean (see page 22), and completion of a draft biodiversity conservation strategy for Sub-Saharan Africa.

PRINCIPLES OF THE NEW ENVIRONMENTALISM

As developing countries struggle to forge paths that provide for both prosperity for their citizens and good stewardship of the environment, they are searching for new approaches. Among the imperatives guiding their actions:

1. Set priorities carefully.
2. Go for win-win options first.
3. Insist on cost-effectiveness.
4. Use market incentives where feasible.
5. Economize on administrative/regulatory capacity.
6. Set realistic standards and enforce them.
7. Work with, not against, the private sector.
8. Recognize that local involvement is crucial.
9. Build constituencies for change.
10. Incorporate environment from the outset.

For more details, see James Wolfensohn: "The Environment for Sustainable Development", in Environment Strategy America, 1995/96.

In the area of **water resources management**, this year the Bank supported regional cooperation in water management in Southern Africa, and national water strategies in Tanzania, Kenya and Zimbabwe. In Europe and Central Asia, progress was made in implementing five major international waters programs in which the Bank plays a coordinating or supporting role: the Baltic, Black, Mediterranean and Aral Seas, and the Danube River Basin.

The two main thrusts of our work in the area of **climate change** were energy efficiency and renewable energy (see page 35). Examples of the former are the Slovenia Environment Project and the China Efficient Industrial Boilers Projects, which will address the enormous problem of dependency on obsolete and inefficient boiler technology throughout much of Chinese industry. This year we also continued work on Joint Implementation and embarked upon a global warming backcasting exercise.

“But even as we seek to mainstream issues of sustainability in all we do, we need to acknowledge frankly that the transition is not complete. We have much to learn, and we need to be disciplined and vigilant in ensuring that stated policies and intentions are actually applied on the ground”

Caio Koch-Weser, *Managing Director, The World Bank*
Address to OECD Environment Ministers, February 1996.

The past year also saw major milestones in our GEF and MP **ozone programs**. We supported the Russian Federation and several Eastern European countries in phasing out ODS and helped China to introduce a comprehensive sectoral approach to ODS phase-out, using market-based instruments (see page 34).

Greening the Entire Portfolio

In addition to our targeted programs for the environment, we need to ensure that **all** Bank activities take environmental concerns into account.

A simple — and rough — environmental accounting of the Bank's total lending since Rio is presented in Table 1. Four types of projects are identified. First are those specifically targeted towards improving the environment (discussed above). Second, are those that are unarguably benign to the environment while promoting economic development — these “win-win projects include population, education, health, and targeted poverty reduction projects. Third, are projects where real trade-offs may exist between protecting the environment and promoting economic development, such as road or energy projects (EA category A — see Box, page 7). Finally are all other programs — in agriculture, urban development, economic adjustment, and the like — which are benign if correctly designed; without proper care, these can damage long-term sustainability.

Since Rio the Bank has moved aggressively to ensure that environmental concerns are progressively factored into **all** these categories of projects. In so doing a number of imperatives are guiding our actions.

Assessing and Mitigating Environmental Impacts. The Bank's EA process employs a combination of proactive and preventive measures to ensure that projects are environmentally sound and sustainable. Preventive measures are directed to recognizing and mitigating potential harm to people and the environment. More significantly, EA can proactively contribute to the design and implementation of environmentally sustainable projects where it is initiated early, at a strategic level, with public involvement, and where it is used to compare and evaluate alternative investments.

THE PORTFOLIO OF ENVIRONMENTAL PROJECTS

The active portfolio of environmental loans can be broadly divided into three categories. Pollution and urban environmental management projects account for 60 percent of environmental lending and 38 percent of projects. Last year, ten such loans were made for a range of issues (see page) Rural environmental projects are currently being implemented in 41 countries, and five new projects were approved in the past year improve natural resources management. Three new Environmental institution building projects were also approved, with the objectives of implementing national environmental action plans or strategies.

Active Portfolio of Environmental Projects, as of July 1996

Project focus	Number of projects	Number of countries	World Bank contribution (loan or credit; billions of dollars)	Total Project Cost (billions of dollars)	Avg. size of loan or credit (millions of dollars)
Pollution, and the Urban Environment ¹	58	31	€ 9	17.3	118
Natural Resources: Rural Environmental Management ²	69	41	3.6	7.0	52
Environmental Institutions	26	23	0.9	1.6	36
Total	153	62	11.5	26.0	75

¹Typically includes capacity building funds for on-lending to enterprises and agencies, direct investment in pollution prevention and abatement, and support for policy reform for improved environmental management.
²Addressing issues ranging from biodiversity conservation, management of forests, land and water resources. Aimed at strengthening national and local environmental management capacity.

In addition to the three categories of environmental projects, the Bank also implements the Global Environment Facility (GEF) and the Montreal Protocol (MP). Over the past year, \$126 million was committed for 15 new GEF projects, bringing the total GEF portfolio to \$506 million for 59 projects over the four focal areas: Biodiversity, Climate Change, Ozone Depleting Substances (ODS) Phaseout, and International Waters. The MP portfolio also grew and now totals \$214 million approved for 461 subprojects.

In the past year, major reviews of the quality and impact of EA procedures were completed by the Bank's Operations Evaluations Department and the Environment Department. They concluded that while very good progress has been made, the proactive potential of EA needs to be better realized — in analyzing alternatives, involving local communities and ensuring implementation of mitigation plans. We have already started to build on these lessons.

Incorporating Environment into Sectoral Programs. Bank sectoral programs increasingly acknowledge that development will only be made sustainable if environmental and social concerns are factored into the core of policymaking. This year, for example, the Bank's Board adopted a new policy paper on "Sustainable Transport", which places poverty and environment at the center of the Bank's transport work. Similarly, the Bank's draft action plan to revitalize work on agriculture and rural development centers on social and environmental concerns (see page 51).

More important than statements of policy is impact on the ground. Here, real change is becoming apparent, albeit slowly. In energy for example, Bank-supported projects increasingly integrate demand/supply-side efficiency and cleaner technologies — often with the involvement of the private sector — and usually include components to build environmental management capacity in Ministries and utilities. Similarly, much more attention is being given to improved land and water management in rural projects.

Involving Local Citizens. Ensuring that stakeholders are involved in the design and implementation of projects, and that social and cultural concerns are addressed is vital to the success of all that we are trying to do. There is now compelling evidence that involvement of

local communities dramatically improves the prospects for improved environmental management. While this has been well known for some time in rural programs, it is now becoming equally evident in efforts to manage pollution and waste.

This year the Bank launched its Participation Sourcebook (see *Environment Matters, Summer '96 Issue*), a best practice guide. We now need to make participatory approaches and active involvement of civil society the norm in Bank-supported activities. As part of this effort, social assessments are being undertaken on a growing number of projects (60 in the past 18 months) and

over the past year NGO "liaison officers" have been recruited at many of the Bank's resident offices.

Building and Strengthening Partnerships. The Bank's primary partners are the governments and citizens of the developing countries we serve. But we are most effective when we work with other partners who are sometimes better placed to do innovative environmental and social work. Strategic partnerships with groups such as the

ENVIRONMENTAL ASSESSMENT OF BANK-FINANCED PROJECTS

All Bank projects are screened for potential environmental impacts. Those expected to have adverse impacts that may be sensitive and irreversible are assigned to category A and subject to a full environmental assessment. Category B projects are those whose impacts are expected to be less significant; they are subject to some environmental analysis. Category C projects are not expected to have any negative environmental impacts. Among the investment projects approved over the past year, 20 (8 percent) were classified as category A; 98 (39 percent) were classified as category B; and the remaining 133 (53 percent) were classified as category C.

IUCN, WWF and private sector organizations like the World Business Council for Sustainable Development are becoming central to doing business, and are already having high payoffs (see page 40). Operational partnerships with UN organizations are also growing, especially with UNDP, UNEP, FAO and with the Secretariats of the global environmental conventions.

An important example this year has been the launch of the Global Water Partnership in August 1996. Initiated by the Bank, UNDP and the Swedish International Development Agency, the GWP aims to assist local, national and regional authorities to implement Agenda 21 principles of water management. The structure of the GWP builds on the successful model of the Consultative Group on International Agricultural Research (CGIAR), a structured problem-solving program with independent professional leadership, flexible, non-bureaucratic administrative structure, and strong involvement of NGOs, academics, and the private sector.

Building Capacity for the Task. Incorporating environmental concerns into all development activities requires a continuous upgrading of technical skills and attitudes. This is true within the World Bank, where we are currently overhauling internal training programs and identifying skills gaps. And it is true in our client countries, where we are sharply expanding support for training and awareness-raising programs through the Economic Development Institute (EDI) and our project work.

Table 1. World Bank Lending since Rio — A Simple Accounting World Bank Commitments, Fiscal Years 93-96

Type of lending	Billions of Dollars	Percentage
Total lending	87.0	100%
Environment projects ¹	7.2	8%
"Win-win" projects	24.2	28%
Category A Projects	16.0	18%
All other lending	39.6	46%

¹ See companion volume to this magazine for a listing of environmental projects.



Africa

Angola	Malawi
Benin	Mali
Botswana	Mauntania
Burkina Faso	Mauritius
Burundi	Mozambique
Camerocn	Namibia
Cape Verde	Niger
Central African Rep	Nigeria
Chad	Rwanda
Comoros	Sao Tome & Principe
Congo	Senegal
Cote d'Ivoire	Seychelles
Djibout	Sierra Leone
Equatorial Gumea	Somalia
Entrea	South Africa
Ethiopia	Sudan
Gabon	Swaziland
Gambia	Tanzania
Ghana	Togo
Guinea	Uganda
Guinea Bissau	Zaire
Kenya	Zambia
Lesotho	Zimbabwe
Liberia	
Madagascar	

Sub-Saharan Africa depends more on its environmental resource base for its economic and social needs than any other region in the world. But with the natural resource base seriously declining, the entire region, rural and urban, is being profoundly affected.

Two-thirds of the region's people live in rural areas and depend primarily on agriculture and other natural resources for income; to them, the region's severe environmental problems like soil erosion and declining soil fertility, deforestation, pollution of water supplies, and biodiversity loss are everyday, real and critical concerns.

With the world's fastest growing population, averaging about 3% a year, the region will be home to more than a billion people by the year 2025. With rampant migration and urbanization, an estimated 700 million of these people will be living in urban areas, facing health consequences which occur if infrastructure and services fail to keep pace with urban growth.

Meeting the Challenges

Sustainable development in this rapidly changing region has become an imperative, and must take place in the complex context of diverse and changing ecosystems, political transitions and evolution toward market economies. Last August, the Bank's regional team collaborated with a broad spectrum of participants from African countries to develop *Toward Environmentally Sustainable Development in Sub-Saharan Africa—A World Bank Perspective*², an agenda for action which builds the Bank's assistance strategy around the region's major environmental challenges:

- achieving food security through sustainable agricultural intensification;
- facilitating a demographic transition to a more stable population level;

- influencing migration toward a better population distribution, especially in sensitive areas;
- making urbanization sustainable by improving planning and services;
- managing energy, water, and other natural resources in an integrated fashion; and
- hastening Africa's development of modern education, information, and communication systems.

This last fiscal year, the Bank's regional team focused on meeting these challenges by integrating the environment more fully into its development work. In the region's environmental portfolio, projects focused on helping countries increase their environmental management capacity, especially through National Environmental Action Plans (NEAPs) and Environmental Support Programs (ESPs). In the regular investment portfolio, the region helped integrate environmental components into sectors like agriculture, infrastructure, urban management and transportation, and helped find environmental solutions which move beyond national boundaries.

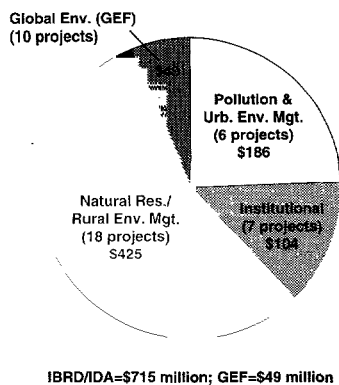
The Environmental Project Portfolio

As of today, 31 active Bank projects in Sub-Saharan Africa (in addition to 10 GEF projects) deal exclusively with environmental issues. The portfolio's natural resource management projects focus on forest and wildlife resource management, and sustainable management of agricultural lands or fisheries; its institutional projects support developing environmental management capacity through NEAPs and ESPs; urban environmental management projects control the environmental and public health issues associated with water and sanitation in cities such as Abidjan and Lome; and its energy efficiency projects address efficient fuel-wood use. The Bank's overall



S. LINTNER

Environment Projects Active During FY96
(\$ million)



contribution to these projects is approximately \$715 million out of a total project cost of \$1.3 billion.

This year, the region's environmental portfolio has expanded to include two new projects, in Niger and Uganda. The **Niger Natural Resources Management Project** is designed to encourage sustainable agricultural production and growth while improving rural living conditions. The project will also address building capacity for environmental management through improved national policies and strategies, strengthening institutions and, at a local level, training rural communities and funding for small resource management projects. The **Uganda Environmental Management Project** supports the first 5-year phase of a longer-term program to build capacity for environmental management at the national, district, and community levels through a National Environmental Management Authority, and to initiate a process in which communities can address their local natural resource degradation problems. One of the key objectives of the first phase is to establish the building-blocks for participatory environmental management.

During this past fiscal year, Cote d'Ivoire completed its NEAP and

Cameroon, Mali, Senegal and Zimbabwe made good progress toward finalizing theirs. The countries have prepared these NEAPs through participatory processes involving a wide range of stakeholders, including environmental and other ministries, wildlife service organizations, NGOs, and community-based organizations. Out of the region's 48 countries, 26 have now completed NEAPs.

The Bank also helps countries implement new or updated NEAPs in the form of ESPs through non-lending activities such as policy and legislative reforms, training and technical advice. Although these projects have a 5-10 year time frame, they support programs to be implemented over a longer period, allowing time to identify successful activities and build up institutional capacity. Zambia and Malawi are currently preparing ESPs.

Environmental Components in the Investment Portfolio

In the past year, the region made great progress in building environmental

projects which are environmentally and socially as well as economically sustainable, supplemented their borrowing with improved environmental management training.

This year, the **Eritrea Community Development Fund Project** will finance community-based sub-projects to improve poor households' income-generating capacity, such as environmental conservation and rehabilitation activities like check-dams, hillside terraces and tree planting in areas affected by soil erosion and deforestation. The **Guinea National Agricultural Services Project** aims to improve the Ministry of Agriculture's capacity to arrest environmental degradation and strengthen agricultural extension's adoption of sustainable technologies and approaches. The **Guinea Mining Sector Investment Promotion Project** aims to improve mining-related environmental laws and regulations and to protect water resources from pollution caused by mining. The **Madagascar Energy Sector Development Project** is creating a program for energy conservation which includes pilot projects in

By the year 2009, nearly 300 million Africans will live in a water-scarce environment. About 65% of rural inhabitants and one-fourth of people in cities are now without adequate water; 73% of the rural and 43% of the urban population are without proper sanitation. The region's forests also continue to be non-sustainably exploited. The threat of deforestation during the next century extends to massive ecosystems like the Congo Basin primary forest, which makes up over 90% of the remaining primary forests in Sub-Saharan Africa.

components into projects in its investment portfolio, particularly in extension and education projects and in agricultural research projects through soil conservation, soil fertility management, agro-forestry and integrated pest management components. Several countries, recognizing the need for

fuelwood supplies, and will explore options for similar programs in the transport sector. The **Ghana Urban Environmental Sanitation Project** aims to provide safe and adequate water supply, sanitation and solid waste services in lower income neighborhoods in the country's major cities. Similar projects

The Environmental Project Portfolio

Country	Project Name	FY	Bank (\$m)	Total Cost
Angola	Lobito Benguela Urban Environment Rehab	92	46	69
Benin	Natural Resources Management	92	14	24
	Environmental Management	95	8	9
Burkina Faso	Environmental Management	91	17	25
	Urban Environment	95	37	50
Burkina Faso Cote d'Ivoire	West Africa Pilot Community-Based Natural Resource and Wildlife Management*	96	7	13
Burundi	Energy Sector Rehabilitation	91	23	23
Cameroon	Biodiversity Conservation and Management*	95	6	12
CAR	Natural Resource Management	90	19	34
Congo	Wildlands Protection and Management*	93	10	17
Cote d'Ivoire	Forestry Sector	90	81	147
	Abidjan Environmental Protection	90	22	50
Gabon	Forestry and Environment	93	23	38
Gambia	Capacity Building for Environmental Management-TA	94	3	5
Ghana	Forest Resource Management	89	39	65
	Coastal Wetlands Management*	93	7	8
	Environment Resource Management	93	18	36
Guinea	Forestry & Fisheries Management	90	8	23
Kenya	Forestry Development	91	20	65
	Protected Areas and Wildlife Services	92	61	143
Madagascar	Forests Management and Protection Environment Program	88	7	23
	Antananarivo Plain Development	90	26	86
		90	31	69
Malawi	Fisheries Development	91	9	16
	Lake Malawi/Nyasa Biodiversity Conservation*	95	5	5
Mali	Natural Resource Management	92	20	32
	Household Energy*	95	3	11
Mauritania	Water Supply	92	11	15
Mauritius	Environmental Monitoring and Development	91	12	21
	Sugar Bio-Energy Technology*	92	3	55
	Biodiversity Restoration*	96	1	2
Niger	Energy	88	32	79
	Natural Resources Management	96	27	42
Nigeria	Environmental Management	92	25	38
Seychelles	Environment and Transport	93	5	7
	Biodiversity Cons. & Marine Pollution Abatement*	93	2	2
Sudan	Southern Kassala Agriculture	89	16	35
Tanzania	Forest Resources Management	92	18	26
Togo	Lome Urban Development	94	26	29
Uganda	Bwindi Impenetrable National Park & Mganinga Gonja National Park Conservation*	95	4	5
	Environmental Management Capacity Building	96	12	23

* Global Environment Facility

were also approved in Tanzania. The environmental review process required by the Bank present an opportunity to improve the environmental and social context for development projects, particularly through sectoral or regional Environmental Assessments (EAs). In the transport sector this past year, projects being prepared in Zambia and Ethiopia have included sectoral EAs, which will establish criteria for road construction, rehabilitation or maintenance sub-projects.

Training programs in Eritrea and Namibia continue to build EA capacity, with guidance emerging from the Bank's Workshop on Environmental Assessment in Durban, South Africa in June 1995. The success of the Bank's and other donors' EA capacity building activities becomes clear as governments rely more and more on local consultants to prepare EAs for Bank-financed projects.

Beyond National Boundaries Sustainable Water Resource Management

In a move toward more sustainable management of its water resources this past fiscal year, the region adopted an Integrated Water Resource Management Strategy for Sub-Saharan Africa. Since most major African rivers and lakes are international, the regional and sub-regional dimensions of water resources are critical and require inter-country cooperation. The strategy aims to contribute to better water management by evaluating resources, assessing use patterns and environmental threats, identifying the potential for sustainable water resource management, and developing mechanisms for transboundary cooperation. The region has made progress fostering cooperation on water resource management among the Southern African Development Cooperation (SADC) countries, and developing national water management strategies in Tanzania, Kenya and Zimbabwe.

Preparatory work has also continued on the GEF Lake Victoria Environmental Management Project. The project will address the major threats facing the Lake's ecosystem, especially over-fish-

ing, eutrophication, and the effects of introduced exotic fish and plant species like the water hyacinth and the Nile Perch. Actions to be taken include regional fisheries research and water quality monitoring, harmonizing regulatory and enforcement systems, and pilot projects in land use management measures like afforestation and soil conservation in the catchment area. Other international waters projects in the early

One notable example of rapid urbanization is the urban community of 50 million inhabitants being created on the coastal zone between Abidjan and Lagos in West Africa.

stages of development relate to managing regional fisheries in West Africa, and designing oil spill contingency plans in the West Indian Ocean.

Biodiversity Conservation

A number of the region's biodiversity projects share an approach to participatory community management of areas needing biodiversity conservation, many of which span national borders. The GEF-financed **West Africa Pilot Community-Based Natural Resource and Wildlife Management Project** uses a community-based approach to managing 4,800 square kilometers of the Comoe natural savanna ecosystem in southwestern Burkina Faso and northern Cote d'Ivoire. The project components include community land management, subsistence and commercial use of wildlife. Zimbabwe and Kenya are applying similar community-based approaches to some of their own conservation projects.

The region has given high priority to environmental monitoring, reflected in the **Regional Environmental Information Management Project (REIMP)** for the Congo Basin's six countries. The multi-donor project is designing a demand-driven satellite information database for central Africa's tropical forest region to build capacity for environmental monitoring and land use

planning. The complementary proposed **Congo Basin Initiative**, now in its early stages of development, aims to develop long-term sustainable management of the Congo's internationally important tropical forest ecosystems.

The Challenges Ahead

As Sub-Saharan Africa works to balance its critical social and environmental needs in the future, it must foster stronger ownership by building capacity for environmental planning and management, using participatory approaches at the national and local levels. The challenge will be to promote implementation of NEAPs by focusing on Local Environmental Action Plans (LEAPs) and continuing to promote national ESPs, building on the experience and best practices from the first generation of ESPs.

Developing institutional capacity will continue to be a high priority. As national environmental agencies are

developed, they need to be complemented by sectoral-level capacity and capacity to manage cross-sectoral programs such as integrated coastal zone management or transboundary watershed management. In parallel, increasing capacity for Environmental Assessment in the region, particularly for strategic Environmental Assessment encompassing sectoral and regional approaches, represents a significant challenge for the region's future.

¹ World Bank, "Toward Environmentally Sustainable Development in Sub-Saharan Africa: A World Bank Agenda." (Washington D.C.: 1996).



This article was prepared by Jean-Roger Mercier of the Africa Region Technical Department's Environmentally Sustainable Development Division (AFTE1).

IMPLEMENTING THE MADAGASCAR NEAP

In FY96, the region prepared the second phase of the Madagascar Environmental Support Program (EPII) under the leadership of Malagasy authorities, working in close partnership with the Bank, other donors and NGOs. This program aims to implement the country's NEAP, designed to establish a policy, regulatory and institutional framework for long-term environmental management and to resolve environmental problems like deforestation, soil degradation, energy and pollution.

EPII builds on the project's first phase, which focused on institution building, developing human resources and establishing sound environmental policies, methods, tools and procedures. In the initial project, some of the small scale projects facilitated by the Agence National des Actions Environnementales (ANAE) at the village level were successful, notably for soil conservation, and there was progress in Geographic Information Systems management. To upgrade institutional capacity, a National Environmental Office, Park Management Agency and Soil Conservation Agency had to be created and existing ministries had to be reinforced, delaying on-the-ground implementation: as a result, fewer micro-projects than anticipated have been completed.

EPII will continue to strengthen activities already launched but will shift its focus toward field activities by reallocating funds. Specifically, environmental and biodiversity conservation components will be complemented by funding for agricultural and other income generating activities that also aim to improve natural resource management at the local level. EPII increases the emphasis on rural development and small-holder land management on farmland and open access lands, especially in the areas where population pressure is greatest. These areas, often far from protected forests and parks, require strong links from protected areas to regional growth areas

A complementary GEF project will finance incremental measures such as system-wide planning for forests outside protected areas, planning for new protected areas and community-based sustainable forestry management schemes



Asia and the Pacific

EAST ASIA & THE PACIFIC (EAP)	SOUTH ASIA (SA)
Cambodia	Afghanistan
China	Bangladesh
Fiji	Bhutan
Indonesia	India
Kiribati	Maldives
Korea	Nepal
Lao PDR	Pakistan
Malaysia	Sri Lanka
Marshall Islands	
Micronesia	
Mongolia	
Myanmar	
Papua New Guinea	
Philippines	
Solomon Islands	
Thailand	
Tonga	
Vanuatu	
Vietnam	
Western Samoa	



B. RAHILL

Over the last few decades, Asia has outperformed the rest of the world in its rate of economic growth. The region's countries have made significant advances in alleviating poverty and improving living standards. As home to half the world's people, this is a significant achievement.

But the region's emphasis on economic growth without equal attention to the environment has resulted in widespread environmental damage. The costs of air and water pollution and soil degradation are large even in simple economic terms. The region's costs from environmental degradation are above 5% of annual GDP, and in China may be as high as 10%. The poor suffer most from the consequences of environmental neglect.

Asian countries are learning that the trade-offs between effective environmental action and economic growth have changed. Economic progress around the world is proving to be beneficial for the environment as it generates resources for better environmental protection and promotes new and environmentally efficient technologies. Better education and higher incomes are crucial to reducing environmental damage.

In spite of these new possibilities, however, Asia's most vexing environmental problems continue to intensify:

Pollution: As the urban population in Asia grows, urban degradation is increasing. Industrial pollution is growing even more rapidly than economic growth. Water pollution is pervasive, contaminating surface water and groundwater in urban and industrial areas. Levels of air pollution

are high in Asia's megacities and many second-tier cities whose resident use coal for cooking and winter heat. The economic cost of air pollution health damages is an estimated \$1 billion a year in Bangkok, Jakarta and other Asian cities.

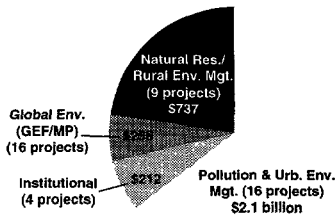
Natural Resources Degradation: Widespread soil degradation, deforestation, wetland conversion, and biodiversity loss pose region-wide resource management and use problems. Rural soil degradation in highly populated countries like Pakistan, India, Bangladesh and China has a measurable impact on agriculture. Deforestation is depleting the national wealth of forest-rich countries like Cambodia, Laos, Indonesia, Papua New Guinea and the Solomon Islands.

Meeting the Challenges

To address these problems, Asian countries are strengthening their environmental institutions, regulations and strategies, and committing more resources. But an estimated additional \$30 to \$40 billion a year will be needed by the year 2000. The private sector's participation has become essential. This calls for policy and pricing reform to improve the rate of return on infrastructure investments, improving the private sector's access to information, government incentives, aggressive regulation enforcement, and environmental education to create wider participation in the management process.

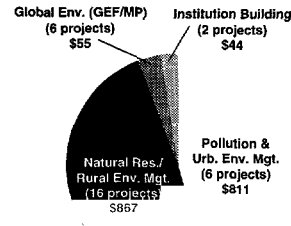
The Bank has helped Asia meet these challenges on three fronts this past year: pollution and resource management investments; institutional strengthening through capacity building; and policy analysis, dialogue, and reform, in industrial pollu-

EAP: Environment Projects Active During FY96
(\$ million)



IBRD/IDA=\$3 billion; GEF/MP=\$256 million

SA: Environment Projects Active During FY96
(\$ million)



IBRD/IDA=\$2 billion; GEF/MP=\$55 million

tion control and energy and water resource pricing.

The Environmental Project Portfolio

This last fiscal year, Bank-supported environmental projects in the two Asia Regions grew from 45 to 53 (in addition to 8 GEF and 15 MP projects) in Bangladesh, Bhutan, China, India, Indonesia, Korea, Laos, Nepal, Pakistan, Philippines, Sri Lanka and Thailand. The balance between the pollution and natural resource management projects in the two regions reflects their different stages of development. More than half of East Asia's 29 environment projects target pollution and urban environmental management (10 in China alone), compared to only 6 in South Asia (5 in India); South Asia has a much greater number of natural resource management or rural environment management projects (16 of 24 projects in South Asia) than East Asia, which has 9. There are six institution building projects (4 in East Asia and 2 in South Asia). The Bank's contribution to these projects is \$3 billion out of a total cost of \$8.8 billion in East Asia and \$1.7 billion out of \$2.6 billion in South Asia.

China, India and Indonesia were the focus of new environmental lending this past fiscal year.

China: This year, the **Hubei Urban Environmental Protection, Yunnan Environment, Second Shanghai Sewerage, and Chongqing Industrial Reform and Pollution Control Projects** were approved, to address urban air and water pollution. These four projects work with municipal and provincial authorities to develop more effective enforcement of environmental regulations, manage demand for water and other resources, and finance investments to improve air and water quality.

The Bank continued its assistance to China's National Environmental Protection Agency (NEPA) in national environmental policy, and to the Chinese Academy of Sciences in coordination of ecological research. The Bank has supported policy dialogue on industrial pollution control, and energy and water pricing. Water and wastewater tariff reforms are beginning to be implemented. Supervision continued on three natural resources projects approved in FY94, and on one of the world's largest dams, Ertan, which has a major environmental management component.

India: Within the country's economic adjustment framework, the Bank continues to seek opportunities to introduce environmentally sound policies. Three projects were approved this year. The **Coal Environment and Social**

Mitigation Project is designed to improve environmental and social aspects of Coal India's new mining investments, operations, land rehabilitation, and resettlement of indigenous and other people; the **Bombay Sewage Disposal Project** emphasizes new investment in sewage collection, disposal infrastructure and financial sustainability while strengthening the municipal authority's environmental management capacity; and the **Hydrology Project** targets institutional and physical needs for improved water resource management.

Activities in India also included a line of credit for Infrastructure Lending and Financial Services (ILFS), an intermediary which will invest in water and sanitation systems and other infrastructure operations to provide environmental and human health improvements. Their Environmental and Social Assessment Framework is being applied to other Indian private sector infrastructure development projects.

Indonesia: The **Kerinci-Seblat Biodiversity Integrated Conservation and Development Project** was approved this fiscal year. This Bank/GEF project will safeguard the Kerinci-Seblat National Park by integrating park management and conservation with local and regional development, with collaborative links between buffer zone communities, local NGOs and government. This approach is characteristic of the Bank's Biodiversity Assistance Strategy (see page 32).

The Bank-supported **PROPER**, a system that publicly rates firms on their environmental performance, invites public participation in industrial pollution control efforts by individual firms. Discussions are now underway in the Philippines to introduce a similar system.

Work also continued in Asia on policy dialogue and priority-setting:

Policy Dialogue: In Vietnam, the Bank focused on the industrialization strategy's environmental implications and technical assistance to help the Government develop enforcement standards and mechanisms. In Thailand, work continues to refine the health impacts of Bangkok's air pollution, and to calculate cost-effective measures to allow the city to attain its targets at the least cost. In Laos and Cambodia, deforestation is receiving attention to reform the policy and institutional framework for forest management.

Priority-Setting: Several South Asia projects are addressing environmental priority-setting and institutional capacity building. In Bangladesh, work is underway to implement the National Environmental Management Action Plan. In Sri Lanka, a Bank review of the 1996-99 Public Investment Program and Core Investment Program identified funding needs in the NEAP. Efforts are underway to prepare a biodiversity action plan and investment project for conserving medicinal plants. In Pakistan, two studies addressed national environmental priorities, institutions, and policies. In addition, four projects currently cover forestry and

land resource management. As part of a national biodiversity strategy, efforts are underway to improve participatory management in a number of protected areas.

Environmental Components in the Investment Portfolio

Environmental considerations are also integral to Bank-supported projects in agriculture, energy, land management, transport, water resource, and urban sectors. The extent to which projects incorporate environmental components is a measure of how well environmental concerns are addressed by more traditional—and powerful—government agencies. Examples include: land management in Bangladesh coastal areas, Laos, Shaanxi province and Gansu Hexi Corridor in China, and Sulawesi and Nusa Tenggara, Indonesia; fuel and technology upgrading in large thermal power projects like **Orissa Power Sector Restructuring Project** in India, **Henan (Quinbei) Thermal Power Project** in China, **Mongolia Coal Project**, and **Vietnam Power Development Project**; improved environmental management of highway construction in China's **Shanghai-Zhejiang Project**, and highway environmental assessment procedures and air quality monitoring in Thailand; improved water resource management in India's **Uttar Pradesh Rural Water Supply Project**, and improved urban environmental services, such as the **Second East Java Urban Development Project** and the **Manila Second Sewerage Project**.

Beyond National Boundaries

This fiscal year, a new strategy, the South Asia Sub-Regional Initiative, was initiated to look at South Asia's regional inter-country potential for sustainable development, particularly in the 'development triangle' spanning Nepal, eastern India, Bangladesh and Bhutan. Over half the 500 million people in this triangle live below the poverty line, on less than \$1 a day. Social indicators such as literacy and infant mortality are among the most dismal in the world.

The initiative would focus on the transport, cross-border commerce, energy infrastructure, and water resource sectors, and would also examine sub-regional cooperation in industry and agriculture and cross-cutting themes such as environment and human resource development. It would look at

East Asia & The Pacific Environmental Projects

Country	Project Name	FY	Bank (\$m)	Total Cost
China	Beijing Environment	92	125	299
	Ship Waste Disposal	92	15	64
	Ship Waste Disposal*	92	30	65
	Tianjin Urban Development and Environment	92	100	195
	Environment Technical Assistance	93	50	70
	South Jiangsu Environment Protection	93	250	584
	Forest Resource Development and Protection	94	200	356
	Loess Plateau Watershed Rehabilitation	94	150	259
	Shanghai Environment	94	160	457
	Sichuan Gas Transmission and Distribution Rehab*	94	10	123
	Liaoning Environment	95	110	351
	Nature Reserves Management*	95	18	24
	Chongqing Industrial Reform and Polln. Control	96	170	478
	Hubei Urban Environmental Protection	96	150	370
	Second Shanghai Sewerage	96	250	633
Yunnan Environment	96	160	310	
Ozone Depletion Projects (31)**	91-96	56	56	
Indonesia	Forestry Institutions and Conservation	88	30	63
	Yogyakarta Upland Area Development	91	16	25
	BAPEDAL Development Technical Assistance	92	12	15
	Integrated Pest Management	93	32	53
	National Watershed Management and Conservation	94	57	488
	Surabaya Urban Development	94	175	618
	Kerinci-Seblat Bio-Integrated Cons. and Development	96	19	47
	Kerinci-Seblat Bio-Integrated Cons. and Development*	96	15	47
Korea Rep.	Pusan and Taejon Sewerage	92	40	130
	Environmental Research and Education	93	60	97
	Kwangju and Seoul Sewerage	93	110	530
	Environmental Technology Development	94	30	156
	Ports Devel. & Env. Improvement	95	100	1107
	Waste Disposal	95	75	305
Laos PDR	Forest Management and Conservation	94	9	20
Malaysia	Ozone Depletion Projects (21)**	91-96	11	11
Philippines	Environment & Natural Resource Management	91	224	369
	Leyte-Luzon Geothermal*	94	30	1334
	Ozone Depletion Project**	91-96	12	12
Thailand	Promotion of Electricity Energy Efficiency*	93	9.5	89
	Clean Fuels & Environmental Improvement	95	90	370
	Ozone Depletion Project**	91-96	13	13

"Poor countries cannot afford to 'grow now and clean up later'; environmental sustainability has to be integrated in the design of policies and programs at both the macro and the sectoral level."

Joseph Wood, Vice President, South Asia



S. PAGGIOLA

'hardware', like strategic road or rail links, gas pipeline grids, and multipurpose dams, and "software" options, such as international agreements, trade and transit policies, comprehensive management of international river basins, and energy pricing. The initiative will seek to collaborate with various stakeholders in the sub-region.

Other regional efforts are:

- Analysis of transboundary environmental issues in China, Far East Russia, Japan, and the Koreas. A report has been prepared examining the shifts in the region's timber trade as countries implement environmental protection policies.
- The RAINS-ASIA program analyzes acid rain across Asia. RAINS-ASIA Phase II is beginning to apply the Phase I model in China, Indonesia, and Thailand. RAINS-Asia recently received support from Japan and Norway for Phase II.
- The Metropolitan Environmental Improvement Project (MEIP) supports urban management capacity building in Beijing, Bombay, Colombo, Jakarta, Katmandu, and Manila. MEIP receives funding from Belgium, the Netherlands, and Australia. MEIP has also initiated work in Vietnam, and is extending activities to secondary cities in Philippines, Sri Lanka and Indonesia.
- The Cleaner Production Initiative assists programs in Vietnam, China, Philippines, Indonesia, India, and Sri Lanka, focusing on policy and institutional development, analysis of economic instruments, information dissemination, and training and technology transfer.

The GEF/Bank **India Ecodevelopment Project**, which has been negotiated and presented to the Bank's Board, aims to conserve biodiversity in seven globally

significant protected areas by collaboration between local people and government through an ecodevelopment strategy. This strategy aims to address the local people's impact on the protected areas and the areas' impact on them. Finally, preparation for GEF climate change projects progressed in India, Pakistan, and Sri Lanka.

Looking Ahead

The challenge to Asian countries is to perform as well on the environmental

front as they have on the economic front. Future work will continue to emphasize capacity in environmental agencies and other government agencies responsible for environmental investments in the urban and rural sectors. Urban, industrial, water, and energy issues will continue to be at the forefront of environmental problems. With a combination of country-level and regional work, the Bank will continue to assist Asian countries in these environmental challenges. Even as Bank lending to the more economically successful Southeast Asian countries declines, the Bank's involvement in non-lending services such as environment-related policy advice and cross-border initiatives will continue in Asia.



This article was written by Ramesh Ramankutty and Carter Brandon, both of the Asia Region Technical Department's Environment and Natural Resource Division (ASTEN).

South Asia Environmental Projects				
Country	Project Name	FY	Bank (\$m)	Total Cost
Bangladesh	Forest Resources Management	92	50	59
Bhutan	Trust Fund for Environmental Conservation* Third Forest Development	92	10	20
		94	5	9
India	Integrated Watershed Development (Hills)	90	75	75
	Integrated Watershed Development (Plains)	90	55	55
	Industrial Pollution Control	91	157	236
	Maharashtra Forestry	92	124	142
	Alternate Energy*	93	26	186
	Renewable Resources Development	93	190	440
	Uttar Pradesh Sodic Lands Reclamation	93	55	80
	Andhra Pradesh Forestry	94	77	8
	Forestry Research Education and Extension	94	47	56
	Bombay Sewage Disposal	96	192	260
	Coal Environment and Social Mitigation	96	65	80
	Hydrology	96	142	178
	Industrial Pollution Prevention	95	168	353
Madhya Pradesh Forestry	95	58	67	
Ozone Depletion Projects (3)**	91-96	22	22	
Nepal	Hill Community Forestry	89	31	45
Pakistan	Second Scarp Transition	91	20	49
	Environmental Protection and Resource Conservation	92	29	57
	Northern Resource Management	93	29	40
	Fardwah E. Sadiqua Irrigation and Drainage	93	54	71
	Balochistan Natural Resource Management	94	15	13
	Punjab Forest Sector Development	95	25	34
Sri Lanka	Forest Sector Development	89	20	31
	Colombo Environmental Improvement	95	39	49

* Global Environment Facility

** Montreal Protocol (includes several subprojects)



Eastern Europe and Central Asia

Albania	Lithuania
Armenia	Macedonia
Azerbaijan	Moldova
Belarus	Poland
Bosnia-Herzegovina	Portugal
Bulgaria	Romania
Croatia	Russian Federation
Cyprus	Slovak Republic
Czech Republic	Slovenia
Estonia	Tajikistan
Georgia	Turkey
Hungary	Turkmenistan
Kazakhstan	Ukraine
Kyrgyz Republic	Uzbekistan
Latvia	

As most of its countries transform to market economies, the Europe and Central Asia region's environment has improved. Pollution is declining, and air, water and soil quality is improving. Lead and heavy metal dust levels have decreased in response to lower outputs and new emissions control measures. Particulate and sulfur dioxide emissions from large stationary sources have decreased through industrial decline and price adjustments in the power and metallurgy sectors. Nitrates, heavy metals and toxic chemicals in drinking water have been reduced, and waste water collection and treatment has improved in areas like the Baltic and Black Seas.

But environmental progress has been mixed. In many areas, air quality improvements appear to be less than proportional to the fall of total emissions. Even though particulate emissions from large sources have decreased substantially in some areas, increased emissions from smaller sources like cars, small boilers, households and new commercial establishments have meant that average exposure has remained almost unchanged. Bacteriological contamination risk remains high in drinking water, and may even increase in places with deteriorating water utility operation and maintenance.

Countries in the region with advanced market reforms are more likely than less reformed economies to keep pollution down as they increase their GDP and industrial production. Phasing out subsidies and eliminating market distortions provide a better foundation for efficient natural resource use and sustainable environmental improvements (see *Figure page 19*). But even countries successfully transforming to market economies need to complement their reform measures with effective environmental policies and institutional frameworks. Proper environ-

mental management systems need to be developed with clear sets of environmental priorities, established within the financial constraints of the transition process. Since the region's countries are embarking on transition strategies which vary in objectives, speed of transformation, and emerging partnerships, they need access to a variety of instruments and institutional and investment support. The region's most important new challenge is to combine economic growth and

"Unless environmental concerns are addressed head-on during the economic and enterprise transition in the Region, there is a serious risk that the recent environmental gains will be lost as growth resumes."

Johannes Linn,
Vice President, ECA

recovery with environmentally sustainable improvements.

Meeting the Challenge

Since the early 1990s, the Bank has helped the region's countries establish realistic regional and national targets for environmental improvements. At a regional level, the Bank has contributed to developing and implementing the Environmental Action Programme (EAP) for Central and Eastern Europe. Nationally, the Bank supported 14 countries as they prepared national environmental action plans (NEAPs) or environmental strategies. Programs have also been launched in partnership with Azerbaijan, Armenia, Uzbekistan and Kazakhstan, and in collaboration with the international Task Force for the Implementation of the EAP, the WHO and NGOs.



In the past year, the Bank has sought to support the region's countries by investing in environmental projects with strong institutional development components, increasing projects with environmental components in the investment portfolio, and enhancing countries' capacity to address environmental issues beyond national boundaries.

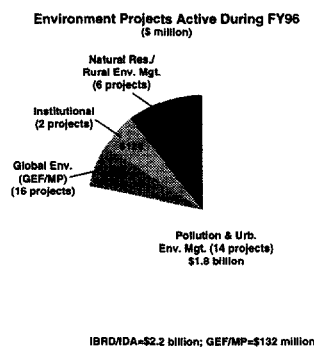
The Environmental Project Portfolio

Currently, the Bank's environmental portfolio in the region consists of 22 projects (in addition to 19 GEF and 4 MP projects), in Cyprus, Estonia, Latvia, Lithuania, Poland, Russia, Czech Republic, Turkey and Slovenia. The portfolio's pollution and urban environmental management projects deal with oil spill problems, urban air pollution abatement, and improving water and sanitation. The natural resources/rural environmental management projects deal with land-based sources of pollution affecting the Baltic Sea, and forest management for watershed protection or biodiversity conservation. Institution building projects are designed to develop natural resources management capacity, and energy projects promote energy efficiency or the use of renewables. The total Bank support for these projects is almost \$2.2 billion out of a total project cost of \$4.8 billion (*Table*).

During FY96, the Bank committed financing for two projects in Lithuania and one in Slovenia, with broad regional benefits which go beyond environmental problems of national priority. In Lithuania, the **Siauliai Environment Project**, the seventh Bank pollution project for the Baltic Sea region, has a water and wastewater improvement and an environmental management component, and the Bank/GEF-supported **Klaipeda Geothermal Demonstration Project** will

provide technical assistance and investment for construction of a geothermal demonstration plant to provide energy for a district heating system. The plant will bring about reductions of 56,000 tons of CO₂ and 1,200 tons of SO₂ annually, and will demonstrate the value of developing indigenous geothermal energy resources.

The **Slovenia Environment Project** is designed to reduce particulate and sulfur dioxide emissions in some of the country's most heavily polluted cities.



The project involves institutional strengthening and an environmental management scheme for the Soca Valley. An Air Pollution Abatement Fund (APAF) will be established as a trust fund managed by the Slovenian Eco-fund to finance conversion from coal to cleaner fuels or district heating systems. Ultimately, the APAF will become a self-sustaining revolving loan fund for similar projects in other Slovenian polluted cities.

Environmental Components in the Investment Portfolio

In this past fiscal year, Bank-approved projects in the region have components which address environmental quality and management. These components serve to identify and create measures to mitigate possible negative environmental consequences, fully capture potential environmental benefits, and create an institutional base to stimulate the link-

ing of environmental objectives with sectoral development.

Poland's **Bielsko-Biala Water and Wastewater Project** is designed to support rehabilitation and improved management of the country's water and wastewater sector, as are similar projects in Wroslaw, Krakow, Bydgoszcz, and Warsaw. The project aims to improve the Biala and Vistula Rivers' environmental quality by reducing pollution and industrial waste discharges. The project initiates combined sewer overflow control programs, introduces a more effective monitoring program for industrial waste discharges, and institutes a technical assistance and an institutional strengthening program.

In Kazakhstan, the **Irrigation and Drainage Improvement Project** will improve existing drainage technology and reduce water losses, waterlogging and salinity problems, and help reduce pesticide use through farmer training and information dissemination. The project will also help strengthen legislative, monitoring and enforcement capacities in the Ministry of Ecology and Bioresources. In the **Estonia Agriculture Project**, a land use management component helps the Ministry of Environment prepare a wetlands management strategy in cooperation with the World Wide Fund for Nature, finances laboratory equipment for environmental monitoring, and funds environmental studies for future drainage investments.

Two energy sector projects in Moldova and Romania have included measures to improve efficiency in power production, reduce leaks and waste, and curb air pollution. The **Moldova Energy Project** would also upgrade financial management systems to reduce non-technical losses, facilitate better financial decision-making and induce subsequent sector reforms. The **Romania Power Sector Rehabilitation**

Project envisages technical and efficiency measures which would result in significant reductions in NO_x, SO₂ and particulate emissions. The project would also provide technical assistance for institutional strengthening in environmental management, and health and safety improvements.

The tendency to incorporate environmental concerns is noticeable not only in sectoral lending, but also in structural adjustment operations. Of the 41 structural adjustment operations in the region since 1990, including 8 this fiscal year, 21 contain energy pricing conditions. Regional policy work and

research undertaken by the Bank has also contributed to integrating environmental concerns and management. New policy reviews and programs, such as the Gas Sector Review for Poland, Coal Sector Review for Ukraine, Oil and Gas Issues Study for Uzbekistan, Agricultural Sector Review for Georgia, Transport Sector Review for Kazakhstan, and Energy Sector Review for Macedonia, are likely to contribute positively to closer coordination of environmental and economic development objectives.

Beyond National Boundaries

Many of the region's national agendas address environmental concerns beyond their boundaries through regional programs and support from the GEF.

The Bank has participated in collaborative efforts to improve the Baltic, Black, Aral and Caspian Seas, and the Danube River Basin.

Through the Baltic and Black Sea Environmental Programs, the Bank has moved quickly from regional problem identification and priority-setting to project preparation and financing investments. The **Baltic Sea Environmental Program** has focused on preventative and restorative actions to protect the sea based on 130 identified 'hot spots,' and has recommended policy and legislative reforms and supported institutional strengthening, research, and public environmental education. The **Black Sea Environmental Program** has analyzed transboundary and local environmental issues, identified urgent investment actions and supported the Urgent Investment Portfolio, facilitated multi-sector coordination, and provided technical assistance for local institutional capacity-building. Through the program's integrated coastal zone management and biodiversity components, the Bank has strengthened institutional capacity through training, establishing activity centers, expanding information networks, and supporting national reports and pilot projects.

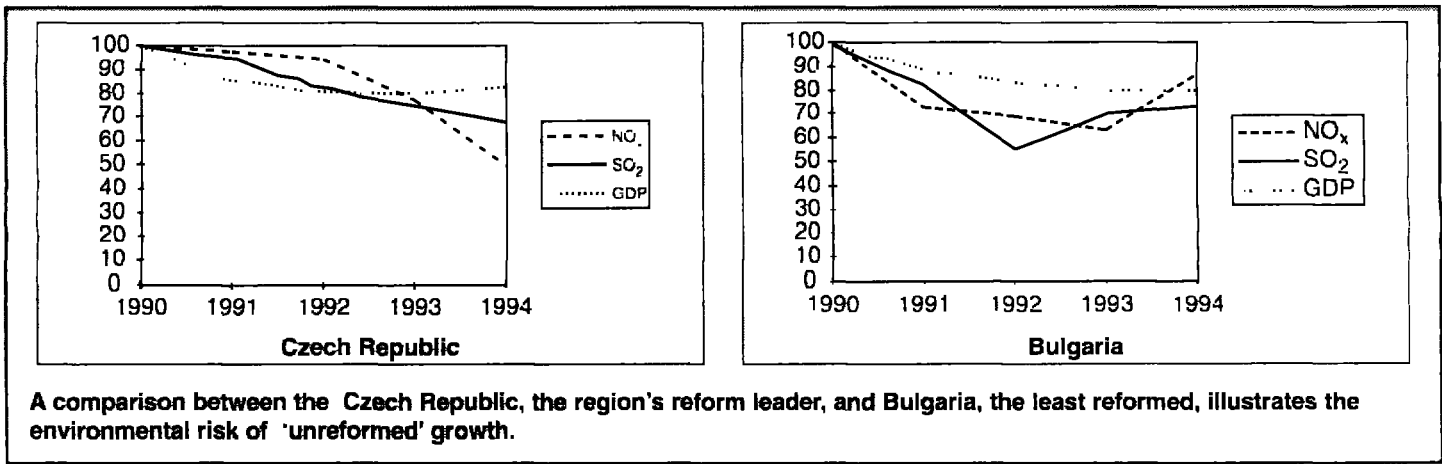
In the **Environmental Management of the Danube River Basin Project**, the Bank was involved in agricultural studies in Moldova, pre-investment work for

The Environmental Project Portfolio

Country	Project Name	FY	Bank (\$m)	Total Cost
Belarus	Biodiversity Protection*	93	1	1
Bulgaria	Ozone Depleting Substances Phase-out*	96	11	14
Cyprus	Limassol Amalthus Sewerage and Drainage	90	25	69
	Southeast Coast Sewerage and Drainage	92	32	103
Czech Republic	Power and Environmental Improvement	92	246	246
	Biodiversity Protection*	94	2	3
	Phaseout of Ozone Depleting Substances*	95	2	4
Estonia	District Heating Rehabilitation	94	38	65
	Haapsalu and Matsalu Bays Environment	95	2	8
Hungary	Phaseout of Ozone Depleting Substances*	96	7	8
Latvia	Liepaja Environment	95	4	21
Lithuania	Klaipeda Environment	95	7	23
	Klaipeda Geothermal Demonstration	96	6	18
	Klaipeda Geothermal Demonstration*	96	7	18
	Sauliai Environment	96	6	23
Poland	Energy Resource Development	90	250	590
	Environment Mgt	90	18	27
	Heat Supply Restructuring and Conservation	91	340	739
	Forest Biodiversity Protection*	92	5	6
	Forest Development Support	94	146	335
	Coal-to-Gas Project*	95	25	48
	Efficient Lighting*	95	5	5
Katowice Heat Supply	95	45	93	
Romania	Danube Delta Biodiversity*	95	5	5
Russian Federation	Environmental Mgt	95	110	195
	Emergency Oil Spill	95	99	140
	Biodiversity Conservation—Priority Response Program*	96	20	26
	Greenhouse Gas Reduction*	96	3	131
	Phaseout of Ozone Depleting Substances (first tranche)*	96	9	21
Slovak Republic	Biodiversity Protection*	94	2	3
	Ozone Depleting Substances*	96	3	6
Slovenia	Environment	96	35	55
	Phaseout of Ozone Depleting Substances*	96	6	10
Turkey	Izmir Water Supply and Sewerage	87	184	522
	Istanbul Water Supply and Sewerage	88	218	570
	Ankara Sewerage	90	173	557
	Bursa Water Supply and Sanitation	93	130	258
	Eastern Anatolia Watershed Rehabilitation	93	77	121
	In-Situ Conservation of Genetic Biodiversity*	93	5	6
	Ozone Depletion Projects (41)**	91-98	11	11
Ukraine	Danube Delta Biodiversity*	94	2	2
	Transcarpathian Biodiversity Protection*	94	1	1

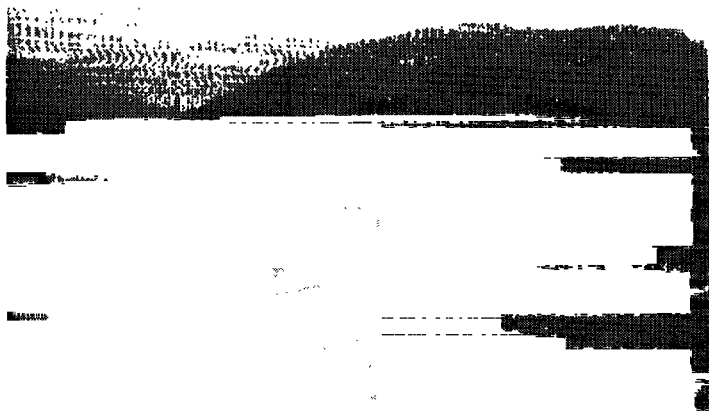
* Global Environment Facility

** Montreal Protocol (includes several subprojects)



the Budapest wastewater treatment project, and a public awareness campaign for the Bucharest water supply project.

Seven Bank/GEF projects were approved in the region this past year. Projects in Bulgaria, Hungary, Russian Federation and Slovenia addressing ozone depleting substances (ODS) phaseout will collectively eliminate more than 4500 metric tons of Ozone



Depleting Potential (ODP) annually. The Klaipeda Geothermal Demonstration Project described above is linked to greenhouse gas (GHG) reductions, and the **Russia Greenhouse Gas Reduction Project** will determine the principal sources of GHG emissions from natural gas production, transport and use, and the most cost effective options for their reduction. The **Russia Biodiversity Conservation-Priority Response Program** aims to establish a national biodiversity conservation strategy, provide institutional support and technical assistance to critical protected areas, and support integrated natural resources management in the Lake Baikal region.

The Challenges Ahead

Bank projects in the region are designed to promote long-term solutions through sustainable policy changes, financing mechanisms and institutional capacity-building. Projects are also designed to have a demonstration effect. In the narrow view, a project is successful if it achieves specific environmental objectives, such as

improved air, water and soil quality. In the broader view, success must be measured by the project's value and replicability as a model for future activities. The Bank is committed to supporting both perspectives.

A. BOND

Financing sources are diversifying in ECAS reforming economies, and the emerging private sector is becoming the main source of growth, income, and employment. But the pollution potential is increasing as private firms, primarily small and medium-size ones, enter the market, and they require different environmental standards and enforcement policies than the large, state-owned enterprises in the old centrally-planned economies. The Bank can help the central and local environmental authorities develop adequate policies for the dynamic new private sector. The shift from point to non-point sources of airborne emissions also represents a challenge. As private car ownership and road transport increases

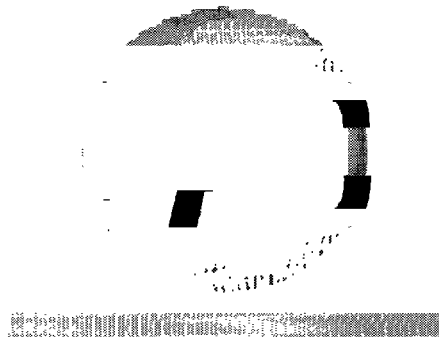
and certain heavy industry decreases, vehicular traffic is becoming the main source of lead pollution in urban areas. The issue goes beyond simple numbers of automobiles: it affects policies and broader trends in fuel substitution, transport, and shipping. Effective policies and incentives must be implemented to address these complex, emerging challenges. Some countries in the region, such as the Slovak Republic, have instituted policy and tax changes in conjunction with targeted investments to address the problem of airborne lead emissions. Others have asked the Bank for technical and investment assistance.

The regional economic picture is changing rapidly. Some countries in Central and Eastern Europe are facing the immediate challenge of European Union accession; others are undertaking major structural changes and building new trade and economic zones. The Bank must respond appropriately to each of these differentiated needs. For the accession countries, the Bank can be instrumental in proposing least-cost strategies for meeting the EU's environmental requirements and financing parts of the public investment programs. For the majority of the former Soviet Union (FSU) countries, outside of the immediate EU expansion, the Bank can mobilize support for economic recovery and environmental management improvements.



This article was written by Kristalina Georgieva and the ECA/MNA Technical Department's Environment Division (EMTEN).

Latin America and the Caribbean



Argentina	Haiti
Bahamas	Honduras
Barbados	Jamaica
Belize	Mexico
Bolivia	Nicaragua
Brazil	OECS Member
Chile	States
Colombia	Panama
Costa Rica	Paraguay
Dominican Republic	Peru
Ecuador	Suriname
El Salvador	Trinidad & Tobago
Guatemala	Uruguay
Guyana	Venezuela

Latin America and the Caribbean has emerged from the economic stagnation of the 1980s. Today, democracy is spreading, the private sector's performance is dramatically improving, productivity and exports are on the rise, per capita income is growing, and inflation continues to fall.

Against this bright economic picture, overcrowded and polluted cities, persistent poverty, and threatened biodiversity stand in stark contrast.

More than 70% of Latin America's people live in urban areas. An estimated 300 million city dwellers generate 225,000 tons of solid waste every day, much of which is discharged into water bodies, open dumps and wetlands, contaminating surface and ground water. Less than 5% of cities' sewage is treated. Urban air is severely polluted by motor vehicles and uncontrolled industrial emissions.

More than a third of the region's people live below the poverty line. Most of the 40 million indigenous people, the bulk of the 'absolute poor', are excluded from the development process and deprived of income opportunities and basic public services like education, health and housing. To survive, the poor too often resort to over-using environmentally fragile areas.

The region is the most biologically diverse on the planet, but its biodiversity is being severely threatened. The Amazon Basin alone harbors about 90,000 known species of higher plants, 950 bird species, 300 reptile species, 3,000 fish species, and uncounted millions of insect species. But the region's forests, grasslands, wetlands, coral reefs, and other natural habitats are being severely degraded, or destroyed.

In light of these problems, the region's

challenge is to align economic growth with social equity, sustainably manage biologically diverse areas and control urban environmental problems.

Meeting the Challenge

During the 1990s, the region's countries began to address this challenge with the Bank's support. The number of Bank-funded environmental projects has doubled in this period, as has Bank support for health, education and population projects.

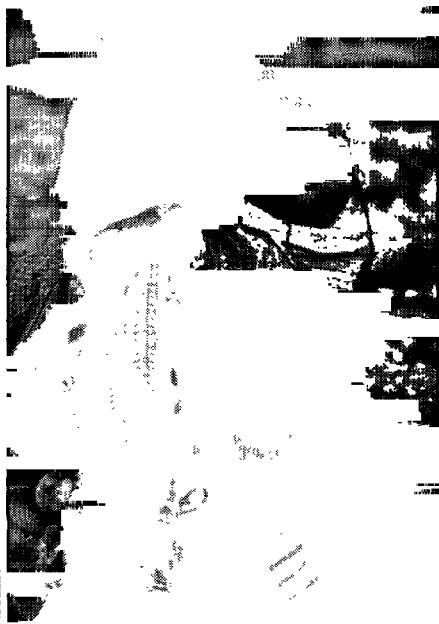
"Sustainable economic development is inseparable from wise management of natural resources."

Shahid Javed Burki, LAC Regional Vice President

In view of the need to take a strategic approach to environmental reform, many of the region's countries have now prepared National Environmental Action Plans (NEAPs). The Bank has helped them prepare these documents, and in a number of cases is helping to finance their implementation. A key new element of Bank support has been participation by beneficiaries and other private sector and local government stakeholders in project selection, design and implementation. This not only enhances the sustainability of Bank investments but also supports democratic processes and accountable systems of governance.

The Environmental Portfolio

Today, there are 35 Bank-supported projects in LAC's environmental portfolio (in addition to 8 GEF and 7 MP projects). The pollution and urban environmental management projects target pollution from industrial and mining operations, water pollution and



D. CASSELLS

sanitation, solid waste management, transport pollution and environmental quality at the U.S.-Mexican border. The natural resources and rural environmental management projects aim to improve sustainable land use planning and management for agriculture, improve cross-sectoral natural resources management, and sustainably manage water resources and forests. The institutional projects focus on improving national, regional or sectoral capacity for environmental management. The overall Bank contribution to these projects is approximately \$3.2 billion, of a total project cost of \$6.8 billion.

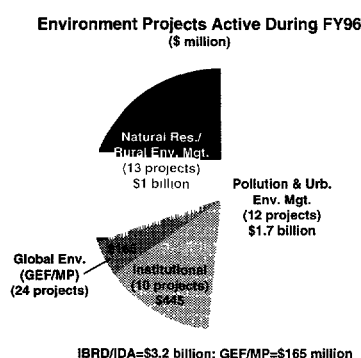
Five of these projects were added to the environmental portfolio this past fiscal year. Technical assistance projects supporting environmental institution development were approved in Colombia and Ecuador. **The Colombia Urban Environment Technical Assistance Project** is designed to strengthen municipal environmental management agencies in Cali, Medellin, and Barranquilla, formulate pollution standards, and establish pollution charging and monitoring systems for industry. **The Ecuador Environmental Management Project**, aimed at strengthening environmental management capacity to support the NEAP through a participatory approach, is targeting the Gulf of Guayaquil, the upper Amazon, and a number of urban areas.

Two natural resources and rural environmental management projects were also approved. **The Mexico Water Resources Management Project** promotes conditions for environmentally sustainable, economically efficient, and equitably allocated use of water resources by improving groundwater conservation, restoring surface water quality, water allocation, and fee collection and registry of water rights for users. **The Brazil Environmental**

Conservation and Rehabilitation Project provides a loan to the parastatal Companhia Vale do Rio Doce (CVRD), which operates mining, industrial, rail and port facilities, to finance investments in air, water, and soil pollution control and land reclamation. Components of the project are aimed at improving the welfare of communities and ecosystem conservation. CVRD is also implementing environmental management systems throughout its operations, aimed at controlling all their environmental aspects.

resource use and greater involvement of local communities and private owners. These are the **Argentina Forestry Development Project**, the **Brazil Rural Poverty Alleviation and Natural Resources Management Project**, and the **St. Lucia Watershed and Environmental Management Project**. The **Colombia Santafé Project** includes a component to protect the wetlands in the city of Santafé de Bogotá and surrounding areas. These wetlands, now almost totally destroyed, are rich in endemic birds, fish, and other organisms.

In response to the urbanization challenge, governments have realized the need to work with the private sector to augment public sector investments. Privately operated companies are increasingly assuming responsibility for basic infrastructure services like water supply, sanitation and public transport. The Bank is working with national, state and local governments to support the transition from publicly controlled environmental and infrastructure services to a system where the state takes on key regulatory and monitoring functions and transfers some operations and investments to the private sector, as in the **Brazil Federal Railways Restructuring and Privatization Project**. Partnerships with the private sector have also been encouraged in environmental policy implementation. Self-reporting, environmental audits, voluntary agreements and formation of semi-independent river basin authorities are increasingly being advocated for controlling the region's industrial pollution.



The Bolivia Environment, Industry and Mining Project was designed within the context of privatization in the state-dominated mining sector. It is aimed at implementing a regulatory framework to assure sound environmental management of privately-led mining and industrial activities. It also helps remediate contamination from historical mining activities, for which the state accepts responsibility.

Environmental Components in the Investment Portfolio

In addition to the projects primarily targeted toward environmental improvement, a number of other projects include components built in to improve land, water, and forest management, through more sustainable

Indigenous People and Civil Society

Since 1994, the region has allocated about \$2 million in Institutional Development Fund grants for capacity building for indigenous communities in

The Environmental Project Portfolio

Country	Project Name	FY	Bank (\$m)	Total Cost
Argentina	Ozone Depletion Project**	91-96	22	22
Bolivia	Eastern Lowlands Regional Development	90	35	55
	Biodiversity and Conservation*	93	5	8
	Environmental Technical Assistance	93	5	9
	Environment, Industry, & Mining	96	11	50
Brazil	Second Industrial Pollution Control	87	50	100
	Minas Gerais Forestry Development	88	49	100
	Land Management I - Parana	89	63	136
	Land Management II	90	33	72
	National Environment	90	117	166
	Mato Grosso Natural Resource Management	92	205	286
	National Industrial Polln Control	92	50	100
	Rondonia Natural Resource Management	92	167	228
	Minas Gerais Water Quality and Polln Control	93	145	308
	Water Quality and Polln Control-Sao Paulo Parana	93	245	494
	Espirito Santo Water Supply and Coastal Polln Mgr	94	154	308
	Brazilian Biodiversity Fund*	96	20	25
	Environmental Conservation and Rehabilitation	96	50	110
	National Biodiversity Project*	96	10	20
	Ozone Depletion Project**	91-96	11	11
Chile	Second Valparaiso Water Supply and Sewerage	91	50	142
	Environment Institutions Development	93	12	33
	Ozone Depletion Projects (2)**	91-96	2	2
Colombia	Natural Resource Management Program	94	39	65
	Urban Environment Technical Assistance	96	20	40
Costa Rica	Tepna Wind Power*	94	3	31
Ecuador	Lower Guayas Flood Control	91	59	98
	Biodiversity Protection*	94	7	9
	Mining Development and Environmental Control — TA	94	14	24
	Environment Management	96	15	20
Ozone Depletion Project**	91-96	2	2	
Honduras	Environment Development	95	11	13
Jamaica	Demand Side Management Demonstration*	94	4	13
Mexico	Environment and Natural Resources Protected Area Program*	92	50	127
	Transport Air Quality Management	92	25	32
	High Efficiency Lighting Pilot*	93	220	1087
	Northern Border Environment	94	10	23
	Second Solid Waste Management	94	368	762
	Water and Sanitation II	94	200	416
	Water Resources Management	94	350	770
	Ozone Depletion Projects (2)**	91-96	187	342
OECS Countries	Solid Waste Management	95	13	51
	Ship-Generated Waste Mgt	95	13	51
Paraguay	Land Use Rationalization	92	29	41
	Natural Resources Management	94	50	79
Peru	National Trust Fund for Protected Areas*	95	5	7
Trinidad and Tobago	Environmental Management	95	6	11
Uruguay	Natural Resources Mgt and Irrigation Development	94	41	74
	Ozone Depletion Project**	91-96	2	2
Venezuela	INPARQUES	95	55	96
	Ozone Depletion Projects (6)**	91-96	9	9
Wider Caribbean	Wider Caribb Initiative for Ship-Generated Waste*	94	6	6

* Global Environment Facility

** Montreal Protocol (includes several subprojects)

Chile, Colombia, Bolivia, Ecuador, Nicaragua and Mexico. Following participation in workshops, the communities have been able to design and negotiate their own development strategies for presentation to government and the Bank. Beginning in FY96 with the **Ecuador Indigenous Peoples Development Project**, this is leading to a new generation of lending operations targeting indigenous development needs in Latin America. Mitigating against risks of impoverishment from displacement and resettlement by Bank investments is a key objective. Countries are receiving technical and financial assistance to prepare sound resettlement approaches in more than 15 ongoing investment operations in the region. The Bank also continues to support poverty alleviation projects such as the **Haiti Employment Generation Project**.

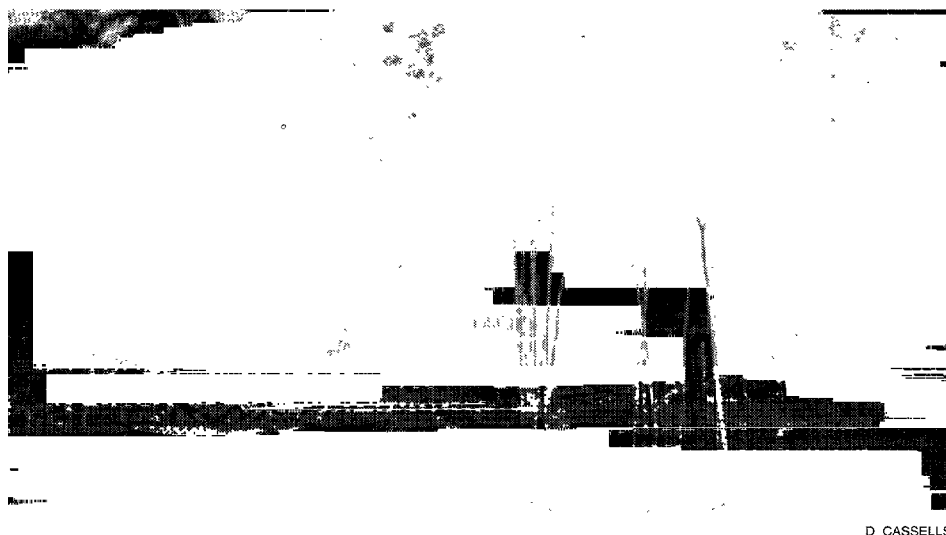
The Bank is also supporting civil society participation in development planning and decision making. It has recruited and trained 10 NGO and Social Analysis Specialists, and posted them with its Resident Missions to support civil society participation in 20 'flagship' operations which already entail some partnership between government and civil society, and another 40 new projects. The first generation of projects to include Participation Action Plans as in their strategy are expected in FY97. From there on the challenge will be to mainstream participatory approaches.

Beyond National Boundaries

On a broader level the Bank, with the World Wildlife Fund and many collaborators in Latin America, contributed analytical work on the definition of a biodiversity conservation strategy for the region. *A Conservation Assessment of the Terrestrial Ecoregions of Latin America and the Caribbean*¹ was written in partnership with World Wildlife Fund and formally launched at the Bank's Third Annual ESD Conference in October 1995. This work is being complemented by a series on *Critical Natural Habitats in Latin America and the Caribbean*,² of which the first volume, covering the Southern Cone (Argentina, Paraguay, Uruguay, and Chile), has already been

produced. This book will improve Environmental Assessment (EA) in infrastructure and other development projects, and will help identify sites for new conservation investments.

Another effort, the region-wide training program in EA, supports national stewardship programs. A grant from the Norwegian Consultant Trust Fund enabled the Bank to support EA training for regional staff and NGOs in Colombia, Peru, Brazil, Jamaica, Dominican Republic, Ecuador, Honduras and Nicaragua. Over 500 government officials and NGOs have been trained in EA techniques and methods, Bank environmental and social policies, and inter-sectoral EA analysis.



The Bank's support for natural resource management and biodiversity protection also includes several GEF grants. The number of GEF projects under implementation in LAC increased to 11 during FY96, with two new biodiversity projects in Brazil. Six GEF projects in the region now support biodiversity conservation, three are targeted at climate change, and two support international waters initiatives.

A recently completed review of the GEF Pilot Phase concluded that stakeholder participation is key to successfully preparing conservation projects. The two new projects in Brazil look to promote biodiversity conservation through innovative public and private

sector partnerships. The two closely linked projects received a combined \$30 million in GEF funding. The **National Biodiversity Project**, managed by the Ministry of the Environment (MMA), includes a series of workshops to set biome-level priorities for biodiversity conservation and a national biodiversity conservation strategy. The **Brazilian Biodiversity Fund (FUNBIO)**, which provides financing for projects meeting the priorities being established in the MMA-managed workshops, takes an innovative approach to project management by giving responsibility for fund management to the Getulio Vargas Foundation, an NGO. New biodiversity projects being prepared for submission to the GEF Council in the coming fis-

cal year include ones in Nicaragua and Honduras, and several others elsewhere in the region. All planned investments in Central America are linked to the concept of a Meso-American Biological Corridor and include efforts to integrate economic and biological interests in long-term planning.

The Challenges Ahead

The sustainable development challenges in the region are formidable. Reducing the gap between the rich and poor will clearly remain an essential condition for its success. Brazil, Colombia and Jamaica have asked for the Bank's help in formulating policies on national involuntary resettlement to advance and deepen their commitment to reducing

poverty. With Bank support, the region will also help the Andean and Central American countries establish indigenous peoples development strategies. Involving civil society in supporting environmentally sustainable development and resolving social problems will remain a key theme in the Bank's agenda into the next century.

The accelerating growth of cities in the region poses a tremendous challenge in the future, and is likely to result in a shift in emphasis from natural resources management to pollution and urban environmental management. Brazil, Mexico, Chile and Argentina already have urban populations above 75%, a pattern being repeated in other countries. Since governments can't afford the massive investments needed for urban infrastructure even with multilateral development agency help, they need to strengthen their partnerships with the private sector. Controlling urban environmental pollution is likely to depend increasingly on market-based instruments. The Bank remains committed to supporting the region in these efforts.

Biodiversity protection will also remain an important issue because of the region's extreme ecological richness. New protected areas must be established and demarcated, and the protection of vital ecosystems, such as the Amazon, Mata Atlantica, and Caribbean Sea and coastal zones, must be better enforced.

¹ "A Conservation Assessment of the Terrestrial Ecoregions of Latin America and the Caribbean." In association with the World Wildlife Fund. 1995. ISBN 0-8213-3295-3.

² "Critical Natural Habitats in Latin America and the Caribbean. Volume 1: Southern Cone (Argentina, Chile, Paraguay and Uruguay)." In collaboration with Agriconsulting S.p.A. and the World Conservation Monitoring Center. August, 1996. Latin America and the Caribbean Environment Division, (202) 676-9373. Volumes 2-4 in Draft.



This article was written by William Partridge, Chief of the Latin America and the Caribbean Regional Environment Division (LATEN). (202) 473-8622, Fax (202) 676-9373.



Algeria	Morocco
Bahrain	Oman
Egypt	Qatar
Iran	Saudi Arabia
Iraq	Syria
Jordan	Tunisia
Kuwait	United Arab
Lebanon	Emirates
Libya	Yemen
Malta	

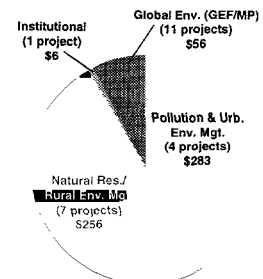
Middle East and North Africa

In the 1960s and 70s, economic growth in the Middle East and North Africa was the highest in the world, primarily because of oil exports. During these years, in a drive for self-sufficiency, the region embarked on a strategy of industrial and agricultural protectionism supported by trade barriers, a strategy encouraged by publicly subsidized energy, water and agrochemicals.

But by the 1980s, as international oil prices slumped in the wake of global overproduction, these economic gains became unsustainable and the region's countries witnessed slow or even negative per capita growth rates. By the 1990s, the 'lost decade' of the 80s prompted many governments in the region to begin economic reform programs to improve resource efficiency and spur private sector growth. In the process, however, the region came face to face with the environmental legacy of its earlier development strategy (*Box*), with its unsustainable use of natural resources and widespread environmental degradation. The region now faces four major environmental challenges:

- 60 million people are exposed to urban air pollution of particulates, lead, and sulfur dioxide. This could increase to 160 million in ten years.
- 45 million people lack safe drinking water and 85 million lack safe sanitation, mostly in rural areas.
- Ten of the region's 18 Bank member countries already consume more freshwater resources than can be renewed, relying on depletion of non-renewable aquifers and/or expensive desalinization of seawater.
- Land, pasture and forest degradation is threatening the livelihoods of millions of rural poor who depend for their sustenance on their surroundings.

Environment Projects Active During FY96 (\$ million)



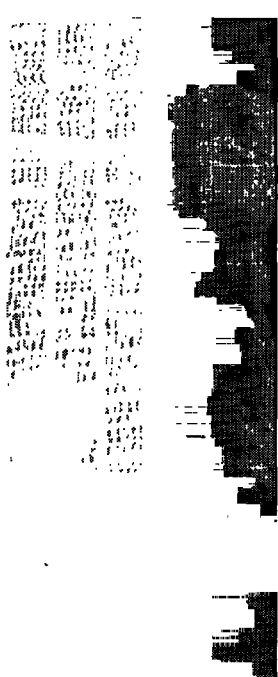
IBRD/IDA=\$545 million; GEF/MP=\$56 million

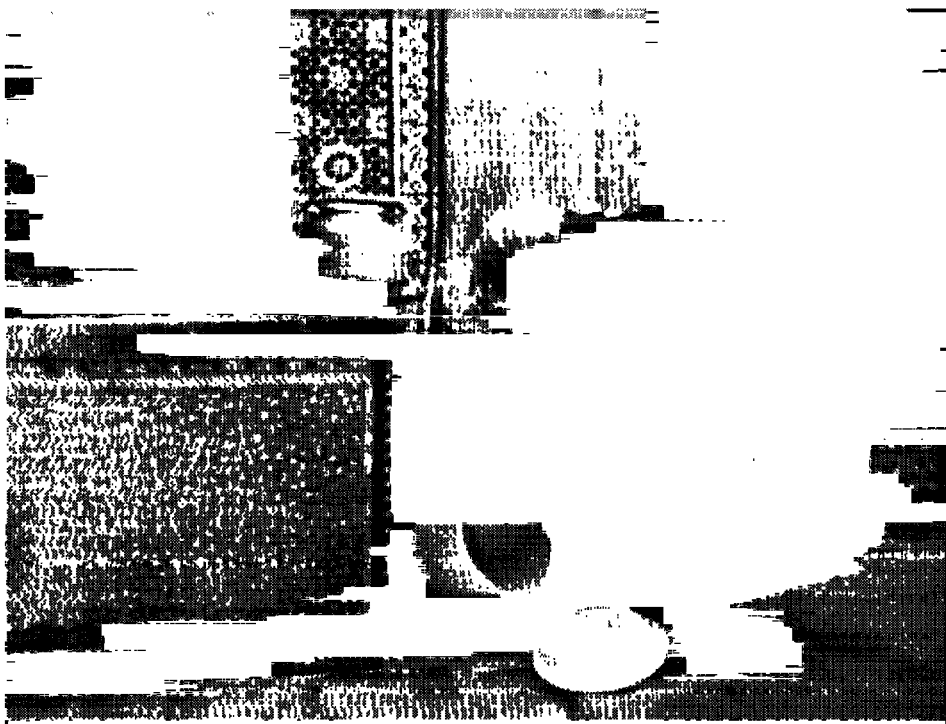
These problems now cost almost \$15 billion a year, 3% of GDP, in impaired health, premature deaths, lost natural resources, and tourism losses.

Meeting the Challenges

Today, as many of the region's countries move toward economic reform and trade integration with the European Union, the Bank is helping the region meet its environmental challenges, supporting national and regional environmental action plans and strategies, helping improve environmental management through institutional strengthening and capacity building, helping create an improved economic incentive framework for environmental protection, and providing targeted lending for 'hot spots.'

In 1995, the Bank's regional staff produced a *Middle East and North Africa Environmental Strategy*¹, a program to address environmental problems by strengthening the capacity of environmental institutions and engaging public participation, intensifying management of scarce natural resources, and arresting pollution, particularly where public health is affected. The Bank has supported this strategy through projects in its environmental portfolio, environmental components in projects in its regular investment portfolio, and programs and projects beyond national





Causes of the Region's Environmental Problems

The causes of the current environmental situation, rooted in past policies and incomplete reforms, are:

- energy policies with no accountability, that continue to supply fuel oil with high sulfur content and leaded gasoline;
- high energy consumption in relation to economic output caused by low energy prices;
- highly polluting public enterprises still responsible for the bulk of industrial air and water pollution;
- old, fuel inefficient and highly polluting vehicle fleets, replacement of which is discouraged by high import barriers;
- lack of cost recovery for water and sanitation services, which has constraint finances available for extending and improving service provision;
- massive abstraction and inefficient use of water for irrigation, encouraged by low or no-cost water and a lack of incentives for conservation and allocation to higher value uses;
- lack of adequate natural resources tenure rights and protection, coupled with rapid population growth.

boundaries, including METAP-financed activities (*Box, page 27*).

The Environmental Project Portfolio

As of today, the Bank actively supports 12 environmental projects in Algeria, Egypt, Lebanon, Morocco, Tunisia and Yemen (in addition to 7 GEF and 4 MP projects). The portfolio's pollution and urban environmental management projects aim to address environmental and public health issues related to solid waste, domestic effluent and industrial pollution. The natural resources and rural environmental management projects deal with sustainably managing forests, soils and water, and building capacity for managing environmental protection. The overall Bank contribution to these projects is \$645 million out of a total project cost of \$1.7 billion.

This fiscal year, the Bank approved two industrial sector pollution projects, in Algeria and Egypt. The **Algeria Industrial Pollution Control Project** is designed to strengthen the country's institutional and legal framework by increasing national and local capacities to design, monitor, and enforce policies and regulations, and to help finance investments aimed at pollution reduction and prevention in two industrial plants—an iron and steel complex and a fertilizer complex with several sulfuric and phosphoric acid plants.

The **Egypt Pollution Abatement Project**, prepared with METAP assistance, aims to introduce innovative, replicable market mechanisms for collaborative environmental management between financial/regulatory institutions and industrial enterprises; help the government improve its monitoring and enforcement capacity; introduce pollution prevention investment as an environmental management tool; and

promote NGO and media participation to create a public expectation for good environmental and safety practices. The investment component provides environmental financing through the commercial banking sector for industrial enterprises, on a demand basis, to mitigate pollution and comply with environmental regulations.

Environmental Components in the Investment Portfolio

Poverty and unemployment can exacerbate existing pressures on natural resources from the poor as they look to fragile 'open access' natural resources for sustenance. Environmental degradation and health hazards can also result from deteriorating public infrastructure caused by governments' budget constraints.

A number of newly approved projects in the Bank's investment portfolio for the region are designed to address this problem by creating employment

opportunities while they maximize environmental benefits. The **Egypt Second Social Fund Project** supports job creation through community infrastructure works (small scale wastewater treatment, rural roads, community centers), and small and micro-enterprise development, with environmental considerations built into the project. Public works in agriculture and water, sewerage and road maintenance financed by the **Algeria Social Safety Net Support Project** include control of soil erosion in vulnerable areas in two provinces and maintenance of watershed infrastructure in Bourmedes. The **Yemen Public Works Project** aims to promote community participation in small works such as irrigation improvement and soil conservation.

Two projects approved in FY96 support infrastructure to improve environmental and public health conditions. The **Morocco Second Sewerage and Water Re-Use Project** will improve sewerage

and wastewater services in Fez by rehabilitating and expanding the sewerage collection system and providing wastewater treatment and quality control. The project will also finance sanitary education campaigns, water quality control and credit lines for house connections to sewers in low income neighborhoods. The **West Bank and Gaza Municipal Infrastructure Development Project** also aims to improve sewerage collection, treatment and disposal systems and conserve water resources through wastewater re-use and leakage control from irrigation systems.

Projects with components to strengthen environmental management capacity include the **Jordan Export Development Project**, designed to build the banking sector's capacity for 'clean' private sector development and growth and enhance the country's export competitiveness; and the **Tunisia Industry Support Institutions Upgrading Project**, designed to develop information and research on clean technologies, upstream waste minimization and reduction, economies in the use of raw material, energy, water and hazardous substances, waste recovery and recycling, training in best practices, and environmental audits.

This past fiscal year, the Bank also helped prepare environmental strategies for Jordan and Lebanon, and completed a pollution load assessment for Saudi Arabia (on a cost reimbursable basis). Emphasis is also placed on disseminating environmental assessment procedures, and introducing environmental economics through case studies and workshops.

Beyond National Boundaries

In addition to the six GEF projects under implementation in the region, the **Jordanian Gulf of Aqaba Environmental Action Plan** was approved this fiscal year. This project will develop collaborative mechanisms for strengthening the regional capacity to protect marine biodiversity and the coastal zone. Specific objectives include: developing and enforcing the legal framework and regulations for transboundary pollution con-

The Environmental Project Portfolio

Country	Project Name	FY	Bank (\$m)	Total Cost
Algeria	Pilot Forestry and Watershed Management	92	25	37
	Water Supply and Sewerage Rehab	94	110	170
	Industrial Pollin Control	96	78	118
	El Kala National Park and Wetlands Management*	94	9	12
Tunisia	Oil Pollin Management Project for the SW Med Sea*	94	18	20
Egypt	Matruh Resource Management	93	22	31
	Private Sector Tourism	93	130	784
	Pollution Abatement	96	40	51
	Red Sea Coastal and Marine Resource Management*	93	5	6
	Ozone Depletion Project**	91-96	2	2
Iran	Tehran Transport Emissions Reduction*	94	2	4
Jordan	Gulf of Aqaba Environmental Action Plan*	96	3	13
	Ozone Depletion Projects**	91-96	2	2
Lebanon	Solid Waste & Environmental Management	95	55	135
Morocco	Second Forestry Development	90	49	100
	Environmental Management	94	6	11
	Repowering of Power Plant*	95	6	48
Tunisia	Second Forestry Development	93	69	148
	Northwest Mountainous Areas Development	94	28	50
	Solar Water Heating*	95	4	21
	Ozone Depletion Project**	91-96	1	1
Yemen Rep.	Land and Water Conservation	92	33	48

* Global Environment Facility

** Montreal Protocol (includes several subprojects)

METAP, the Mediterranean Environment Technical Assistance Program, is a program designed to strengthen the links between northern and southern rim countries as they deal with their common environmental problems, giving priority to water resources management, solid and hazardous waste management, integrated coastal zone management and coastal and marine pollution.

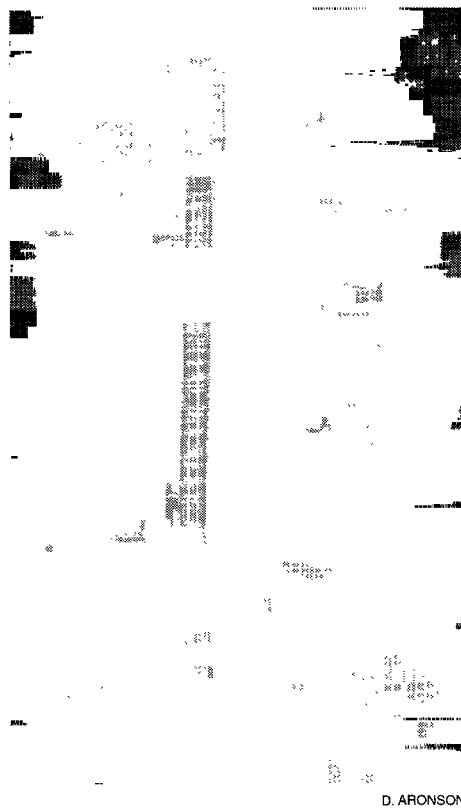
trol; safeguarding against oil pollution; devising and implementing guidelines for sustainable development of the coastal zone; and establishing and managing a marine protected area.

During FY96, the Bank's participation in METAP (*Box*) focused on preparing a pipeline of environmental investments for the Mediterranean region, in parallel with initiatives to strengthen natural resources management capacity in the basin.

By the end of the fiscal year, METAP II (1993-1995) was made up of 63 country and regional activities totalling \$18.1 million, supported by the European Commission, European Investment Bank, UNDP and the Bank. 34 were aimed at solid waste management, industrial pollution control, wastewater treatment and oil pollution control, including the Algeria Industrial Pollution Control and Egypt's Pollution Abatement Project. Regional capacity building initiatives focused on training in environmental communications, conflict mediation and negotiation and environmental economics. METAP interventions for institutional strengthening over the past year included a MEDGEOBASE land information system in Morocco, advanced phases of EIA units in Algeria and Egypt and an Environmental Strategy for Lebanon.

The Challenges Ahead

The Bank stands ready to continue its support to the region in the future to: protect public health; manage natural resources; control air pollution; increase municipal wastewater collection and treatment capacity, and industrial pre-treatment through regulation and enforcement; enhance rural develop-



ment and services; improve soil and rangeland productivity and sustainable use by reducing fertility loss, erosion, and vegetative cover and value; and manage water resources sustainably, particularly in countries with serious water shortages and contamination. The Bank is also ready to help countries in the region confront the issue of environment and international trade as they integrate with the world economy. Economic and sector work, such as Egypt's upcoming Country Economic Memorandum, will give attention to environmental product quality, the World Trade Organization and the environment, and ISO 14,000, issues in which several countries have expressed interest.

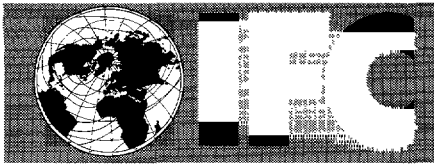
To meet the challenges ahead, METAP is leading the way towards environmentally sustainable development in the region. The Bank, with its international partners, is now launching METAP's third and final phase (METAP III, 1996-2000), a \$100 million program which will implement concrete projects in three integrated priority areas: capacity building, participation and partnerships; arresting and prevention of pollution at 'hot spots'; and integrated water and coastal areas resource management. It is envisaged that, by shifting the program's management to the region, METAP III will result in several billion dollars in environmentally related investments through such initiatives as a METAP Regional Facility at Cairo, with a UNDP-managed Capacity Building Unit, a Bank- and European Investment Bank-managed Project Preparation Unit, a Private Public Partnership which will expand partnerships and collaborations between government, business, and community groups, and a Special Grants Fund for local environmental NGOs in the METAP beneficiary countries.

The region's countries have been slow to respond to growing lead pollution from leaded gasoline, and many countries continue to use large quantities of high sulfur fuel oil near population centers and dirty diesel in transport. A few countries have introduced unleaded gasoline on a limited scale, but relative prices of leaded and unleaded gasoline provide no incentive for using unleaded gas. In the coming years, the region's countries can take advantage of other regions' experience in the move to unleaded gasoline.

¹ "Middle East and North Africa Environmental Strategy: Towards Sustainable Development. February 1995." ECA/MNA Technical Department's Environment Division (EMTEN), Fax (202) 477-0711.



This article was written by Bjorn Larsen of the ECA/MNA Technical Department's Environment Division (EMTEN), (202) 458-2153, Fax (202) 477-0711.



International Finance Corporation

“Environment is a central priority for IFC. We have a two-pronged approach: to ensure that all IFC projects are sustainable and environmentally sound, and to be more proactive in developing new ideas and initiatives to catalyze private sector investment. IFC must be a pioneer and leader in the effort to improve the environmental performance of the private sector in our developing member countries. This is a fundamental role for us.”

Jannik Lindback,
Executive Vice-President
IFC

IFC is committed to integrating environmental considerations into the mainstream of its activities, to involving civil society in major decisions, and to consulting with affected parties on sensitive projects. To promote and strengthen its role in sustainable development led by the private sector, IFC has expanded its environmental staff, reviewed its internal policies and practices, and established regular dialogues with non-governmental organizations (NGOs) and clients (*Box, page 29*).

This year, IFC launched a series of initiatives to strengthen sustainable private sector environmental activities. The Corporation worked closely with the Bank to develop the *Pollution Prevention and Abatement Handbook*, which provides environmental guidelines for projects. It also began an NGO outreach program, updated its policy on information disclosure, and strengthened requirements for project-related

consultation with local populations. Environmental staffing resources were increased substantially to provide stronger support to investment departments and to quicken the pace of new innovative environmental projects.

Environmental Due Diligence: Meeting High Standards

All IFC projects must meet high environmental standards. ‘Environment’ is a term used broadly to cover natural resources, social and cultural impacts, and health and safety. Environmental review procedures are designed to ensure consistency with the World Bank’s environmental policies and project requirements, and also with host countries’ requirements.

For IFC’s direct investments, projects are environmentally assessed using a classification process similar to the Bank’s¹, with the addition of Category FI projects, involving sub-projects

MIGA AND THE ENVIRONMENT

This past year, MIGA continued its pattern of expansion since beginning operations in 1990. In FY96 MIGA has issued 68 guarantee contracts for a total of \$862 million in coverage, and expanded its membership to 134.

Prospective MIGA projects are reviewed before a guarantee contract is issued to ensure that the investment is consonant with World Bank environmental policies and guidelines. In addition, MIGA’s guarantee contracts have always required the investor to comply with the host government’s laws and regulations. In reviewing projects, MIGA has drawn on the environmental expertise of other World Bank Group members. Initially, MIGA relied exclusively on the Bank. In recent years, the IFC has served as MIGA’s environmental advisor for all its projects. Under a formal agreement, IFC has now reviewed more than 200 prospective MIGA projects.

This year, MIGA identified the need to expand its environmental review capacity to address specific environmental issues related to prospective guarantees. It is now drafting its own environmental review procedures, which will be consistent with those of IBRD and IFC. MIGA has extended and revised its original agreement retaining IFC as its Environmental Advisor, and has secured the approval of its Board to hire an environmental liaison to deal with environmental experts in the Bank Group, corporations, and external environmental organizations.

The Africa Enterprise Fund (AEF) is IFC's special purpose vehicle for investing in small and medium-sized businesses in Africa. In FY96, 42 new projects were approved in 18 African countries in the agricultural, manufacturing, industrial, consumer services and tourism sectors, an IFC investment of \$28.5 million.

All AEF proposals are screened for environmental impacts in recognition that, in spite of their small size, their potential to pollute may be high. To help investors meet IFC's environmental requirements, the Environmental Assistance Fund was initiated as a pilot in the past year with support from Japanese Trust Funds.



Unsecured fuel drums in an ecologically sensitive area create environmental, fire, and health and safety hazards, highlighting the need to screen small scale investments.

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financed by financial intermediaries that may result in environmental impacts. In this fiscal year, IFC approved 15 category A, 135 category B, 72 category C, and 42 category FI projects.

During project planning, project sponsors that receive IFC's support must analyze environmental impacts and develop a plan to mitigate them. Financial intermediaries must develop their own capacity to conduct environmental reviews, with IFC providing training and backup support for sub-project environmental review. It is critical to continually supervise direct investments and capital market projects to fully realize the benefits and opportunities in the sponsor's environmental analysis.

What Can the Private Sector Do?

Opportunities abound for improving the environment through private sector initiatives.

In 1996, IFC and MIGA (*Box, page 28*) project sponsors dealt with a broad spectrum of environmental issues in designing projects, ranging from very basic pollution prevention, abatement and cleanup to more complex issues such as natural habitat protection, land rights for the landless, and worker education. For example, the **Kasese Cobalt Project** in Uganda helped protect an important wetland system (*Box, page 31*).

Privatization programs often provide fertile ground for environmental improvements, from staunching the flow of pollutants from inefficient operations to cleanup of contaminated sites and installation of energy-efficient and clean production technologies.

In Argentina, **Refineria San Lorenzo** (Refisan) shows how privatization can lead to environmental benefits. Refisan was established to own and

operate a former government-owned refinery in San Lorenzo. Refisan has begun a comprehensive environmental cleanup, decontaminating soil by

Senior Management Commitment

The Director of IFC's Technical and Environment Department reports directly to the Executive Vice President. Functional responsibility for integrating environmental issues into the mainstream of IFC operations has been given to a Vice President of Operations, Jemal-ud-din Kassum. IFC's General Counsel, Carol Lee, has taken a very active role in defining IFC's environmental and disclosure policies and in structuring better systems of outside accountability and communications.

biodegradation and removing oil polluting an aquifer. To avoid future contamination, Refisan is extensively upgrading equipment, replacing underground pipelines with above-ground pipelines that can be monitored and repaired. Their installation of a closed cooling water system will reduce river water intake and discharge. New air pollution control equipment has significantly reduced air emissions from refinery operations.

Promoting Social and Community Development

Social and community issues are an integral part of sustainable development. To better understand its projects'

impacts on affected communities can be significant. In the **Sucrerie Bourbon Tay Ninh Project**, a French-Vietnamese joint venture, the sponsors made a concerted effort to ensure that land rights issues were handled sensitively and that small farmers' interests were taken into account in construction and operation of a large sugar refinery. The nucleus of the land for the sugar cane fields was occupied by small farmers who had traditionally worked the land but had no legal title to it and faced potential displacement. Sucrerie and IFC worked with the local government to ensure that these farmers were able to continue to cultivate the lands they occupied. As a result, the displacement of farmers,

which will increase BSS's enrollment by 16,000 students. An education specialist, funded by a Japanese trust fund, will help develop a BSS educational action plan and disseminate best practices to other schools. All buildings will be constructed with basic fire detection and alarm systems, and will be equipped for handicapped children.

Environmental Capacity Building

IFC provides loans, equity financing and credit lines to commercial financial institutions, which in turn provide loans to local businesses for working capital, trade finance, project finance, venture capital, and equipment leasing. The development of training workshops for financial institutions has been an important IFC contribution. This year IFC continued its training program on Environmental Management for Financial Institutions, introducing senior officers from 72 institutions in 14 emerging markets to the principles and methods of environmental management. Since 1993, over 250 financial institutions have participated in this workshop.

A new, in-depth course now under development for environmental coordinators in financial institutions will focus on practical aspects of integrating environmental management into financial operations. Course development is supported by the European Commission through the IFC/EC Asia Trust Fund. IFC also conducts an internal training program to increase environmental awareness and bring up-to-date information on environmental management to staff working directly with project sponsors to design and finance environmentally sustainable projects.

Environmental Projects

Taking a proactive stance toward environmental issues means finding opportunities for private sector financing in environmental projects. "Forward looking companies are recognizing that local and global environmental concerns provide new business opportunities," says Jamil Kassum, Vice President of Operations. "The challenge is to identify and focus on such business opportunities, which represent a grow-

IFC'S ENVIRONMENTAL INVESTMENTS

IFC has developed a portfolio of environmental investments with a value of approximately \$55 million, leveraging grant funds from the Global Environment Facility and the Multilateral Fund of the Montreal Protocol and IFC co-financing to develop innovative private sector approaches. These approaches include a joint IFC/GEF program to provide financing to enable small and medium sized enterprises (SMEs) and the Poland Efficient Lighting Program (see Engaging the Private Sector, page 44).

IFC approved grants from the Montreal Protocol totaling over \$4.8 million to help private sector firms comply with requirements for phasing out chlorofluorocarbon (CFC) use. Assan Demir ve Sac Sanayi. A.S., and Tek-iz Izolasyon ve Yapi Elemanlari Sanayi. A.S., leading Turkish manufacturers of materials for the cold storage industry, will revamp their manufacturing processes to replace CFC use. Calex and Samsung-Calex, the only two manufacturers of refrigerators and freezers in Slovak Republic, will also eliminate CFC use. Together these programs will eliminate over 600 tons of CFC use per year

social impacts on communities and identify good corporate practices in working with local groups, IFC is reviewing its portfolio's social dimensions. This will enable it to help its clients address the complex social issues arising from private investment and will enhance its projects' development benefits. Initial findings suggest that across a broad spectrum of countries and sectors, IFC sponsors are involved in a range of development activities from providing communities with clean water, health services and education to sponsoring training programs and rehabilitating roads and community infrastructure in collaboration with local governments.

In projects which involve issues of resettlement and land rights, the social

including those who lacked official tenure, was prevented.

The private sector can also contribute to social development in emerging economies by investing in sectors such as education or health. The IFC-financed **Beaconhouse School System (BSS)**, Pakistan's largest privately-owned school system with more than 29,000 students in 64 schools, has focused on providing high quality education at costs affordable to Pakistan's growing middle class. Approximately 70% of the professional staff and 40% of the students are women, which is important in an area where adult female literacy rates are 21%. The IFC-financed project involves construction of 14 school buildings at multiple loca-

ing new frontier of development and investment activity.”

Developing a strong pipeline of environmental projects such as water and waste management services continues to be a priority. This fiscal year, IFC invested in the first privatization of water and sewer services in Brazil. **Aguas de Limeira (AdL)**, a 50-50 consortium of a major Brazilian construction company, CBPO, and Lyonnaise des Eaux of France assumed operational control of the water/sewer system in June 1995. AdL will provide approximately \$124 million of new investment during the 25-year concession, increasing safe drinking water and sewage collection pipes and providing treatment of domestic and industrial wastewater prior to discharge into the Tatu, the city's principal stream. The Tatu is one of the most polluted rivers in the Piracicaba, draining much of the State of São Paulo's surface waters. A major element of this program is completion of a treatment facility that the city was unable to complete with its own resources. AdL's investment will reduce the waste load in the Tatu by more than 90% over the next 5 years.

Looking Ahead

IFC has been able to promote environmentally sustainable development beyond its own projects in support of regional investment and development strategies, by establishing benchmarks for environmental performance in the developing world and Eastern Europe. Strengthening staff environmental awareness and knowledge will continue to be emphasized in day-to-day operations. As capital markets increase in importance in developing countries, IFC will continue to work closely with other multilateral financial institutions to develop a consistent, pragmatic approach to environmental management in financial intermediary lending. IFC intends to continue to act as a catalyst in developing new investment vehicles to help the private sector finance environmentally sustainable development, building on its experience and existing portfolio of environmental investments.

In the coming fiscal year, IFC will continue its efforts to provide opportunities

for private sector investments in the environment. Proposed investments such as the **Biodiversity Enterprise Fund for Latin America** will mobilize equity or quasi-equity investments in sustainable or alternative agriculture, sustainable forestry, ecotourism, or other sectors with links to biodiversity. A **Renewable**

environmentally sustainable development. Andreas Raczynski, Director of the Technical and Environment Department, summarizes this role: "IFC recognizes that our contribution represents only a small portion of the large capital flows to developing countries. Consistent with the new paradigm of private

THE KASESE COBALT PROJECT IN UGANDA

Western Uganda's Kilembe copper deposit was worked from 1956 to 1982. When the Kilembe Mine ceased operations, the mine's metallurgical operations left behind stockpiles containing nearly 1 million tons of cobalt-rich pyrite concentrate. Over the years, some of the material eroded downhill and through Queen Elizabeth National Park, filling portions of a large wetland system and stifling vegetation on Lake George. Additionally, rains leached heavy metals from the stockpiles. This threat to the first wetland designated by Uganda as a wetland of international importance will be significantly reduced as a result of the IFC/MIGA-supported Kasese Cobalt Project, through which Kasese Cobalt Company Limited (KCC) will reprocess the cobalt pyrite concentrate to produce high grade cobalt. Newly processed tailings will be placed in a more secure chemical matrix significantly less susceptible to leaching of heavy metals. Reclamation programs already underway by KCC have significantly reduced stockpile erosion to Queen Elizabeth National Park. As a result, natural soil is beginning to cover the concentrate and naturally revegetate in some areas. KCC will monitor the reclamation and revegetation programs.

Energy and Efficiency Fund will invest in on-grid and off-grid renewable energy projects. A proposed photovoltaic (PV) market transformation initiative, if approved, will combine IFC, GEF, and private sector funds to support both commercially proven and innovative PV technologies. (see Environment as a Business Opportunity, page 44).

To spearhead the Corporation's activities in financing environmentally sustainable development, IFC has created a Special Projects Unit within its Technical and Environment Department. The unit will act as a catalyst to develop and implement a variety of new financing vehicles to help the private sector address a broad range of environmental issues. According to Martyn Riddle, Manager of the Environment Division, "By centralizing management of the numerous environmental projects initiated by IFC and our projects funded by GEF, our goal is to enhance IFC's role in environmental investments and their integration into IFC investment activities."

These initiatives are steps toward realizing IFC's broader role in encouraging

sector driven development, IFC should find ways to extend its influence beyond its financial reach. Our vision is that leading private sector companies, especially those active in sensitive natural resources and infrastructure development, together with NGOs, academia, and multilateral financing institutions, would agree on broadly accepted guidelines that would govern investments in developing countries. If the World Bank Group can assist in achieving a broad agreement between these parties, it would have made a major contribution to sustainable development."

¹ Category A projects have the potential for significant and diverse impacts and require a full Environmental Impact Assessment. Category B projects may result in specific impacts for which performance standards, guidelines or design criteria can be used to avoid or mitigate impacts. Category C projects normally do not result in any environmental impact. Category FI projects involve financial intermediaries which finance sub-projects that may result in environmental impacts.

This article was written by Todd Hanson and Letitia Oliveira, of the International Finance Corporation's Technical & Environment Department (CTEED), (202) 473-3987, Fax (202) 676-9495.

Supporting the Biodiversity Convention

Impelled by the alarming loss of biodiversity around the world, 149 countries have now ratified the Convention on Biological Diversity (CBD). The Convention is built around three imperatives: conservation, sustainable use, and the equitable sharing of the benefits of biodiversity. Implementing these imperatives is now an urgent challenge to the world community, and the World Bank, along with other international partners, is committed to helping its member countries do so.

This past November, after consulting with a broad spectrum of external stakeholders and partners, the Bank presented its Biodiversity Assistance Strategy¹ to the Second Conference of the Parties to the CBD in Jakarta. The strategy is built on the recognition that protected areas are essential but not sufficient for biodiversity conservation, that significant biodiversity is located in land- and water-scapes outside protected areas, and that the opportunity cost to developing nations for not using these resources is prohibitive. This strategy now guides the evolution of Bank support from a traditional focus on targeted government-led conservation efforts to 'mainstreaming' biodiversity concerns (*Box*).

Supporting Targeted Conservation

Since the 1970s, the Bank has supported protected area establishment and management, wildlife management, conservation planning, buffer-zone management and ex-situ conservation. Starting from a fairly modest level, Bank assistance to biodiversity conservation has grown rapidly. The portfolio now totals \$805 million for 95 projects or project components in 54 countries, and an additional leveraged \$536 million from borrowing governments and other donors, bringing the total support to \$1.34 billion since 1988. Over the last three years, this has involved average annual incremental support of \$198 million. In this last fiscal year, the Bank approved an additional 9 projects at \$134 million.

Natural Habitats Policy

In addition to conserving biodiversity, the Bank's activities must not inadvertently harm biodiversity. With this in mind, the Bank finalized its Operational Policy on Natural Habitats (*page 39*)

last September, recognizing natural habitat loss as the main threat to biodiversity. As a result, the Bank does not support projects which would significantly convert or degrade critical natural habitats, and avoids other natural habitats entirely if possible by locating projects on previously cleared or converted lands. Where avoidance is not feasible and environmental assessment indicates that a project would significantly affect natural habitats, the design must include mitigation measures such as establishing and maintaining an ecologically similar protected area.

Important work in support of this policy was begun this fiscal year on *Critical Natural Habitats in Latin America and the Caribbean* (*page 22*), of which the first volume, covering the Southern Cone countries of Argentina, Chile, Paraguay and Uruguay, is now complete. The series, which pinpoints the region's critical natural habitats, is being designed to improve planning, environmental assessment and mitigation of proposed infrastructure and other development projects and identify high-priority sites for new targeted biodiversity conservation investments.

Priority-Setting

The Bank has also supported regional biodiversity strategies and priority-setting exercises, as in its Latin America and Caribbean Region (LAC) work. Last October, LAC and WWF launched a priority-setting exercise for South American terrestrial ecoregions (*see page 22*). The overview of the conservation status and biological distinctiveness of 191 ecoregions making up the region's land-based natural habitats identifies high-priority areas for biodiversity conservation throughout the region. This past year, the Bank also developed its Assistance Framework for Biodiversity Conservation in Sub-Saharan Africa.

Partners in Conservation

The Bank recognizes that successful conservation depends on active partnerships among all stakeholders—governments, local communities, the private sector, NGOs and international institutions like the Bank. In the past year, working with Conservation International, The World Conservation Union-IUCN, the World Wildlife Fund, the World Resources Institute and other national



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This section
focuses on
management of
biodiversity
conservation,
especially in
forests and
marginal lands.

ELEMENTS OF THE BANK'S BIODIVERSITY ASSISTANCE STRATEGY

Supporting Learning and Innovation in Conservation: The Bank supports biodiversity conservation and sustainable use through regular lending to client governments and grant financing through GEF. Bank assistance will evolve as lessons from earlier experience are fed back into new operations. One focus is environmental education livelihood funds to realize changes in incentives and attitudes. Another is support for incorporating biodiversity concerns in integrated resource management planning for forests, river basins and coastal zones. The Bank also maintains an action learning program to streamline implementation of its policies and procedures, reviewing best practices and training Bank staff, development agencies and decision-makers in client countries

Internalizing Biodiversity as a Priority: The Bank recognizes that to play an effective role in biodiversity conservation and sustainable use, it must go beyond traditional lending for biodiversity and integrate biodiversity conservation with economic development. It is working to ensure more rigorous and systematic consideration of biodiversity concerns in its country assistance strategies and economic and sector work. It is also contributing to valuation methods and indicators to allow more consideration of biodiversity concerns in development planning.

Building Stronger Partnerships for Conservation: To make its conservation and management assistance more effective, the Bank is building on existing partnerships and establishing new ones. Deeper, more effective partnerships are being sought with client governments, the private sector, other development agencies and NGOs. Grant programs for NGOs and local communities, are a particularly powerful tool for tapping the social energy needed for better conservation and development outcomes.

and international NGOs, the Bank has supported mechanisms to amplify existing government-led conservation activities through NGO and community-based actions. The Critical Ecosystems Partnership Fund (CEPF), a grant facility promoting conservation and sustainable development in globally critical areas, is being considered and will hopefully be launched shortly.

Looking Ahead

In its Biodiversity Assistance Strategy, the Bank calls not only for targeted biodiversity conservation support, but for developing biodiversity-friendly policies and programs in sectors like agriculture and forestry. During the past year, it launched a Global Overlays Program, which seeks to develop the conceptual framework and toolkit for mainstreaming global environmental objectives in national environmental planning and Bank operations. The Program's initial focus has been on mainstreaming biodiversity conservation in agricultural development.

Mainstreaming Biodiversity in Agricultural Development: Toward Good Practice, will be issued at the Third Conference of the Parties to the CBD in Buenos Aires this November. The challenge remains to develop a toolkit and test



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the approach for implementing this new framework.

In partnership with Wetlands International, the Bank will also continue its work on wetlands, and is holding discussions to see how it can help countries provide further maintenance of international flyways, now partly funded by the Bank and GEF.

¹ "Mainstreaming Biodiversity in Development: A World Bank Assistance Strategy for Implementing the Convention on Biological Diversity," Environment Department Paper No. 29, November 1995. Available from the Environment Department, fax (202) 477-0565.

The article was written by David Cassells, Forest Resources Specialist, with the Land, Water and Natural Habitats Division of the World Bank's Environment Department (ENVLW), (202) 473-9235, Fax (202) 477-0568.

Stratospheric Ozone Depletion

Today, sustainable development is threatened by two global atmospheric environmental issues: stratospheric ozone depletion and climate change. Both threats are examples of 'textbook' global environmental externalities—unintended or unforeseen side-effects of human economic activity. These atmospheric pollution problems have characteristics that render their solution particularly complex in geo-political terms. They produce large-scale effects which potentially impact a high proportion of the earth's people and ecosystems. Collective action is required for their resolution, as no one nation is responsible for causing the problem. And no one nation working alone could eliminate the threat, even with full incentive, commitment and political willpower.

The ozone layer protects life on Earth from dangerous ultraviolet radiation. Excessive exposure to UV radiation can increase skin cancer and eye cataracts, suppress the immune response system, and adversely affect terrestrial and aquatic ecosystems. Increasingly, anthropogenic emissions of ozone depleting substances (ODS) like chlorine- and bromine-containing chemicals, particularly chlorofluorocarbons (CFCs), are threatening the ozone layer's stability.

When countries around the world signed the Vienna Convention for the Protection of the Ozone Layer and its Montreal Protocol (MP), they committed to phasing out all CFCs by 2010 (1996 for OECD). This past year, the World Bank supported its client countries as they worked to meet these obligations:

Montreal Protocol

Since 1991, as an implementing agency for the Multilateral Fund for the Montreal Protocol (MFMP), the Bank has approved 461 investment projects (about 40% of all MFMP investment projects) at about \$210.5 million (nearly 50% of MFMP investment project resources). This fiscal year alone, 112 investment projects, at \$51.5 million, were approved. These projects have resulted in an annual phaseout of over 7,800 tons of ODS weighted for their ozone-depleting potential, and will ultimately result in an annual phaseout of over 42,000 tons.

Global Environment Facility (GEF)

Many countries with economies in transition are not eligible to receive financing from the MP but are eligible under the GEF. Through the Bank as an implementing agency, the GEF is financing ODS phaseout in six economies in transition, including Russia. The value of the approved projects is now over \$85 million, and will ultimately result in an annual phaseout of over 18,000 tons of ODS.

ODS Production Phaseout in Russia

The Bank is supporting a special initiative to help the Russian Federation phase out ODS production. Although ODS consumption in Russia has fallen over recent years, this could be

undermined by continuing availability of locally produced ODS; illicit trade in Russian CFCs in North America, Europe and developing countries also undermines the world community's efforts to phase out all CFCs. The production phaseout project will address these risks and accomplish what is probably the most cost-effective large-scale ODS phaseout in the world.

Market-Based Instruments

This year, the Bank undertook a study on market-based instruments (MBIs) to support ODS phaseout. The study identifies potential applications for conventional MBIs like taxes and tradable production permits, and recommends a national bidding system for MFMP grant distribution. In a competitive auction, a firm's 'offer price' or 'willingness to accept' a grant in exchange for ODS elimination reveals the firm's own estimate of its true incremental costs of conversion away from ODS. A national auction would reduce costs to the MFMP since firms would have to compete for the Fund's resources and would have incentives to minimize their conversion costs. In May, the MFMP Executive Committee approved \$1 million for such a scheme in Chile.

Sectoral Approach to ODS Phaseout

Since September 1995, the Bank has been working with the Government of China on a pilot to phase out over 35,000 tons of ODS annually in the halon sector, used primarily in fire protection systems. Through policy measures and financing, the pilot will provide enterprises with incentives to identify and adopt least-cost options. Cost estimates show that this approach would achieve more savings than a project-by-project approach. It would also allow fund disbursement to be based on achieving halon sector phaseout targets, measuring success by environmental performance instead of the number of project proposals.

Hydrocarbon Refrigeration

The Bank, Germany and Switzerland have initiated a study on the global hydrocarbon domestic refrigeration market, to evaluate the barriers faced by hydrocarbon technologies, determine whether or not they enjoy a level playing field relative to other alternatives, and assess their comparative environmental benefits.



Over the last year, in a global study on climate change, scientists concluded that human activities, especially fossil fuel combustion and land-use changes like agriculture and deforestation, are increasing concentrations of greenhouse gases (GHGs), and altering the Earth's climate. This will adversely affect human health, ecological systems, and socio-economic sectors, with developing countries being the most vulnerable. While the Framework Convention on Climate Change (FCCC) places obligations on OECD countries and economies in transition to limit emissions in the year 2000 to those in 1990, it only requires developing countries to report on activities to address GHG emissions and climate change strategies. Meeting the FCCC's objectives will require 'global' improvements in energy efficiency and transition away from fossil fuels. The challenge the world faces is to meet energy needs in the most environmentally benign manner, and to take climate change into account in agriculture, forestry, fisheries, ecological system conservation and sustainable use, coastal zone management, and human health.

Climate change will continue to have a significant impact on the Bank's portfolio, with increasing impetus to develop technologies and policies promoting efficient energy and renewable energy use. As new mechanisms augment or partially replace traditional funding, the Bank Group can facilitate and leverage funds for climate change purposes, in particular by closer cooperation with the private sector (see page 44). This last fiscal year, the Bank has taken the lead in helping countries reduce emissions and enhance sinks of greenhouse gases on 4 principal fronts:

Global Environmental Facility

As a GEF implementing agency, the Bank maximizes emissions abatement opportunities and cost-effectiveness from a long-term overall environmental perspective. Renewable energy projects, for example, through June, the GEF had authorized \$215 million in GEF financing for Bank renewable energy projects.

Setting Climate Change

sions and that it is often in a country's best interest to pursue actions that also capture climate change benefits. Because agriculture, industry, energy and transport investments can impact the global atmosphere, climate change must be taken into account in their design. Conversely, agricultural and infrastructure investments, if not designed with climate change in mind, could be adversely affected by future changes in temperature, rainfall and sea level regimes.

Up to a point, domestic and global benefits are produced jointly. But climate change's global risk also warrants actions beyond domestic economic and environmental efficiency. Increasingly, the Bank is helping countries integrate climate change concerns into policymaking and investment planning. Prototype climate change 'global overlay' studies have been completed and guidelines finalized for Ukraine's and Mexico's energy sector and Argentina's forestry sector. Work was also begun to bring the global climate change dimension into Indian and Philippine power sector planning.

Carbon Shadow Price Backcasting Study

This past year, the Bank began a study to analyze the economic implications of including a shadow price for carbon damages for selected projects, and will assess how including a shadow price would have influenced each investment's design. The study should help clarify how climate change concerns could influence the Bank's lending, provide support for policy formulation and identify priority investments.

Activities Implemented Jointly

The FCCC Parties established a pilot phase for Activities Implemented Jointly (AIJ), where countries contract with parties in another country to reduce that country's GHG emissions. AIJ is important for stimulating additional resource flows for the global environmental good. With Norway's co-financing, the Bank has expanded its AIJ Work Program to clarify how AIJ and other market mechanisms can promote the Bank's client countries' interests.

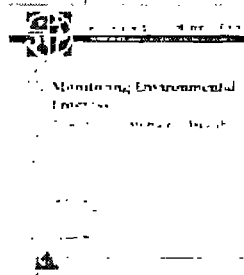
This section focuses on the Bank's work in fostering global warming solutions through energy efficiency, demand side management and renewable technologies, and its role in carrying out the GEF and Montreal Protocol work.

This article was written by Robert Watson, Senior Science Advisor to the office of the Director of the Environment Department at the World Bank (ENVDR), (202) 473-6965, Fax (202) 477-0565.

Measuring and Valuing the Environment

Traditional measures of economic progress ignore the costs of environmental degradation and depleting natural resources. The Bank has been at the forefront of efforts to correct this, pioneering new ways to measure progress by linking the economic and environmental spheres. Following on the heels of such work as the integrated national accounts it built with the United Nations for Mexico and Papua New Guinea in 1991, the Bank continued its pioneering work this past

crowd out attention to the environment. In the Philippines, a joint IMF/World Bank team identified key policy reforms the government must make to address environmental issues in its macroeconomic growth program on the road to becoming an Asian 'green tiger': introducing water pollution charges to increase the government's fiscal capacity to manage pollution and user charges to fund protected areas development and maintenance, increasing fuel excise taxes, and reforming the fiscal regime for mining, including resource royalties, to provide a secure revenue stream for the government and proper incentives to resource exploiters.



Monitoring Environmental Progress: Expanding the Measure of Wealth, highlights new measures of wealth and national savings and reductions in environmentally damaging subsidies.

year when it published *Monitoring Environmental Progress* (MEP). The MEP presented first estimates of total national wealth, embracing natural resources, produced assets and human resources for a broad spectrum of countries. The document highlighted 'genuine savings,' which extends traditional measures of net saving by deducting the value of environmental depletion and degradation, as a new key policy indicator for countries aiming to create and maintain total wealth.

The Bank has made progress in four related areas this year:

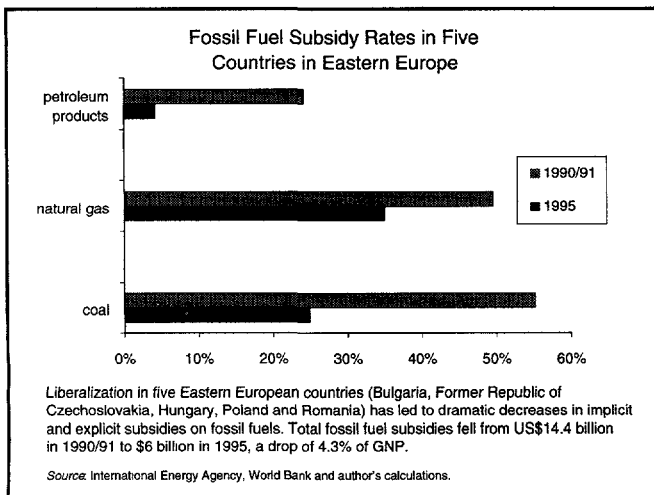
Economy-Wide Policies and the Environment

An explicit link must be made between macroeconomic planning and the environment through a common analytical framework which recognizes that, while human-made capital assets are essential for development, they can only substitute at the margin for natural, human and social capital. This year, a Bank study on Jamaica demonstrated that natural resource management is important to sustainable growth and the pressing fiscal and political concerns that tend to

Policy Reform and the Environment

As liberalization and policy reform spreads worldwide, the environmental effects are most directly seen in the 'win-win' policies that aim to eliminate subsidies which damage both the economy and the environment. In 1992, the Bank's *World Development Report* highlighted fossil fuel subsidies as egregious examples of 'lose-lose' policies: scarce fiscal resources are wasted, investment decisions distorted, and pollution emissions elevated. Preliminary results from work tracking the changes in fossil fuel subsidies from 1990 to 1995 in 5 countries in Eastern Europe show that total subsidy levels on coal, natural gas and petroleum products dropped from \$14.4 billion in 1991 to \$6 billion in 1995, 4.3% of the region's combined GNP (*Figure*). Subsidy reductions are beginning to have an effect. In Poland, the aggregate efficiency of fossil fuel use (measured as quantities of fuels used per unit of real GDP) has increased by about 20% from its mid-1980's levels. Increased fuel efficiency translates directly into reductions in emissions of sulfur and nitrogen oxides, particulates and carbon dioxide.

Another stream of work is assessing subsidies on agricultural inputs, particularly fertilizers and pesticides, whose excessive use leads to runoff into the environment. Input subsidies are sizable in some countries: budgeted fertilizer subsidies in India rose from roughly \$900 million in 1982 to nearly \$2.5 billion in 1992. The past few years have seen a significant reduction in the degree of subsidization of agricultural inputs. Although



these reductions have often been driven by fiscal problems and adjustment programs, they can have important environmental consequences. In some cases, as with Indonesian pesticide subsidies, the subsidy reductions have arisen directly from a recognition of environmental damage.

Indicators of Environmental Change

The Bank is working with Indonesia, Costa Rica and South Africa to develop green national accounts, expanding their traditional economic accounts to include natural resources and the environment. A major program on development and policy use of environmental indicators at the country level will also begin this year, with assistance from Scandinavian trust funds.

New guidelines for environmental performance monitoring indicators are part of a Bank-wide effort to improve project implementation and better monitor the impacts of the Bank's lending. The first edition note of *Environmental Performance Indicators* is now being implemented.

The second edition of *Monitoring Environmental Progress*, scheduled for early 1997, highlights sectoral indicators for land quality, updated portfolio indicators on wealth and genuine savings, analysis of evolving themes such as poverty and the environment, and new indicators on policy reform and the environment. This edition will include human capital formation in the genuine savings measures.

This year, *World Development Indicators* (WDI) will be expanded to become the Bank's most comprehensive and authoritative set of data and indicators on economic and social development. Environmental tables will cover land and deforestation, protected areas and biodiversity, freshwater use, energy taxes and use, energy efficiency and CO₂ emissions, urbanization, air pollution, and traffic and congestion.

Evolving Measures of Value

Innovative work has been done on valuing the environmental impacts of Bank projects. These include the landscape values of forested hillsides in Croatia, off-site benefits from expanded protected areas in Haiti, the economic dimensions of coral reef protection in Indonesia, and tourism and other benefits from improved wildlife management in Kenya. Lessons from this work will feed into the development of indicators and efforts to further 'green' the national accounts.

Collaboration on Indicators Work

Collaboration with other international institutions in ESD indicator development is essential. With the United Nations Commission for Sustainable Development, the Bank has played a key role in developing poverty indicators, and is helping the Baltic states define their national environmental indicator sets. A global coalition for Land Quality Indicators took shape this past year: UNEP, UNDP, FAO, CGIAR (the Consultative Group for International Agricultural Research) and the Bank are working on a two year program to expand our knowledge of the pressures on, and changing state of, agricultural land worldwide.

¹ World Bank, "Monitoring Environmental Progress: A Report on Work in Progress." (Washington, D.C.: 1996).

² "Environment Performance Indicators—First Edition Note." February, 1996. World Bank's Environment Department, Fax (202) 477-0565

³ "World Development Report 1992: Development and the Environment." Published for the World Bank by the Oxford University Press, New York: 1992.

This section focuses on environmental information at two levels: understanding projects' environmental dimensions and monitoring their performance; and observing a nation's management of its environment. It also explores economic analysis tools to link physical environmental effects to economic impacts.

This article was written by John Dixon, Unit Chief, Indicators and Environmental Valuation, and Kirk Hamilton, Environmental Economist, of the Pollution and Environmental Economics Division of the Environment Department (ENVPE). (202) 473-8594, Fax (202) 477-0968

Legal Dimensions of Environmental Management

TRAINING

The Bank's legal staff often lecture on the environmental aspects of Bank operations to NGOs, governments and academic institutions around the world, and recently participated in the first Arabic Workshop on Environmental Assessment. The workshop, held jointly with the Gulf Council of Cooperation (GCC) using the Bank's Arabic version EA Sourcebook, was attended by fifty high-ranked staff from environmental agencies, water resource management agencies and the oil industry in GCC countries. Bank legal staff are also developing an environmental law training program to supplement internal training on the legal aspects of coastal zone management, environmental assessment, and forestry management and conservation.

Environmental protection is now accepted as a crucial component of a modern legal system, as Agenda 21 highlights in its guidelines for effective legal and regulatory frameworks. As governments increasingly turn to the private sector, the importance of sound, adequately enforced environmental regulation and policy and pricing reform increases. The legal aspects of solutions to global and transboundary environmental problems also present new challenges for inter-governmental

"You're not going to be successful in getting foreign investment unless you have a good legal system"

James Wolfensohn, *World Bank President*

cooperation. In the past year, the Bank has continued to play a crucial role in helping its client countries integrate environment and development through law and institutional capacity building.

Environmental Law and Capacity Building

Many developing countries are seeking advice on how to enhance the scope, content and capacity of existing national frameworks to create a sound legal foundation for their environmental management. LEGEN (*Box*), working with the responsibility country lawyers, have helped 50 countries produce overarching or sectoral legislation in support of resource management, pollution control or institutional strengthening. In the past year this has included framework environmental laws in Morocco, Eritrea and Haiti, water legislation in Tanzania, forestry in Cameroon and Laos, hazardous waste management in Algeria, environmental impact assessment in Syria, Burkina Faso, Cote d'Ivoire, and environmental aspects of mining operations in Zambia.

In its work with countries on National Environmental Action Plans (NEAPs), environmental strategies and specific sectors, the Bank has found that addressing environmental law compo-

nents early in a project's development reinforces its legal aspects. The benefits of this approach can be seen, for instance, in the Industrial Pollution Control Project in Algeria and the Environmental Management Project in Burkina Faso.

Transboundary and Global Assistance

Regional and global environmental solutions often have national and international law components. The Bank's legal staff have helped draft such regional instruments as the GEF-financed regional trust fund agreement in the Eastern Carpathian mountains and the Resolution of the Wider Caribbean countries to develop laws needed to ratify the global marine pollution waters convention (MARPOL 1973/78). In response to growing pressures on the Congo Basin's biodiversity, the Bank is helping draft a Memorandum of Understanding between the six countries of the Basin to establish a Regional Environmental Information Management system (*see page 11*).

LEGEN was part of the team drafting the working paper on the Red Sea's environmental management and publications on the Desertification Convention and CIS States' participation in international environmental treaties.

LEGEN has also helped coordinate the Bank's role as trustee and administrator for global environmental funds such as the GEF, the Ozone Trust Fund and the Rain Forest Trust Fund,

THE WORLD BANK'S ENVIRONMENT AND INTERNATIONAL LAW UNIT (LEGEN)

The World Bank has had environmental lawyers for more than a decade, but in 1993 it established a dedicated Unit in the Legal Department, which also has responsibility for the related fields of international and trade law.

leading to more streamlined legal instruments, including those providing funding to NGOs and the private sector. The legal staff also supports the Bank at meetings of the parties of the Climate Change and Biological Diversity Conventions and other related conventions.

International Law Issues

As projects are prepared at the Bank, many international law issues arise. LEGEN provides technical expertise as borrowers draft international instruments or identify customary rules and treaties. Last year, in the Commercial Space Launch Project in Ukraine and Russia (Sea Launch), they conducted a review of a wide range of international customary and treaty law issues, including the UN Convention on the Law of the Sea, the International Convention for the Prevention of Pollution from Ships (MARPOL 1973/78), and treaties governing activities in outer space.

Complying with Bank Policies

The legal staff also helps ensure compliance with the Bank's own environmental and social policies (*Box*) in environmental assessment (as in the Manila Second Sewerage Project); protection of natural habitats (in the India Ecodevelopment Project); indigenous peoples' rights (in the Sierra Natural Resources Management and Poverty Alleviation Project in Peru), involuntary resettlement (in the Shanghai-Zhejiang Highway Project); forestry (in the Argentina Forestry Development Project), water resources (in the Morocco Second Sewerage and Water Re-use Project) and international waterways (for the Caspian Sea). Assessing compliance with internal policies has been central to review of projects brought before the Bank's Inspection Panel, such as the Arun hydroelectric project in Nepal.

Future Challenges

Protecting the environment also involves building sustainable management systems. In the coming year, LEGEN will work with an Environmental Management Capacity Building project in India to strengthen voluntary legal compliance and monitoring and enforcement capacity. The project includes a significant legal component to reinforce implementation of national environmental law. The staff is also helping apply the Bank's policy in a research project on indigenous peoples' legal position in eight Asian countries.

THE BANK'S POLICIES

In FY93, the Bank began to convert its Operational Directives (ODs) into a new system of Operational Policies (OPs), Bank Procedures (BPs), and Good Practices (GPs). The current environmental and social statements are:

OD 4.01 Environmental Assessment (to be issued as OP/BP/GP 4.01): Policy and procedures for environmental assessment, whereby environmental consequences are taken into account in selecting, siting, planning, and designing projects.

OP/BP/GP 4.02 Environmental Action Plans: Policy to encourage and support borrowing governments to prepare, implement and maintain environmental action plans, which should be reflected in Bank operational work.

OP 4.09 Pest Management: Policy to support biological or environmental control methods in managing pests that affect either agriculture or public health.

OP 4.07 Water Resources Management: Policy to promote economically viable, environmentally sustainable and socially equitable water resource management.

OD 4.20 Indigenous Peoples (to be issued as OP/BP/GP 4.10): Policy to ensure that indigenous peoples benefit from development projects, and that projects' potentially adverse effects are avoided or mitigated.

OD 4.30 Involuntary Resettlement (to be issued as OP/BP/GP 4.12): Policy and procedures on Bank staff and borrower responsibilities towards displaced persons in operations involving involuntary resettlement.

OP/GP 4.36 Forestry: Policy on forest sector lending to reduce deforestation, enhance the environmental contribution of forests, promote afforestation, reduce poverty, and encourage economic development.

OD 9.01 Procedures for Investment Operations under the Global Environment Facility (to be issued as OP/BP 10.20): Policy describing the steps to process Global Environment Facility (GEF) operations, in addition to standard Bank investment lending procedures.

OP/BP 10.21 Investment Operations Financed by the Multilateral Fund of the Montreal Protocol: This policy describes the identification process, eligible activities, and the steps required to receive grants from the Multilateral Fund for the Implementation of the Montreal Protocol.

OP/BP 4.04 Natural Habitats: Policy to support the protection, maintenance, and rehabilitation of natural habitats. The Bank does not finance projects that involve the conversion of designated critical natural habitats.

Operational Policy Note 11.03 Management of Cultural Property in Bank-Financed Projects (to be issued as GP 4.11 Cultural Property): The Bank's general policy regarding cultural properties is to assist in their preservation and avoid significant damage or elimination of irreplaceable cultural property.

This section focuses on the legal aspects of environmental management, including national and international legal frameworks and environmental and social policies.

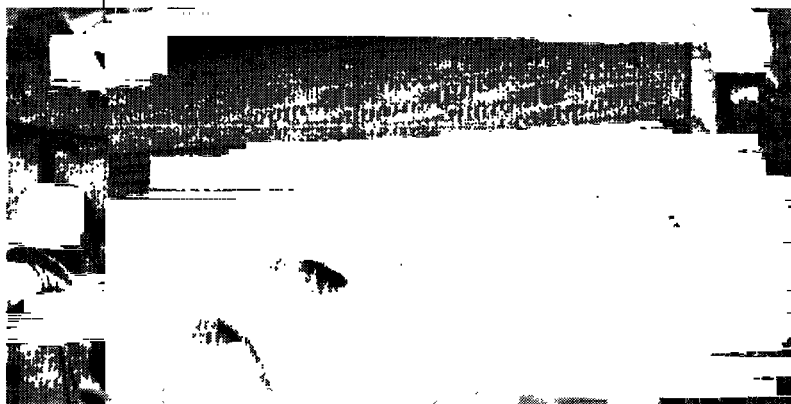
This article was written by David Freestone, Head of the Legal Department's Environmental Affairs Unit (LEGEN), Fax (202) 522-1589.

Strengthening Partnerships for the Environment

The World Bank's primary partners in development are its client country governments. But in recent years, the Bank has come to recognize that it can strengthen its policy dialogue and project performance by involving a broad range of public and private stakeholders in all aspects of its work.

A Range of Partners

This is particularly true in its work on the environment. In recent years, the Bank has made great strides in its work to prevent unintended harm to the environment and to develop projects targeted at healing the environment. One vital



G. DAVIS

lesson it has learned from this experience is that strategic partnerships with organizations who have equally rich experience, or who are better placed to secure participation from in-country stakeholders and local communities, are extremely important and promise to have high payoffs. The Bank has built and continues to strengthen partnerships with other multilateral development banks, UN agencies and bilateral donors, and technically strong NGOs, such as IUCN-The World Conservation Union, World-wide Fund for Nature (WWF) and the World Resource Institute (WRI). The Bank is also looking to develop stronger links with academic institutions and the private sector through organizations like the World Business Council for Sustainable Development.

NGOs and bilateral donors are particularly important strategic partners for the Bank. Both are key players in most of the Bank's current and

emerging partnerships. It is commonplace now for the Bank to facilitate or broker partnerships between country governments and the non-government sector to enhance the design, implementation and involvement of local communities in Bank-supported projects. The Bank continues to strengthen operational collaboration with NGOs, who have been engaged to contribute to Environmental Assessments, provide technical assistance for project design and implementation, and act as contractors, executing agencies or implementing agencies. The expanding collaboration between the Bank and NGOs is not only limited to operational work, but also includes substantive input into policy and analytical work.

Bilateral donors play a catalytic role in the Bank's work on the environment in policy and analytical work, and in operations. \$13.4 million in consultant trust funds (CTF) provided by bilateral donors for the Bank's environmental work this last fiscal year included funding for all aspects of the project cycle, economic and sector work, policy and best practice development, technical assistance and training.

Types of Partnerships

The Bank's current and emerging partnerships include:

Joint Implementation. Through Joint Implementation (JI) under the UN Framework Convention on Climate Change, parties in one or more countries contract parties in another country to implement an activity that reduces greenhouse gas emissions. The contracting parties then receive credit for these emissions reductions. In 1993, as a practical demonstration of JI, the Bank and the Kingdom of Norway entered into a \$4.8 million co-financing agreement to support GEF climate change mitigation projects. This grant provided additional support to Bank/GEF projects in Poland and Mexico, funded analysis of the issues arising through JI application and, in December 1995, led to an expanded three-year pilot phase with an initial \$1.6 million grant made by Norway.

Foundation Partners. The Rockefeller Foundation has also become a key player in climate change



mitigation. To date, Rockefeller has co-financed renewable energy and conservation projects with the GEF in Jamaica, Brazil, India and Morocco, and is supporting development of the Global Photovoltaic Market Transformation Project.

Technical Cooperation. The Bank's environmental projects frequently benefit from technical consultation with professionals outside the Bank. This year, however, the Bank has begun cultivating partnerships with specific professional organizations on a more strategic level, to enlarge the technical expertise base and establish advisory mechanisms for portfolio planning and policy development. The International Institute for Energy Conservation has worked on climate change mitigation projects and the affiliated Global Energy Efficiency Initiative has signed a formal agreement with the Bank to provide policy and technical advice. A long-term technical collaboration between the Bank and WWF-US also recently came to fruition in *A Conservation Assessment of the Terrestrial Ecoregions of Latin America and the Caribbean*. WWF, CI and IUCN also collaborated with the Bank on a proposal for the Critical Ecosystems Protection Fund (CEPF) (see page 33).

Operational Collaborations. The Philippines Conservation of Priority Protected Areas Project is based on a unique and highly innovative partnership between the Bank, the Government of the Philippines and an NGO consortium that is the principal GEF grant recipient. The NGOs for Integrated Protected Areas (NIPA) is a legally incorporated, non-profit consortium of 12 national NGOs, including the most important umbrella groups for community development and environmental NGOs. Collectively, NIPA has widespread influence in the Philippines and represents many NGOs with solid track records. Under the project, NIPA coordi-

nates, supervises and funds these local groups to undertake management and community development activities in 10 priority protected areas in the country.

Private Sector Cooperation. Through the GEF International Waters Portfolio, a small project development grant was used to support an African regional oil spill contingency planning meeting in Cape Town in March. The meeting was organized and co-financed by the International Petroleum Industry Environmental Conservation Association (IPIECA), an NGO representing a broad membership from the petroleum industry, and the International Maritime Organization (IMO).

Attended by delegates from 35 African countries, the meeting laid the groundwork for additional Bank-IPIECA collaborations, demonstrating how modest funding can

be used to 'test the waters' of a potential partnership and catalyze more ambitious joint efforts.

Multi-Stakeholder Partnerships. The Forest Market Transformation Initiative (FMTI) is a multi-stakeholder partnership whose objective is to help the private sector lead the change toward environmentally sustainable forest industry practices by generating competitive advantage and to catalyze such innovative, profitable practices on-the-ground. To date, modest seed funding from the Bank has helped leverage resources from the MacArthur Foundation, National Fish and Wildlife Foundation, Rocky Mountain Institute and Church and Dwight Company. Having completed its initial research phase and established an impressive stakeholder coalition, including representatives from the forestry industry, NGOs, universities, foundations and bilaterals, the reach of FMTI is expanding rapidly as it prepares for a series of international and regional stakeholder assemblies.

Given the magnitude of the problem, we need all hands on deck. The effectiveness of [our] partnerships will need to be judged not by the elegance of the design, but by their effectiveness on-the-ground over time.

James D. Wolfensohn,
World Bank President

This section focuses on building strategic alliances to generate new knowledge and avoid duplicating efforts in the Bank's environmental work.

This article was written by Louise Scura, Senior Resource Economist, with the World Bank's Environment Department, Office of the Director (ENVDR). (202) 458-1921, Fax (202) 477-0565

Addressing the Pollution Challenge

Worldwide, the costs of pollution in disease, premature deaths, and lost productivity are enormous, especially for the poor. Dust pollution leads to at least 500,000 premature deaths and up to 5 million new cases of chronic bronchitis a year; lack of clean water and sanitation is believed to cause some 2 million children a year to die. The loss in productivity is valued in billions of dollars and hundreds of millions of lost work days.



S. LINTNER

Environmental Management

Solutions to these environmental problems are critical, but must be found within complex economic, social and political realities. As evidence increasingly suggests that the old 'pollution control' paradigm is no longer adequate,

the Bank's emphasis in its pollution work is increasingly shifting to *environmental management*. The Bank has committed some \$7 billion to pollution and urban environmental management for 58 projects in 31 countries. In the past year alone, the Bank has provided some \$1.1 billion in loans and credits for 10 projects addressing urban and pollution concerns in all parts of the world. These projects cover wastewater management, mining remediation, and conversion of household heating from coal to gas. All the projects support strengthening institutional capacity to monitor and enforce improved environmental management, and where appropriate, establish a sound regulatory and planning framework. This past year, specific solutions included:

Privatization and Public Sector Reform

In some projects approved in FY96, public sector reform and/or privatization has served as a prerequisite for improved environmental and financial performance of state-owned enterprises (SOEs), who are often the worst polluters. In the Industrial Pollution Control Project in Algeria, an agreement was reached to close some outdated SOEs. In the Chongqing Industrial Reform and Pollution Control Project in China,

some SOEs are being relocated and pollution control investments made, with the expectation that ambient environmental quality will improve. Egypt's Pollution Abatement Project introduces innovative measures to minimize waste, prevent pollution, recover resources, adopt cleaner technology and provide fuel substitutions, but also provides a partly subsidized line of credit to both private and state-owned enterprises on the assumption that environmentally beneficial investments might not otherwise occur.

Financial Sustainability

Financial sustainability is key to a project's long-term success. To pave the way for private sector involvement and sustainable financial management, the Morocco Sewerage and Water Reuse Project deepens the operating agencies' financial and managerial autonomy; and the Bombay Sewage Disposal Project imposes direct charges

FACING DIFFICULT QUESTIONS

As the environmental community undertakes pollution management, they face complex questions for which there are no easy answers, including:

- Is money the critical constraint to environmental behavior?
- Do subsidies improve enterprises' environmental performance?
- If enterprises stand to gain financially from environmental improvement through 'win-win' measures, why don't they implement the measures?
- How much investment is warranted in heavily polluting old industrial plants?
- What are the major environmental priorities in urban infrastructure projects?

to the beneficiaries to ensure that provision of water supply and sewerage services is financially viable. Experience in other countries has shown that poor people, even those who can least afford it, are willing to pay for safe water supply and sanitation, since without these services they often have to pay much higher prices to water vendors.

Clear Priorities and Effective Alternatives

The Bank also worked this year to ensure that environmental projects address the highest priority problems, and to identify cost-effective alternatives. In the Slovenia Environment Project, a



SLOVENIA: REDUCING POLLUTION THROUGH INNOVATIVE FINANCING

Slovenia must reduce its largest cities' ambient levels of dust and sulfur dioxide caused by the use of low quality coal in households and small boilers, especially during the winter. The Bank-financed Environment Project will establish an Air Pollution Abatement Fund as a trust fund managed by the Slovenian EcoFund to finance conversions from coal to gas or district heat. Only households in municipalities with high levels of air pollution in winter who have adopted appropriate smoke-control regulations will be eligible for conversion loans. It is anticipated that the problem will be largely solved in six to eight years. The project is expected to yield an economic rate of return of about 17% excluding environmental benefits, or more than 40% including the health benefits of reducing air pollution. At the same time, it will contribute to meeting Slovenia's sulfur reduction targets under the Second Sulfur Protocol.

Source: The World Bank and Environment in Central & Eastern Europe. World Bank: 1995

proposed large investment in emissions clean-up from a power plant was rejected in favor of converting home heating from coal to gas, which yielded a much greater human health benefit. Similarly, during preparation of Bolivia's Environment, Industry and Mining project, it emerged that scarce drinking water and poor sanitation unrelated to the mining industry might pose a human health threat larger than that caused by mine wastes.

Policy and Outreach

In its policy work and outreach on these issues, the Bank has taken the lead in a number of instances:

- In a report to the October 1995 Sofia conference of environment ministers, the Bank proposed that a program for the 26.5 million people living in the 18 largest Eastern European cities could result in at least 18,000 fewer deaths a year, and at least 65 million fewer working days lost to respiratory illness.
- At the Habitat II Conference in June, the Bank received widespread support for its call for a worldwide phaseout of lead in gasoline to help relieve the health impacts of lead poisoning. The Bank is also participating in a joint program to help phase out leaded gasoline in Latin America and the Caribbean, as part of the Summit of the Americas.
- The Bank convened a roundtable of experts and government officials in June as part of a Clean Coal Initiative, to discuss ways to reduce environmental damage caused by using

coal. The meeting emphasized the need to focus on the whole chain of coal use, from mining through consumption in power plants and small boilers.

The Bank and IFC are working jointly to complete the *Pollution Prevention and Abatement Handbook*. This comprehensive document, being developed in consultation with governments, NGOs and the private sector, will represent an emerging consensus on good practice in pollution management.

The Future

As the Bank works with its client countries to shift to environmental management as a solution to pollution issues, it is aware that the shift requires new relationships between central and local governments, and between governments and enterprises. The shift also implies that the Bank has a growing number of constituencies with whom to maintain a dialogue. Maintaining this dialogue and learning from this experience are key to resolving some of the difficult questions related to pollution issues (see *Box*). The Bank Group will be working much more closely with the private sector to identify good environmental and social practices, and to influence small and medium scale enterprises to improve their environmental management. The Bank Group finds itself well placed to serve as a broker between industry associations and governments to help foster a better understanding of each other's needs and intentions, and to promote a more stable investment climate in which the regulatory framework for environmental and social objectives is broadly accepted and applied.


This section highlights findings from the Bank's policy and operational work on pollution management and technology policy.

This article was written by Richard Ackerman, Unit Chief, Technology and Pollution Policy, of the Pollution and Environmental Economics Division at the World Bank's Environment Department (ENVPE), (202) 473-2606, Fax (202) 477-0968.

The Environment as a Business Opportunity

It is becoming abundantly clear that global environmental problems like climate change and biodiversity loss will only be solved if the private sector weighs in with its vast technical, managerial and financial resources and expertise.

At the same time, the environment is becoming a business opportunity, not simply a regulatory cost, with opportunities growing to invest in businesses that are not only profitable but also



Private companies—at least the smart ones—are recognizing that a responsible attitude towards the environment is good for business as well as the ecosystem.”

Gautam Kaji, *World Bank Managing Director*

MAC COSGROVE-DAVIS

contribute significant environmental benefits. The private sector's perspective is shifting as the long-term cost savings of environmentally benign processes become clear, and as consumers demand environmental products and services which result in global benefits, such as independently certified tropical wood, energy efficiency products, ecotourism and recycled products.

At the moment, however, in spite of their promise, businesses engaged in supplying environmental goods or services often face a number of daunting market barriers, particularly in developing countries. They often find it difficult to obtain financing, as many would-be investors are deterred by their small size, unproven technology, high project development or start-up costs and transactions risks. They lack access to credit at reasonable interest rates, and face subsidized prices for competing products or raw materials, and institutional or structural hurdles. Energy pricing and fossil fuel subsidies, for instance, may prevent the private sector from investing in companies marketing renewables.

The challenge now is to align private sector incentives with public sector objectives to encourage the private sector to participate more fully, and quickly, in environmental investments.

Overcoming Market Barriers

Over this last fiscal year, the International Finance Corporation (IFC) and the World Bank¹ have worked to help the private sector face this challenge through public-private partnerships in the form of: consultations with stakeholders, NGOs, governments, and the private sector to design investment projects and market transformation initiatives; and co-funding through Global Environment Facility (GEF) and Montreal Protocol (MP) projects.

Through this work, they are increasing the range of mechanisms used to overcome market barriers to environmental goods and services. One approach is to 'buy-down' the costs and risks associated with sustainable businesses through loans or concessional loans where credit is not readily available or rates are prohibitive, credit guarantees to encourage lenders to provide debt for perceived high risk projects or technologies, equity investments in regions or sectors that lack venture capital, and grants for technical assistance and project development to cover the high front-end costs of launching sustainable businesses. Another approach is to use market transformation initiatives to stimulate or 'jump-start' market demand through rebates and consumer education programs. The *box* illustrates how these approaches have been used in the last year.

Looking Ahead

The Bank Group is committed to encouraging the private sector to invest in enterprises which result in global benefits like conserving biodiversity and mitigating greenhouse gas emissions. The future challenge is to continue to support innovative approaches to promote investment in sustainable enterprises, to demonstrate their commercial viability and help erode market barriers which restrict their more widespread application. In this regard, during the next fiscal year work will continue to develop a Photovoltaic (PV) Market Transformation Initiative and a Forest Market Transformation Initiative (*see page 41*), respectively aimed at hastening the widespread application of PV and sustainable forestry.

OVERCOMING MARKET BARRIERS FOR ENVIRONMENTALLY SUSTAINABLE PRODUCTS

Program/Project Description	Market Barriers	Overcoming Market Barriers and Program Results
Financial and NGO Intermediaries (Loans & Guarantee Programs)		
<p>Small & Medium Scale Enterprise (SME) Program: This IFC-administered pilot program channels \$4.3 million in GEF funds through financial intermediaries to SMEs for renewable energy, energy efficiency, sustainable forestry and agriculture, and ecotourism projects. Each intermediary will receive a low interest loan of \$500,000-\$1 million to provide debt or equity finance to SMEs.</p>	<p>Term financing is scarce in developing countries, and only larger firms can obtain it from financial institutions. This barrier is magnified for new environmental businesses due to perceived high risks, no matter how profitable they appear.</p>	<p>The program aims to develop a track record of GEF eligible SME projects to leverage larger flows of private finance. Five intermediaries have been selected for the pilot phase and funds will reach 25 projects by late 1996. Intermediaries include two venture capital funds, an international NGO, a national forestry NGO, and an electricity supply company.</p>
<p>Hungary Energy Efficiency Co-Financing Program: IFC is designing a \$5 million co-financing facility where GEF funds will help finance energy efficiency projects through domestic financial intermediaries such as commercial banks and leasing companies.</p>	<p>Despite opportunities for investments, many financial intermediaries are unwilling to take the credit risk due to unfamiliarity with the projects and technologies.</p>	<p>The facility will provide credit enhancement guarantees, co-financing, and technical assistance to GEF energy efficient investments to promote an energy efficiency market, build domestic financing capacity, and leverage \$25-30 million for energy efficiency projects over a five year period.</p>
Investment Funds		
<p>Biodiversity Enterprise Fund for Latin America: This \$20-50 million fund would invest in medium sized (\$1-20 million) private sector ventures in sustainable forestry, agriculture and ecotourism in South America. The Brazilian fund management team expects to market the fund to private sector and institutional investors in late 1996.</p>	<p>Many medium sized businesses in Latin America face difficulty in obtaining equity finance, particularly in the biodiversity-linked sectors targeted by the fund.</p>	<p>IFC and private sector investors would bring together investment management expertise, sector know-how and capital, and make these resources available to businesses in these sectors. GEF has endorsed \$5 million in grant funds to cover the fund management company's costs of biodiversity due diligence and monitoring—actual fund investments would then be made on commercial terms.</p>
<p>Renewable Energy and Energy Efficiency (RE/EE) Fund: This proposed \$100-200 million global fund would make debt and equity investment in on-grid and off-grid renewable energy and energy efficiency projects. A feasibility study by IFC with Norway, Netherlands, Germany, France, and US funding indicates a fast growing project pipeline.</p>	<p>Many RE/EE projects still attract little interest from investors because these projects are smaller transactions and may involve newer technologies or markets.</p>	<p>GEF has endorsed \$20-30 million for concessional finance for the fund to 'buy down' development costs and risks for smaller and more innovative projects. The fund would also finance RE/EE projects with more established technologies (wind, geothermal, mini-hydro) on purely commercial terms.</p>
Market Transformation Initiatives		
<p>Poland Efficient Lighting Project: This three year project is designed to stimulate the Polish market for compact fluorescent lamps (CFLs) and luminaires through a manufacturers rebate and consumer education campaign funded by \$5 million from IFC/GEF. Six local manufacturers are expected to participate in the competitively awarded grant program.</p>	<p>Before the Program, manufacturers produced CFLs for export only due to the high initial cost of CFLs to domestic consumers.</p>	<p>By April, after the first six months, 345,100 CFLs had been sold nationally; the three year objective is over 1 million CFLs. The hope is that at the conclusion of the Program the Polish market for CFLs will continue to grow without the subsidy.</p>

This article was written by Michael Rubino in collaboration with Dana Younger and Martyn Riddle of IFC's Technical and Environment Department (CTEED), and Ken Newcombe, Senior Environmental Advisor with the World Bank's Environment Department (ENVDR). Michael Rubino (202) 473-2891, Fax (202) 676-9495. Ken Newcombe (202) 473-6010, Fax (202) 477-0565.

Toward Social Sustainability

It is now widely accepted that in order to last, development must be socially as well as environmentally sustainable. While the definition of 'social sustainability' is even more elusive than environmental sustainability, some clear principles for action are emerging. At a minimum, care must be taken that development programs are not socially or culturally destructive. More than this, every effort must be made to protect the vulnerable, respect social diversity, ensure all stakeholders' fullest participation in

Mainstreaming Participation


The Fund for Innovative Approaches in Human and Social Development (FIAHS) supported innovative, participatory activities around the world in 24 Bank projects, including the Azerbaijan Farm Privatization Pilot Project, the India Women's Health Project, and the Jamaica Social Investment Fund Project. Similarly, the Africa Region Client Consultation Fund contributed to participatory activities throughout Sub-Saharan Africa. FY96 also marked the launch of *The World Bank Participation Sourcebook*¹ (*Environment Matters*, Summer 1996). The Bank continues to be actively involved in an interagency working group dedicated to forming in-country participation learning groups for key stakeholders.

Social Dimensions of Environmental Management

This past year, the Bank has continued to strengthen the links between social development, natural resource management and biodiversity conservation. The Niger Natural Resources Management Project is aimed at securing sustainable agricultural production and growth while improving the living conditions of the rural population. Local community involvement is central to the Madagascar Environmental Support Program's second phase (*see page 9*). Environmental and biodiversity conservation policies for forests developed in the initial phase of the project will allow local communities to exploit forest resources on a sustainable basis. This will be complemented by measures to improve land management at the local level to ease pressure on protected areas and other areas of conservation value. The Bank has also initiated a study on the use of community based approaches in natural resource management investments. Social assessments are being carried out in all GEF projects and work continues on integrating social assessment into private sector activities.

Work on Post-Conflict Reconstruction and Issues of State and Society

Some of the Bank's most recent work on the social dimensions of development centers on post-conflict reconstruction and issues of state



"Social Capital—culture and values, relationships and institutions—is just as important as physical capital in calculating a nation's wealth."

Gloria Davis, Chief, Social Policy Division, World Bank Environment Department

decisionmaking, and build up, rather than destroy, social capital.

Over the past fiscal year, in its efforts to turn these principles into practice, the Bank has given particular attention to four areas:

Support for Work on Social Policy and Social Assessment (SA)

Since the Bank's first SA guidelines were issued in May 1994 as a framework for social analysis and participation in projects and sector work, 10-15% of Bank projects have included SAs. The use of SA in Bank projects increased in FY96. Results of a recent review of SA in selected projects indicated that it was being used across Bank regions and sectors, that findings are being used to reach the poor, and that the SA process helped build institutional and local capacity for participation (*Box*). Efforts are also continuing to strengthen links between SA and Environmental Assessment (EA) in the environmental review process for all Bank projects.



SOCIAL ASSESSMENT'S CONTRIBUTION TO PROJECT QUALITY

Social Assessments (SAs) provide a framework for incorporating social analysis and participation into Bank operations with the following objectives:

- **Involving the poor:** The team for the Mexico Resource Conservation and Forest Sector Review used SA to build capacity for policy-makers to listen to the poor, and for the poor to articulate their concerns and proposals. The SA process raised policy-makers' awareness of communal forest enterprises' potential to reduce local poverty, and resulted in identification of a participatory forest management project (*ENV Dissemination Note 44*).²
- **Evaluating social impacts:** In the Russia Coal Sector Restructuring Project, SA highlighted the impact of mine closures, not only on miners but on communities as a whole. Consequently, plans to relocate miners were dropped and the emphasis shifted to developing community-specific responsiveness to increase transparency and trust. An independent social impact monitoring mechanism was also established to monitor the impacts of proposed interventions.
- **Building institutional capacity and new institutions:** Using SA in the Estonia Agriculture Project enabled Ministry of Agriculture (MOA) staff to establish a participatory approach to working with farmers, and allowed farmers to develop trust in government through forming Land and Water Associations. MOA staff and representatives of the new local institutions collaboratively drafted project plans based on farmers' priorities, knowledge and capacity for operating and maintaining field drainage systems.

This section focuses on efforts to increase participatory approaches, enhance public involvement, and integrate the social and environmental dimensions of development into decisionmaking.

Looking Ahead

A Social Development Task Group of Bank economists and social scientists began work this fiscal year to evaluate various initiatives and approaches underway in the social development arena, so that the Bank can make more systematic use of best practices and findings. The Task Group concluded that the Bank must bring a multi-disciplinary perspective to its operations, that social and economic approaches can and must complement each other, and that the Bank needs to substantially deepen its understanding of the social factors which affect and underpin development to enhance the social aspects of its projects. Their report in FY97 will make initial recommendations on how this should be done. Recognizing the diversity of views likely to greet this report, a major recommendation is that the dialogue continue to be given prominence in the future.

This article was written by Kathryn McPhail and Susan Jacobs, social scientists with the Social Policy Division of the Environment Department (ENVSP), Fax (202) 522-3247.



Participatory planning in Estonia (see Box)

J. THOMPSON

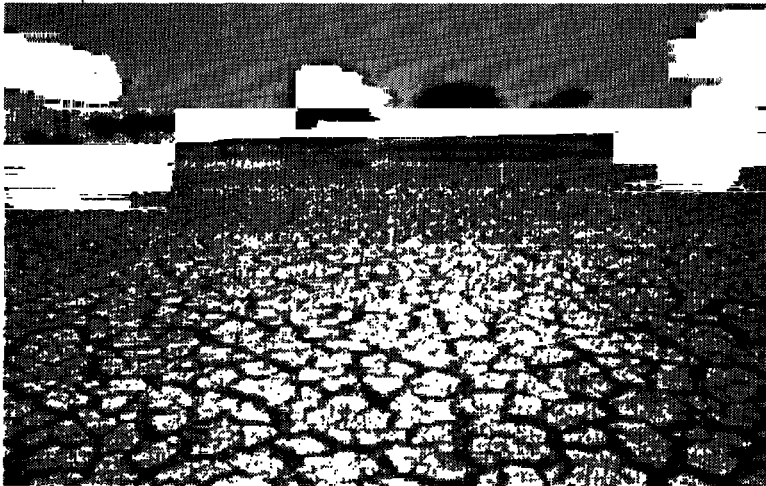
and society in Angola, Bosnia and Rwanda. The Bank has increased its attention to initiatives linked to post-conflict issues such as refugee reintegration, demobilization of ex-combatants and operational de-mining, and aims at building foundations for sustainable peace, as in the recently approved Bosnia Land Mines Project. A policy paper has been drafted on post-conflict reconstruction, supported by a lecture series and collaboration with United Nations agencies. Work on local level institutions and their relations with the states has also begun.

¹ World Bank, "The World Bank Participation Sourcebook." (Washington, D.C.: 1996.

² "Mexico Resource Conservation and Forest Sector Review—Incorporating Social Assessment into Economic and Sector Work." Environment Department Dissemination Notes, No. 44. May, 1996. World Bank's Environment Department, Fax (202) 477-0565.

Strategically Managing the World's Water

In the past few years, a 'water crisis' has emerged in many countries around the world. Where water was once abundant, it is often now scarce. More than a billion people lack access to adequate water and 1.7 billion people have inadequate sanitation. Contaminated water causes millions of preventable deaths each year, especially among children. In many areas, water rather than land availability will be the main constraint to agricultural production, already constrained by competing urban and industrial water demands, and ecosystems and the rural poor will



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also be affected by urban and industrial water abstractions and wastewater discharges.

The challenge the world now faces is to sustainably manage its water resources. To this end, the Bank has adopted a long-term strategy, reflected in its *Water Resources Management Policy*¹. The strategy emphasizes the importance of taking a holistic approach to managing water, involving a wide variety of stakeholders in water resource management, and recognizing water as a scarce economic good. The policy also views freshwater, coastal and marine resources as a management continuum and recognizes the important interactions between land and water. The strategy underlies the Global Program of Action for the Protection of the Marine Environment from Land-Based Activities, adopted in 1995, which calls for four complementary shifts in aquatic resources management promoted by the Bank in the past year:

Moving From Segmented to Comprehensive

Use-based management of water resources must be replaced by an integrated framework. In cooperation with the GEF, European Union and other partners, the Bank has given priority to developing and implementing regional and basin level programs that promote integrated strategies for water management. The Bank continues to participate in Environmental Programs for the Aral, Baltic and Black Seas (*see page 18*), Danube River Basin, Mediterranean Sea, and Red Sea and Gulf of Aden and, in cooperation with UNEP and UNDP, is preparing an initiative for the Caspian Sea. The Bank's freshwater work includes integrated river basin and lakes management such as the Asia Water Initiative and activities in eastern, southern and western Africa. Emphasis is being given to cooperatively developing programs linked to regional/national water resources strategies, and lake management programs emphasizing the need for basin management are being undertaken in Africa, Asia, Europe and the Middle East.

Moving From Curative to Preventive

The costs of preventing resource degradation are small compared to remediation or rehabilitation costs. A major challenge for freshwater, coastal and marine management is to increase the level of effort for preventive measures while maintaining support for curative interventions in degraded areas. During FY96 the Bank, with the support of the GEF and Norway, began an innovative study under the Red Sea and Gulf of Aden Program on management of navigation risks, the primary threat to the marine environment in this region. A complementary national level marine environmental pollution prevention assessment is planned for Eritrea. To promote preventive measures, the Bank has also issued an *Environmental Assessment Sourcebook Update on Marine Outfalls*.²

Moving From Incremental to Strategic

Regional environmental programs, national water resources strategies, and management programs for river basins, lakes and coastal areas all contribute to a shift from a piecemeal to a strategic investment approach. All identify a diversity



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of complementary actions—policy, regulatory, management, investment and institutional—which, with phased implementation, permit environmentally sound management of available resources. The Bank's Middle East and North Africa Region initiated regional and national evaluations of water resources management during FY96 to identify priorities for policy changes, institutional strengthening and investments. These activities have been complemented in many cases by coastal zone management measures supported by the Mediterranean Environment Technical Assistance Program (METAP) (see page 27) and GEF activities in the Black, Mediterranean and Red Seas.

Moving From Piloting to Mainstream

The Bank and other organizations have supported pilot activities to demonstrate and test innovative solutions to freshwater, coastal and marine resources management. Where successful, these approaches should be more broadly applied. The Aral Sea Environment Program and the Haapsalu and Matsalu Bays Environment Project in Estonia both supported the use of constructed wetlands for wastewater treatment purposes during FY96. Integrated Coastal Zone Management (ICZM)—an inter-sectoral and ecosystems approach to managing coastal resources and economic development—is being introduced on a pilot basis into the Bank's portfolio of coastal investment projects in Mexico, Ghana, Thailand, Albania and Indonesia. In cooperation with the

Department for Research Cooperation of the Swedish International Development Agency (Sida/SAREC), the Bank is also evaluating marine biotechnology in developing countries. In the past fiscal year, to support these four complementary shifts, the Bank provided training to its client countries in integrated water resources, including regional and national seminars on integrated approaches to river basin management, participatory approaches to water management, and workshops to develop and disseminate the *Africa Regional Water Resources Management Strategy*. Training courses in coastal zone management included seminars on the Red Sea and Gulf of Aden, North Africa, and the Gaza Strip. In cooperation with Sida/SAREC, the Bank also conducted national seminars for Tanzania and Mozambique.

Emerging Challenges

The key challenge for the future is to implement and develop broad acceptance for integrated approaches for water resources management. The Global Water Partnership, designed to consolidate existing UNDP-World Bank programs and involve other partners in addressing the long-term challenges, is important in this respect. A Lakes Management Initiative, designed to more effectively integrate lake management into water resources planning, is also a priority, as is development of management approaches for non-point sources of pollution, especially from agriculture and rural settlements. In the arena of environmental indicators, the Bank's Water and Sanitation Division recently published the second edition of the *Water and Wastewater Utilities Indicators*³. This important contribution to the development of field tested environmental indicators will be complemented by initiatives such as the interim Monitoring and Evaluation Guidelines for GEF International Waters Projects under Bank-supervised implementation.

¹ World Bank, "Water Resources Management—A World Bank Policy Paper." (Washington, D.C.: 1993).

² "EA Sourcebook Update No. 13: Guidelines for Marine Outfalls and Alternative Disposal and Reuse Options." Available from the World Bank's Environment Department, Fax (202) 477-0565.

³ "Water and Wastewater Utilities—Indicators Second Edition." Yepes, G., and A. Dianderas. May, 1996. World Bank's Transport, Water and Urban Department, Fax (202) 477-0164.

This section
focuses on
freshwater,
coastal and
marine resource
management,
integrating an
ecological
dimension into
water resource
management from
the upper
watershed to
the coastal zone.

The article was written by Stephen Lintner, Principal Environmental Specialist with the Land, Water and Natural Habitat's Division at the World Bank's Environment Department (ENVLW), (202) 473-2508, Fax (202) 477-0568.

Publications

Recent World Bank Publications on the Environment

The documents listed here are publications published through the Bank's Office of the Publisher (see www.worldbank.org for more information). Other environmental publications are available through the Environment Department and other individual units at the Bank. For information on these, see the publications listing at <http://www-esd.worldbank.org/html/esd/env/envmain>.

General

Mainstreaming the Environment: The World Bank Group and the Environment since the Rio Earth Summit—Fiscal 1995. The World Bank. ISBN 0-8213-3290-2. \$8.95

Monitoring Environmental Progress: A Report on Work in Progress. The World Bank. ISBN 0-8213-3365-8. \$7.95

Sustainability and the Wealth of Nations: First Steps in an Ongoing Journey. Ismail Serageldin. Environmentally Sustainable Development Studies and Monographs Series No. 5. ISBN 0-8213-3551-0. \$7.95

Environmental Assessment Sourcebook. Vol. 1. Policies, Procedures, and Cross-Sectoral Issues. Vol. 2. Sectoral Guidelines. Vol. 3. Guidelines for Environmental Assessment of Energy and Industry Projects. World Bank Technical Paper No. 139. *English:* ISBN Nos. 0-8213-1843-8, -1844-6, -1845-4. *Arabic:* ISBN Nos. 0-8213-3523-5, -3617-7, 3618-5. Vols 1 and 3 \$13.95; Vol 2 \$17.95

Ethics and Spiritual Values: Promoting Environmentally Sustainable Development. Ismail Serageldin and Richard Barrett, editors. Environmentally Sustainable Development Proceedings Series No. 12. ISBN 0-8213-3713-0. \$7.95

The Self and the Other. Ismail Serageldin and Afaf Mahfouz, editors. Environmentally Sustainable Development Proceedings Series No. 13. ISBN 0-8213-3714-9. \$7.95

Toward Environmentally Sustainable Development in Sub-Saharan Africa: A World Bank Agenda. World Bank. Development in Practice Series. ISBN 0-8213-3599-5. \$20.00

Effective Financing

Effective Financing of Environmentally Sustainable Development: Proceedings of the Third Annual World Bank Conference on Environmentally Sustainable Development. Ismail Serageldin and Alfredo Sfeir-Younis, editors. Environmentally Sustainable Development Proceedings Series No. 10. ISBN 0-8213-3549-9. \$18.95

Meeting the Challenges of Population, Environment, and Resources: The Costs of Inaction. Henry W. Kendall, Kenneth J. Arrow, Norman E. Borlaug, Paul R. Ehrlich, Joshua Lederberg, José I. Vargas, Robert Watson, and Edwin O. Wilson. Environmentally Sustainable Development Proceedings Series No. 14. ISBN 0-8213-3635-5. \$7.95

Servicing Innovative Financing of Environmentally Sustainable Development. Ismail Serageldin and Joan Martin-Brown, editors. Environmentally Sustainable Development Proceedings Series No. 11. ISBN 0-8213-3628-2. \$7.95

Taxing Bads by Taxing Goods: Pollution Control with Presumptive Charges. Gunnar S. Eskeland and Shantayanan Devarajan. Directions in Development. ISBN 0-8213-3457-3. \$10.95

Biodiversity and Natural Resource Management

Decentralization and Biodiversity Conservation: A World Bank Symposium. Ernst Lutz and Julian Caldecott, editors. World Bank Symposium Series. ISBN 0-8213-3688-6. \$40.00

Biodiversity and Agricultural Intensification: Partners for Development and Conservation. Jitendra P. Srivastava, Nigel J. H. Smith, and Douglas A. Forno. Environmentally Sustainable Development Studies and Monographs Series No. 11. ISBN 0-8213-3759-9. \$9.95

Freshwater Biodiversity in Asia, with Special Reference to Fish. Maurice Kottelat. World Bank Technical Paper No. 343. ISBN 0-8213-3808-0. \$7.95

Biodiversity and Agriculture: Implications for Conservation and Development. Jitendra P. Srivastava, Nigel J. H. Smith, and Douglas A. Forno. World Bank Technical Paper No. 321. ISBN 0-8213-3616-9. \$7.95

The Ecology and Management of Non-Timber Forest Resources. Charles M. Peters. World Bank Technical Paper No. 322. ISBN 0-8213-3619-3. \$10.95

Costs, Benefits, and Farmer Adoption of Agroforestry: Project Experience in Central America and the Caribbean. Dean Current, Ernst Lutz, and Sara Scherr. World Bank Environment Paper No. 14. ISBN 0-8213-3428-X. \$13.95

A Conservation Assessment of the Terrestrial Ecoregions of Latin America and the Caribbean. Eric Dinerstein, David M. Olson, Douglas J. Graham, Avis L. Webster, Steven A. Primm, Marnie P. Bookbinder, and George Ledec. ISBN 0-8213-3295-3. \$29.95. Published in association with the World Wildlife Fund.

Energy and Pollution Management

Air Pollution from Motor Vehicles: Standards and Technologies for Controlling Emissions. Asif Faiz, Christopher S. Weaver, and Michael Walsh, with contributions by Surhid Gautam and Lit-Mian Chan. ISBN 0-8213-3444-1. \$50.00

Rural Energy and Development: Improving Energy Supplies for Two Billion People.

World Bank. Development in Practice Series. ISBN 0-8213-3806-4. \$11.95

Best Practices for Photovoltaic Household Electrification Programs: Lessons from Experiences in Selected Countries. Anil Cabraal, Malcolm Cosgrove-Davies, and Loretta Schaeffer. World Bank Technical Paper No. 324. ISBN 0-8213-3728-9. \$8.95

Social Issues

World Bank Participation Sourcebook. The World Bank. ISBN 0-8213-3558-8. \$15.95

Participation in Practice: The Experience of the World Bank and Other Stakeholders. Jennifer Rietbergen-McCracken. World Bank Discussion Papers. ISBN 0-8213-3684-3. \$8.95

Livable Cities for the 21st Century. World Bank Directions in Development. ISBN 0-8213-3812-9. \$7.95

Water Resource Management

African Water Resources: Challenges and Opportunities for Sustainable Development. Narendra P. Sharma, Torbjorn Damhaug, Edeltraut Gilgan-Hunt, David Grey, Valentina Okaru, and Daniel Rothberg. World Bank Technical Paper No. 331. ISBN 0-8213-3711-4. \$9.95

Guidelines for Integrated Coastal Zone Management. Jan Post and Carl Lundin. Environmentally Sustainable Development Studies and Monographs Series No. 9. ISBN 0-8213-3735-1. \$7.95

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appendix

World Bank Environmental Projects

July 1986–June 1996

Environment and the World Bank Group

The World Bank, the International Bank for Reconstruction and Development (IBRD) and the International Development Association (IDA), promotes economic and social progress in developing nations by helping raise productivity so that people live better and fuller lives. This is also the aim of the International Finance Corporation (IFC), which works closely with the private sector and invests in commercial enterprises in developing countries, and the Multilateral Investment Guarantee Agency (MIGA), which encourages direct foreign investment in developing countries by protecting investors from non-commercial risk. Collectively, the World Bank, the IFC, and MIGA are known as the World Bank Group.

Of the four institutions, the IBRD, established in 1945, is the oldest and the largest. The IBRD is owned by the governments of 178 countries that have subscribed to its capital, and makes loans only to creditworthy borrowers. Assistance is provided only to those projects that promise high real rates of economic return to the country.

Since 1960, the International Development Association has provided assistance to poorer developing countries on terms that bear less heavily on their balance of payments than IBRD loans. IDA's assistance is concentrated on the very poor countries--mainly those with an annual per capita GNP of less than \$696 (in 1993 US dollars). Membership in IDA is open to all IBRD members, and 158 have joined. Although IDA is legally and financially distinct from the IBRD, it shares the same staff, and the projects it assists have to meet the same criteria as do the projects supported by the IBRD.

The IFC was established in 1956. Its function is to assist the economic development of developing countries by promoting growth in the private sector of their economies and helping to mobilize domestic and foreign capital for this purpose. The IFC currently has 165 members. Legally and financially, the IFC and the World Bank are separate entities. In its project financing role, the IFC provides loans and makes equity investments.

MIGA, the newest member of the World Bank Group, was established in 1988. Its principal responsibility is *promotion of investment for economic development in member countries through guarantees to foreign investors against losses caused by non-commercial risks and through advisory and consultative services to members countries to assist in creating a responsive climate and information base to guide and encourage the flow of capital.* MIGA is an entity separate from the World Bank. MIGA currently has 128 members.

The World Bank invests in projects with primarily environmental objectives (see page 3), in addition to its regular investment portfolio. All proposed investments are screened for potential environmental impacts and categorized accordingly (see page 37). The World Bank is also an implementing agency of the Global Environment Facility (GEF) and the Multilateral Fund for the Montreal Protocol (MFMP), two important global financing mechanisms which assist developing countries address global environmental concerns (see pages 51 and 63).

World Bank Group Portfolio of Projects to Protect the Environment

The following table lists projects with primarily environmental objectives that were approved by the Bank's Board of Executive Directors between July 1, 1985 and June 30, 1996 (FY86-96), all of which were under implementation during FY96 (July 1, 1995 through June 30, 1996). Each project listing indicates whether the project is being financed through an International Bank for Reconstruction and Development (IBRD) loan, an International Development Agency (IDA) credit, or both; the fiscal year (July-June) in which the project was approved; the Task Manager; the Bank's financial contribution; the total estimated project cost; and the country's implementing agency. The difference between Bank's commitment and total project cost is financed by domestic public, multilateral, bilateral and/or NGO sources.

IBRD/IDA Projects with Primarily Environmental Objectives Active FY96

Africa

Angola

Lobito-Benguela Urban Environment Rehabilitation (Approved FY92)

\$46 million, IDA
\$59 million, total project cost

Implementing Agency: Province of Benguela

Task Manager: Morrell

This project's main objectives are to restore water supply and sanitary services; help in eliminating life-threatening epidemics; improve the health of the population; and halt the degradation of the physical environment. The project will also improve living conditions in squatter settlements by providing access to clean water and improved latrines; strengthen institutions responsible for project management, operation management and control of urban services and the environment by providing technical assistance, logistical support, and training; and assist in policy reform through water and sewer tariffs, land registration, and environmental studies.

Benin

Natural Resources Management (Approved FY92)

\$14 million, IDA
\$24 million, total project cost

Implementing Agency: Ministry of Rural
Development

Task Manager: Topa

This project combines institution-building activities on a national level with site-specific field activities of three types: management of three gazetted forests; watershed development at four pilot sites including land tenure operations and research-development activities; and wildlife management at two pilot sites on the border of the national parks and hunting areas.

Benin

Environmental Management (Approved FY95)

\$8 million, IDA
\$9 million, total project cost

Implementing Agency: National
Environmental Agency (NEA)

Task Manager: Brizzi

Support for this project allows the government to develop the national environmental management capacity required to implement and monitor effectively the priority actions identified in the National Environmental Plan (June 1993). It supports planning and implementation of policies and programs; development of information systems; and promotion of the integration of environmental concerns in socioeconomic development plans. In addition, it seeks to improve the awareness and understanding of environmental issues of various segments of the population and fosters the integration of environmental considerations in the education system.

Burkina Faso

Environmental Management (Approved FY91)

\$17 million, IDA
\$25 million, total project cost

Implementing Agency: Ministry of Agriculture

Task Manager: Lewis

This project seeks to reverse the process of natural resources degradation in order to secure sustainable agricultural growth, restore biodiversity, and manage forests and wildlife. The first five-year phase of a long-term national program, it would identify, design and implement community land management plans in two components in three provinces located in different ecological zones, and in two provinces for protected forest areas and the lands of surrounding communities. Supporting components include: technical support for ongoing natural resources management operations in 18 provinces; establishment of national environmental and project impact monitoring systems; human resources development; and management and studies.

IBRD/IDA Projects with Primarily Environmental Objectives Active FY96

Burkina Faso

Urban Environment (Approved FY95)

\$37 million, IDA
\$50 million, total project cost

Implementing Agency: Ministry of Public Works, Housing and Urban Planning; Office National de l'Eau et de l'assainissement

Task Manager: Diou

This project provides for the rehabilitation or improvement of priority primary drainage networks, the development of piped sewerage and on-site sanitation, the closing or upgrading of existing landfills and construction of new landfills, and the improvement of current toxic and industrial solid waste management systems. The project also aims to strengthen the central government's capacity for urban management.

Burundi

Energy Sector Rehabilitation (Approved FY91)

\$23 million, IDA
\$23 million, total project cost

Implementing Agency: Ministry of Energy/Rigie de Distribution d'eau et d'electricite (REGIDESO)

Task Manager: Senou

The objectives of the project are to promote rational energy policies and the efficient management of energy resources. Specifically, the project aims to: improve energy efficiency through reforms in the pricing structure of electricity, petroleum products and woodfuels; develop efficient institutions in the sector and improve the quality of public investment; expand access to electricity; and support charcoal efficiency and improved stove programs.

Central African Republic

Natural Resource Management (Approved FY90)

\$19 million, IDA
\$34 million, total project cost

Implementing Agency: Forest Ministry

Task Manager: Heimo

The main objective of the project, which will constitute the first phase of a longer-term program, is to reinforce capabilities to protect and manage forest and wildlife resources on a sustainable basis, mainly through further improvements in the legislative framework and fiscal/incentive system for the relevant sector; restructuring of institutions and strengthening of their capacity to effectively implement field controls and promote environmental protection; improving upon knowledge of existing forest resources, as a basis for sound planning; improving upon agro-forestry systems in the forest zone; and support to the protection and management of a dense forest reserve.

Cote D'Ivoire

Abidjan Environmental Protection (Approved FY90)

\$21.9 million, IBRD
\$49.9 million, total project cost

Implementing Agency: Ministry of Defense and Marine / Directorate for Large Public Works

Task Manager: Verspyck

The objectives of the project were to reverse the deterioration in the Abidjan environment due to the dumping of urban wastes and industrial effluents into the Ebrie lagoon by building waste water disposal facilities; establishing sound environmental legislation; monitoring pollution; and ensuring the sustainability of the sewerage system. Studies included a master plan of Abidjan's sanitation, drainage and environmental protection systems and design of a follow-up project. Training for staff responsible for the implementation of the project was also included.

Cote D'Ivoire

Forestry Sector (Approved FY90)

\$81 million, IBRD
\$147 million, total project cost

Implementing Agency: Ministry of Agriculture, Waters and Forests/ Societe de Developpement des Plantations Forestieres

Task Manager: Tall

The project will identify and demarcate about 1.5 million ha of gazetted rain forest; support the preparation of management plans for an additional 700,000 ha; improve management of the forest/agriculture interface by establishing buffer zones around protected forest areas and increasing use of modern inputs to stabilize agriculture. Moreover, the Government's Emergency Program calls for 25,000 ha of new industrial plantations to be established during the next five years; and the provision of infrastructure and equipment for the surveillance and protection of the Tay, Camoe and Marahoue Parks. It will finance infrastructure equipment, staff and institutional support for the Forestry Training Schools in Bouafle and Banco.

IBRD/IDA Projects with Primarily Environmental Objectives Active FY96

Gabon

Forestry and Environment (Approved FY93)

\$23 million, IBRD
\$38 million, total project cost

Implementing Agency: Ministry of
Forestry/Ministry of Environment

Task Manager: Valencia

This project represents the first phase of a long-term effort toward promoting the rational use of the natural resource base. It aims to restructure and strengthen the capacity of the Ministry of Waters and Forestry and the Ministry of Environment for planning, monitoring, and supervision; make forestry and environment training more applicable to private sector and conservation needs; support forestry and environment research activities; prepare and implement a management plan in the depleted coastal zone area; and support government creation and maintenance of wildlife reserves.

Gambia

Capacity Building for Environmental Management-Technical Assistance (Approved FY94)

\$3 million, IDA
\$5 million, total project cost

Implementing Agency: National
Environmental Agency

Task Manager: Powers

This project aims to develop an effective system for environmental planning and management within the National Environmental Agency (NEA) and other relevant agencies. It supports the institutional and policy development of the Gambia Environmental Action Plan; development of a public awareness strategy; electronic and print media campaigns; an environmental information and monitoring system; and development of a disaster awareness and contingency planning system.

Ghana

Forest Resource Management (Approved FY89)

\$39 million, IDA
\$65 million, total project cost

Implementing Agency: Ministry of Lands and
Natural Resources (MLNR)

Task Manager: Epworth

The project is a policy reform, management strengthening and institution building operation aimed at: managing industrial forestry production and export earning in accordance with sustained yield policy; promoting conservation and tree planting on farms to counteract fuelwood shortage and ecological deterioration; and strengthening the sector institutions to enable them to carry out the necessary policy reforms, increase revenue generation, and improve protection and management of the forest and wildlife resources.

Ghana

Environment Resource Management (Approved FY93)

\$18 million, IDA
\$36 million, total project cost

Implementing Agency: Environmental
Protection Council (EPC)

Task Manager: Epworth

This project supports implementation of the National Environmental Action Plan (NEAP) by strengthening institutional and technical capabilities for effective environmental monitoring, policy formulation, and coordination. It includes the development of an Environmental Resource Management System for central and regional coordination, regulatory, and tenorial functions; the development of methodologies to minimize land degradation through community planning and management; and the demarcation and management of five coastal wetlands sites (including inventory, monitoring, public education programs, and studies).

Guinea

Forestry & Fisheries Management (Approved FY90)

\$8 million, IDA
\$23 million, total project cost

Implementing Agency: DEFC/Ministry of
Agriculture and Animal Resources (MARA)
and the State Secretariat of Fisheries (SEP)

Task Manager: Cassagne

The project's objective is to establish sound institutions for managing forestry and fisheries, as well as to launch priority operations. In the case of forestry, the project would strengthen the National Forestry Department within the Ministry of Agriculture and Animal Resources and in several regional forest departments so that they progressively become more effective and begin needed forestry management work. In the case of fisheries, the project would reinforce the State Secretariat for Fisheries in the monitoring, control and surveillance of fishing fleets in order to increase the sector's economic contribution and to preserve fish stocks.

IBRD/IDA Projects with Primarily Environmental Objectives Active FY96

Kenya

Forestry Development (Approved FY91)

\$20 million, IDA
\$65 million, total project cost

Implementing Agency: Government of Kenya

Task Manager: Ryan

The objective of the project is to conserve and protect indigenous forest resources, soil, and water on forest, farm and range land; provide technical assistance in forestry extension and integrated agroforestry farming systems; prepare a forestry development master plan; and strengthen planning and implementation capacities of forestry agencies.

Kenya

Protected Areas and Wildlife Services (Approved FY92)

\$61 million, IDA
\$143 million, total project cost

Implementing Agency: Wildlife Service

Task Manager: Kiss

This project comprises the development of Kenyan Wildlife Services's (KWS) institutional capacity through material support, technical assistance, and a staff training program; rehabilitation of park and reserve infrastructure; establishment of a Community Wildlife Program; expansion of the wildlife education program; strengthening of KWS's planning capacity by financing the preparation of integrated five-year development plans for regional wildlife parks and reserves; preparation of a national wetlands master plan and technical assistance to improve management of marine parks and reserves; revitalization of KWS's scientific research; and maintenance of the effectiveness of the Wildlife Protection Unit by financing vehicles and facilities.

Madagascar

Forests Management and Protection (Approved FY88)

\$7 million, IDA
\$23 million, total project cost

Implementing Agency: Government /Ministry of Livestock, Fisheries and Forestry (MPAEF)/ Mangoro Forest Company (FANALMANGA)

Task Manager: Bosquet

This project was designed to help preserve ecosystems and biological species in Madagascar and assist in implementing the National Conservation Strategy and Forestry Policy, adopted in 1984-85. The project aimed to reinforce the Forestry Department through institutional strengthening and human resource development, and to support forest management, private reforestation, integrated forest valley development, seed collection and research programs; natural forest protection of the Ankarafantsika, Lokobe, Zahamena and Tsaratanana forest reserves; the creation of a new National Park in the Andasibe region; and the reorientation of the Mangoro plantation (Fanalamanga).

Madagascar

Antananarivo Plain Development (Approved FY90)

\$31 million, IDA
\$69 million, total project cost

Implementing Agency: Government/Ministry of Agriculture, Faritany (Province) and Municipality of Antananarivo

Task Manager: Wildt

This project finances the improvement of the living conditions of the low-income population in the low-lying areas of Antananarivo and Antananarivo Plain, and increases the productivity of the industries and of the farms in the plain. The project includes: flood protection along the Ikopa River; flood warning systems; drainage structures on the plain; a pumping station to evacuate water from the plain; construction of an irrigation canal; rehabilitation of irrigation systems; rehabilitation and expansion of the sewerage system; and institution building, including privatization of municipal services.

Madagascar

Environment Program (Approved FY90)

\$26 million, IDA
\$86 million, total project cost

Implementing Agency: Ministries of Economy and Planning, Livestock, Fisheries and Forests, Agriculture, and Scientific Research.

Task Manager: Simeon

This program aims to: protect and manage the most threatened biodiversity and natural ecosystems, and develop surrounding areas; support soil conservation, agroforestry, reforestation and rural development; support mapping and the establishment of a geographic information system; establish clear boundaries for protected areas and improve land security through titling; provide environmental training, education, and awareness; encourage research on land, coastal and marine ecosystems; and support institutional building, establishing EA procedures, strengthening an environmental database, monitoring and evaluation procedures, and studies.

IBRD/IDA Projects with Primarily Environmental Objectives Active FY96

Malawi

Fisheries Development (Approved FY91)

\$9 million, IDA
\$16 million, total project cost

Implementing Agency: Department of Fisheries

Task Manager: Fullerton

This project increases fish production as a means of improving nutrition and protein supply for the population; generates additional off-farm employment and income to help reduce poverty among women and the rural population; conserves the natural resource base of Malawi's water bodies and prevents environmental degradation; improves the institutional capacity for fisheries sub-sector policy formulation, research, planning, monitoring and control; improves management and conservation of lake resources; strengthens regulatory capacity of the fisheries department; and establishes a lake resources management program.

Mali

Natural Resource Management (Approved FY92)

\$20 million, IDA
\$32 million, total project cost

Implementing Agency: Ministry of
Environment, Rural Development & Livestock

Task Manager: Hall

This project provides for village-level investments to halt degradation of soil, water, and natural vegetation; establishes infrastructure with immediate and direct impact on the communities' quality of life; modifies the boundaries of the Baoule National Park and implements its long-term management plan; supports government services to help villagers manage community natural resources; and supports the newly created Planning, Monitoring and Evaluation Department within the Ministry of Agriculture, Livestock and Environment in establishing an environmental information system.

Mauritania

Water Supply (Approved FY92)

\$11 million, IDA
\$15 million, total project cost

Implementing Agency: National Society of
Electricity (SONELEC)

Task Manager: Jannssens

This project includes the monitoring of salt water intrusion in the Trarza aquifer and a study to establish a groundwater management plan for the new Tenadi wellfield, further from the advancing saline front; a program for leak detection; a repair and rehabilitation program of the distribution network; upgrading of the existing installations; an extension of the distribution system to the northern part of the town in order to supply some of the poorest parts of the population with water; and studies and technical assistance to prepare future parts of the program.

Mauritius

Environmental Monitoring and Development (Approved FY91)

\$12 million, IBRD
\$21 million, total project cost

Implementing Agency: Government of
Mauritius

Task Manager: De Naurois

This project initiates a national physical development plan to guide land use, infrastructure investment, and environmental management; establishes laboratories and an industrial park with industrial pollution control; develops a solid waste management plan; supports integrated pest management; encourages marine conservation; and creates a national park.

Niger

Energy (Approved FY88)

\$32 million, IDA
\$79 million, total project cost

Implementing Agency: Ministry of Agriculture

Task Manager: Floor

The project promotes firewood conservation, substitution of energy resources and more effective management of natural forest cover. It also promotes the development of renewable energy technologies and the conservation of electric power; provides electricity at minimal cost; and upgrades local capabilities to administer petroleum exploration.

IBRD/IDA Projects with Primarily Environmental Objectives Active FY96

Niger

Natural Resources Management (Approved FY96)

\$26.7 million, IDA
\$42.2 million, total project cost

Implementing Agency: Minister de
l'Agriculture et de l'Elevage

Task Manager: Oka

This project is the first in a series designed to stop and reverse current natural resource degradation. This will help secure sustainable agricultural production and growth in the region, and improve living conditions of the rural population. Selected rural communities in different agro-ecological zones will be provided with skills training and resources during the project's design and implementation. The Government will also be able to build up its national capacity to support natural resource management initiatives and design a comprehensive set of national policies and strategies.

Nigeria

Environmental Management (Approved FY92)

\$25 million, IDA
\$38 million, total project cost

Implementing Agency: Ministry Hacienda,
Ministry of Agriculture

Task Manager: Swayze

The project aims to strengthen Nigerian environmental organizations, and assists them in implementing their programs; establishes a program of data collection that enables the government to measure levels of environmental degradation, and be aware of environmental trends over time; and completes a series of sector investigations and feasibility studies leading to soundly conceived programs (including capital investments) necessary to redress the prevailing degradation of the nation's environment.

Seychelles

Environment and Transport (Approved FY93)

\$5 million, IBRD
\$7 million, total project cost

Implementing Agency: Ministry of
Environment, Economic Planning, and
External Relations; Seychelles Island

Task Manager: Teymourian

This project aims to improve the basis for sustained growth of tourism while preserving or restoring environmentally sensitive areas. The project would also support implementation of the Seychelles Environmental Management Plan, focusing on programs in resource management, biodiversity conservation, and marine pollution control; restoration and preservation of the ecosystem of Aldabra atoll; protection of endangered sea turtles; and studies of waste reception facilities at the Port of Victoria. The project also includes the preparation of water resources study and management, outer islands and marine resources management, and an organizational review of the country's Division of Environment.

Sudan

Southern Kassala Agriculture (Approved FY89)

\$15.6 million, IDA
\$35 million, total project cost

Implementing Agency: PMU

Task Manager: Ahuja

The project aimed to increase sustainable crop and livestock production, improve environmental management; and provide for greater economic self-reliance of refugees. Production would be increased through project components directed toward higher crop yields, higher livestock off take and better infrastructure. Environmental improvements would result from support for land use planning and monitoring, sound farming practices, reforestation and forest management.

Tanzania

Forest Resources Management (Approved FY92)

\$18 million, IDA
\$26 million, total project cost

Implementing Agency: Ministry of Natural
Resources/ Tourism and Natural Resources

Task Manager: Ryan

This project aims to improve forest resource management, and is the first step in implementing the Tanzania Forest Action Plan (TFAP), thereby signaling long-term commitment to forestry development. The project specifically defines the policies needed for the sustainable development of the sector, and develops and puts in place the instruments needed for their execution; builds capacity in the institutions in charge of forestry, land tenure and land use planning; and develops appropriate forestry management techniques by testing different pilot programs for managing natural woodlands and for increasing tree planting by farmers.

IBRD/IDA Projects with Primarily Environmental Objectives Active FY96

Togo

Lome Urban Development (Approved FY94)

\$26 million, IBRD
\$29 million, total project cost

Implementing Agency: AAAU Agetur (Urban Works Agency) Togo T, Post, and Telephone

Task Manager: Larbi

This project promotes improvement of urban environmental management, environmental and sanitary conditions of the Be Lagoon and community development through capacity building of institutions in the area of urban management. Activities to improve the health of the Be Lagoon includes antierosion works, dredging of the Be Lake, drainage of two pilot zones, and the disposal and treatment of wastes; community participation through training in environmental management; construction of public latrines; miniprojects aimed at improving the urban environment; and improvement of transport and traffic conditions.

Uganda

Environmental Management Capacity Building (Approved FY96)

\$11.8 million, IDA
\$23 million, total project cost

Implementing Agency: Ministry of Natural Resources

Task Manager: Evans

Supporting the first 5-year phase of a longer-term national environmental program, the objectives of this project are to build capacity for environmental management at the national, district, and community levels through the establishment of the National Environmental Management Authority (NEMA); to strengthen selected districts; and to initiate a process for communities to address local natural resource degradation problems.

East Asia / Pacific

China

Ship Waste Disposal (Approved FY92)

\$15 million, IDA
\$64 million, total project cost

Implementing Agency: The Port Authorities of Dalian, Tianjin, Shanghai, Ningbo, Guangzhou and Xiamen

Task Manager: Scurfield

This project finances activities which will establish data on international ship traffic and waste types by designing and implementing a pilot interport ship waste monitoring system to facilitate enforcement; prepare an accident contingency plan for each port; initiate a Large Marine Ecosystems monitoring program for the Yellow Sea; undertake a study of the treatment of chemically contaminated water; provide and promote coordination among the authorities to upgrade environmental monitoring at the ports; and provide consultants' services and training related to the project. Other components define, design and provide landbased collection and disposal facilities; and establish or upgrade environmental monitoring and enforcement capabilities of port authorities.

China

Tianjin Urban Development and Environment (Approved FY92)

\$100 million, IDA
\$195 million, total project cost

Implementing Agency: Tianjin Municipal Government

Task Manager: Choi

This project supports technical assistance and training to improve project planning and evaluation, budgeting and management, and monitoring of urban development and infrastructure. The project also supports technical assistance and training in sub-sectoral management, including solid waste disposal and public transport management. It supports physical works to improve drainage, sewerage, solid waste management, roads, traffic management, and public bus operations. It also includes the resettlement of households as required for the physical works, which result in improved housing and environmental health conditions.

IBRD/IDA Projects with Primarily Environmental Objectives Active FY96

China

Beijing Environment (Approved FY92)

\$45 million, IBRD
\$80 million, IDA
\$299 million, total project cost

Implementing Agency: Beijing Municipality (BM)

Task Manager: Choi

This project's objectives are to assist the Beijing Municipality (BM) in improving its environmental planning and management capabilities, and to plan and carry out specific pollution abatement efforts in the municipality. The project is designed to demonstrate cost-effective interventions in the areas of water, air, hazardous waste and solid waste pollution; improve investment planning; establish effective measures for regulatory control; set up requirements for the efficient operation and maintenance of communal facilities for pollution control and abatement; and includes methods to recover costs from the users of these facilities.

China

Environment Technical Assistance (Approved FY93)

\$50 million, IDA
\$70 million, total project cost

Implementing Agency: National Environmental Protection Agency (NEPA) and Chinese Academy of Sciences (CAS)

Task Manager: Anderson

This project improves the coordination of environmental monitoring and ecological research; promotes cleaner industrial production and technology to prevent pollution and minimize waste; improves economic policy instruments for pollution control, specifically the pollution levy system; and strengthens the system for environmental assessment.

China

South Jiangsu Environment Protection (Approved FY93)

\$250 million, IBRD
\$584 million, total project cost

Implementing Agency: Jiangsu Province

Task Manager: Shum

This project assists authorities in strengthening environmental planning and management and in carrying out initiatives in the regional environmental strategy. It provides a line of credit for industrial pollution control and environmental management subprojects; supports the construction of municipal facilities for urban wastewater management; establishes solid- and hazardous- waste management and registration centers, emergency response centers, and hazardous materials storage and transshipment facilities; and provides technical assistance and training for the institutes responsible for environmental protection.

China

Forest Resource Development and Protection (Approved FY94)

\$200 million, IDA
\$356 million, total project cost

Implementing Agency: Ministry of Forestry

Task Manager: Scobey

This project seeks to develop institutional capacity through preparation of national management plans, related technical assistance, preparation of policy studies, and strengthening of information and research services on key issues in biodiversity conservation. Biodiversity conservation will be enhanced by establishing protected forests and nature reserves; developing afforestation models that promote biodiversity and reduce disease damage; promoting development of canopy levels; and developing multitiered vertically stratified canopies to minimize soil erosion and water runoff.

China

Loess Plateau Watershed Rehabilitation (Approved FY94)

\$150 million, IDA
\$259 million, total project cost

Implementing Agency: Ministry of Water Resources

Task Manager: Voegelé

This project aims to reduce erosion and inflows of sediment to the Yellow River by encouraging sustainable crop production on high-yielding level farmland; planting the slope lands with a variety of trees, shrubs, and grasses for land stabilization; afforestation of degraded agricultural lands in the area; and improved livestock management. It will also provide institutional support such as training, technological transfer and research to the Upper and Middle Reach Bureau to strengthen its capacity as a leading agency for soil and water conservation.

IBRD/IDA Projects with Primarily Environmental Objectives Active FY96

China

Shanghai Environment (Approved FY94)

\$160 million, IBRD
\$457 million, total project cost

Implementing Agency: Shanghai Municipality (SM)

Task Manager: Read

This project supports financial and policy initiatives and planning and management reforms, supported by an investment program of environmentally oriented capital works and institutional strengthening. The financial and policy initiatives developed as part of project preparation would focus on improving operational efficiency of urban services; mobilizing resources through tariff increases and service charges; and long-term environmental planning and investment programs.

China

Liaoning Environment (Approved FY95)

\$110 million, IBRD
\$351 million, total project cost

Implementing Agency: Liaoning Province (LP) and the Municipalities of Anshan, Bendi, Dalian, Fushun, Jinxi, and Jinzhou

Task Manager: Read

This project assists the government in reducing pollution and improving operational efficiency through the upgrading of technology, minimization of waste, and reuse of resources. It strengthens local capabilities in monitoring and enforcing environmental regulations and corporate sewerage utilities, and establishes a sound cost-recovery policy for pollution abatement services. It also includes an environmental protection fund for eligible pollution control subprojects of industrial enterprises and enhances institutional development through technical assistance and training. An additional component finances the rehabilitation and conservation of cultural heritage sites.

China

Yunnan Environment (Approved FY96)

\$135 million, IBRD
\$25 million, IDA
\$310 million, total project cost

Implementing Agency: Municipal Governments

Task Manager: Read

The project is part of a phased development program of Yunnan Province (YP) to improve environmental conditions and sustain urban services management. The principal objective is to provide a sustainable environmental framework for the economic and social development of the Province, while providing a conducive foundation for industrial growth. Specific objectives include: institutional strengthening for pollution control, and municipal water, wastewater, solid waste and nightsoil management; support for the improvement of lakes to allow the water to be used for potable supply, industry or agriculture; investments in pollution control and municipally-provided urban environmental services; and a comprehensive approach to management and financing of urban environmental infrastructure investments.

China

Chongqing Industrial Reform and Pollution Control (Approved FY96)

\$170 million, IBRD
\$478.1 million, total project cost

Implementing Agency: Chongqing Municipal Project Management Office

Task Manager: Hughes

The project supports the Bank's lending strategy in China within a policy framework that focuses on enhanced industrial pollution control linked to enterprise reform and technological restructuring. The project helps the Chongqing Municipality establish a strategy and prepare a long-term plan to achieve a major reduction in pollution for the whole industrial sector by increasing the effectiveness of environmental regulatory frameworks and pollution management capacity; reduce pollution and restructure productive facilities from iron and steel industries; and initiate a pilot effort to assist industrial enterprises in other industrial sectors to restructure their productive facilities, control pollution and transform themselves into modern corporations.

China

Hubei Urban Environmental Protection (Approved FY96)

\$125 million, IBRD
\$25 million, IDA
\$370 million, total project cost

Implementing Agency: Hubei Finance Bureau Municipal Government

Task Manager: Travers

This project strengthens and finances investment in wastewater and municipal solid waste management, as well as nightsoil handling and disposal; helps to abate industrial air pollution; and improves planning and financing of urban environmental services in the cities of Wuhan, Huangshi, Xiangfa, and Yichang.

IBRD/IDA Projects with Primarily Environmental Objectives Active FY96

China

Second Shanghai Sewerage (Approved FY96)

\$250 million, IBRD
\$633.3 million, total project cost

Implementing Agency: Shanghai Municipal
Sewerage Company, Ltd.

Task Manager: Read

This project follows up the first phase of Shanghai Municipality's development program to improve environmental conditions and management. Specific objectives of the project are to enhance wastewater and stormwater management through expanding wastewater collection, pretreatment and disposal capacity, and stormwater drainage facilities; reduce urban pollution impact while facilitating pollution control; improve wastewater utility financial and operational management; and strengthen sector institutions through training, feasibility studies, and future investment project preparation.

Indonesia

Forestry Institutions and Conservation (Approved FY88)

\$30 million, IBRD
\$63 million, total project cost

Implementing Agency: Ministry of Forests

Task Manager: Douglas

This project's primary objective strengthens planning, management and conservation in the Forestry sector, maximizing long-term contributions from forest resources. This prepares the foundation for future development through which the Bank could support subsequent forestry projects. Another objective is to address critical conservation needs which cannot be postponed due to the danger of an irreversible loss of productive lands, including some of Indonesia's most valuable nature reserves.

Indonesia

Yogyakarta Upland Area Development (Approved FY91)

\$16 million, IBRD
\$25 million, total project cost

Implementing Agency: Directorate General of
Regional Development (BANGDA), Ministry
of Home Affairs

Task Manager: Feder

This project improves upland productivity of the Yogyakarta region through conservation stabilization measures; provides on-farm technology displays covering vegetative conservation (such as fodder legumes to stabilize slopes), and alley-cropping to strengthen the technical basis for intensive microwatershed development in the uplands.

Indonesia

BAPEDAL Development Technical Assistance (Approved FY92)

\$12 million, IBRD
\$15 million, total project cost

Implementing Agency: Environmental Impact
Management Agency

Task Manager: Fisher

The primary objective of this project is to assist the Government of Indonesia (GOI) in implementing the Five Year BAPEDAL Development Plan, through strengthening the institutional capacity and role of BADEPAL and other agencies responsible for environmental management and pollution control; and designing and implementing pollution control measures at the central and regional levels.

Indonesia

Integrated Pest Management (Approved FY93)

\$32 million, IBRD
\$53 million, total project cost

Implementing Agency: Ministry of Agriculture

Task Manager: Ganguly

This project promotes environmentally sound crop production systems through a five-year program to train at least 800,000 farmers in the theory and application of Integrated Pest Management (IPM); supports occupational health studies and field investigations; and strengthens the regulatory and environmental management framework, primarily for IPM policies to reduce the risks associated with the manufacture, distribution, and application of pesticides.

IBRD/IDA Projects with Primarily Environmental Objectives Active FY96

Indonesia

Surabaya Urban Development (Approved FY94)

\$175 million, IBRD
\$618 million, total project cost

Implementing Agency: Surabaya Municipality

Task Manager: Rotner

This project improves urban environmental quality by assisting the local government's capacity to plan, implement, and operate infrastructure in an environmentally sound fashion and by enhancing community participation through management, staffing, and the financial ability of the government water authority for water supply and human waste disposal. It also protects and improves water quality in the Kali Surabaya; improves onsite wastewater disposal; provides offsite sewerage; demonstrates and evaluates the potential for conventional and low-cost offsite sanitation and cost recovery in human waste services; and improves waste collection and landfill disposal techniques. In addition, the project finances mechanisms that will protect resettlers' rights.

Indonesia

National Watershed Management and Conservation (Approved FY94)

\$57 million, IBRD
\$488 million, total project cost

Implementing Agency: Ministry of Forestry (MOF), Ministry of Agriculture (MOA), and Ministry of Home Affairs (MOHA)

Task Manager: Van de Poll

This project aims to raise the living standards of poor upland farmers by improving and restoring the productive potential of the resource base, while at the same time improving watershed environmental quality and protecting downstream watershed resources. It provides institutional strengthening through improvement of planning, management, and natural resource information systems; supports the creation of a multidisciplinary upland research program, and training and extension; develops a watershed on West Java; and invests for reforestation.

Indonesia

Kerinci-Seblat Biodiversity Integrated Conservation and Development (Approved FY96)

\$19.1 million, IBRD
\$47.2 million, total project cost

Implementing Agency: Ministry of Forestry and Home Affairs, and local governments in four participating provinces

Task Manager: Van de Poll

This project aims to protect biodiversity, prohibit habitat fragmentation through protection and management, and include the involvement of local communities in Kerinci-Seblat National Park. It develops an ICDP model to reconcile conservation, and regional and district development, that follows a two pronged approach to stabilize the boundary and protect biodiversity within the Park, and to enhance the livelihoods of poor households by providing them with alternative opportunities consistent with conservation. Its design meets this objective through institutional strengthening in integrated planning, coordinated implementation and regular monitoring and enforcement; building institutional capacity through increased staffing and in-service training; and resource management.

Korea, Republic of

Pusan and Taejon Sewerage (Approved FY92)

\$40 million, IBRD
\$130 million, total project cost

Implementing Agency: Ministry of Construction

Task Manager: Pancaroglu

This project supports the Government's 1990-96 National Wastewater Treatment Plan to improve the water quality in Korea's rivers and coastal waters by constructing sewage treatment plants in two of the largest municipalities. Under the project, sewage treatment plants will be constructed or expanded in Pusan and Taejon. The project includes the construction of the first phase of Yongho sewage treatment plant in Pusan, a sewage pumping station and 11.4 km of interceptors to carry sewage to the plant; and the second phase of Wonchon Dong treatment plant in Taejon and 11.9 km of interceptors to double existing capacity upon completion.

Korea, Republic of

Environmental Research and Education (Approved FY93)

\$60 million, IBRD
\$97 million, total project cost

Implementing Agency: Ministry of Education (MOE)

Task Manager: Rees

This project provides specialized equipment, training, and library materials to upgrade the capacity of twelve national agricultural colleges and nine national veterinary colleges to undertake research into key environmental problems; reinforces the colleges' programs to strengthen professional training in environmental fields; and supports improved environment-related research and teaching programs.

IBRD/IDA Projects with Primarily Environmental Objectives Active FY96

Korea, Republic of

Kwangju and Seoul Sewerage (Approved FY93)

\$110 million, IBRD
\$530 million, total project cost

Implementing Agency: Seoul Metro
Government

Task Manager: Pancaroglu

This project expands wastewater treatment facilities in Kwangju and Seoul; reduces pollution in two major rivers by supporting institutional development for wastewater management; and promotes innovative technological and policy initiatives for water conservation. The projects objectives include assistance in cleaning the Yongsan and Han Rivers in order to reduce health hazards and attain water quality needed for the cities' population and for those using water downstream; focusing the attention of the water agencies on conservation to reduce wastewater; encouraging the cities to develop self-financing efficiency for wastewater activity; and supporting technological and institutional improvements in the sector.

Korea, Republic of

Environmental Technology Development (Approved FY94)

\$90 million, IBRD
\$156 million, total project cost

Implementing Agency: Ministry of Education
(MOE)

Task Manager: Rees

This project strengthens selected national research institutes to adequately address environmental issues and to undertake environmental research and design activities. It provides institutional support to the policy and planning role of the Ministry of Environment by providing overseas training, visiting experts, and library materials, as well as equipment and equipment-related inputs and civil works to house the equipment.

Korea, Republic of

Ports Devel. & Env. Improvement (Approved FY95)

\$100 million, IBRD
\$1107 million, total project cost

Implementing Agency: Korea Maritime & Ports

Task Manager: Arnold

This project provides comprehensive support for addressing environmental issues in port and harbor development. It also finances facilities to collect, manage, and treat ship waste and to remove timber- and fish-processing plants that cause air, noise, and traffic pollution; provides training and technical assistance to strengthen the environmental capabilities of the Korea Maritime and Port Authority, and to a program which monitors pollution and ecosystem productivity in the Yellow Sea.

Korea, Republic of

Waste Disposal (Approved FY95)

\$75 million, IBRD
\$305 million, total project cost

Implementing Agency: Ministry of
Construction

Task Manager: Pancaroglu

This project assists the governments in Pusan and Chonbuk Province in addressing environmental, institutional, and technological concerns regarding wastewater and specified waste disposal, the health hazards of surface and groundwater contamination, and the reuse of treated effluent. The Pusan waste disposal plant will ensure satisfactory management of most hazardous waste substances generated in industries.

Laos, Peoples Democratic Rep.

Forest Management and Conservation (Approved FY94)

\$9 million, IDA
\$20 million, total project cost

Implementing Agency: Department of Forestry
(DOF)

Task Manager: Wong You Cheong

This project assists the introduction of a sustainable natural resource management system and conservation of the country's forest resources through support of an institutional framework and the formulation of the regulatory framework for the forestry sector; implementation of national programs on forest resource inventory and planning; sustainable forest management and protection; establishment and management of protected areas; and provision of the necessary technical assistance and human resource development.

IBRD/IDA Projects with Primarily Environmental Objectives Active FY96

Philippines

Environment & Natural Resource Management (Approved FY91)

\$158 million, IBRD
\$66 million, IDA
\$369 million, total project cost

Implementing Agency: Department of Environment and Natural Resources (DENR) and Department of Agriculture (DA)

Task Manager: Wiens

Aiming to preserve Philippines' biodiversity this project finances the re-establishment of natural resources where they have been degraded, and introduces sustainable land use practices. The objectives are to determine what areas must be preserved and introduce a management system; introduce user fees for public resources which discourage rent-seeking behavior; improve enforcement of logging regulations; provide secure tenure rights to users in return for sustainable resource use; provide extension services to upland populations; and establish mechanisms to support small-scale, community-based resource management and livelihood projects.

Thailand

Clean Fuels & Environmental Improvement (Approved FY95)

\$90 million, IBRD
\$370 million, total project cost

Implementing Agency: The Bangchak Petroleum Public Company Limited (BPPCL)

Task Manager: Farhandi

This project supports the reduction of air pollution attributable to petroleum fuels in Thailand by assisting the government in meeting reformulated gasoline and diesel oil specifications and improving its refinery operations through the installation of appropriate facilities and equipment to reduce refinery emissions and ensure safety.

Eastern Europe / Central Asia

Cyprus

Limassol Amathus Sewerage and Drainage (Approved FY90)

\$25 million, IBRD
\$69 million, total project cost

Implementing Agency: Sewerage Board of Limassol-Amathus (SBLA)

Task Manager: George

This project consists of a central sewage collection and treatment system which upgrades the existing stormwater drainage system and provides technical assistance and training and equipment to SBLA. Related to the project are studies that will lead to re-use of the treated effluent and sludge from the project and the formulation of a rural sanitation strategy.

Cyprus

Southeast Coast Sewerage and Drainage (Approved FY92)

\$32 million, IBRD
\$103 million, total project cost

Implementing Agency: Larnaca Sewerage and Drainage Board (LSBD), Ayia Napa Sewerage Board (ANSB), Paralimni Sewerage Board

Task Manager: George

This project provides drainage and the first phase of a sewage system for Larnaca, and sewerage systems for the communities of Ayia Napa and Paralimni. The project consists of central sewage collection, treatment, and disposal systems; the distribution of treated effluent for re-use; upgrading the existing stormwater drainage system in Larnaca; and technical assistance and training and provision of related equipment to the sewerage boards.

IBRD/IDA Projects with Primarily Environmental Objectives Active FY96

Czech Republic

Power and Environmental Improvement (Approved FY92)

\$246 million, IBRD
\$246 million, total project cost

Implementing Agency: CEZ and Sep

Task Manager: Wilberg

This project improves power plant efficiency to reduce air pollution in northern Bohemia, and health of the population; modernizes the transmission system; and facilitates interconnection of the CEZ and German power grids. These objectives will be accomplished in the context of overall reform of the energy sector. To this end, the project reduces total consumption of pollution-causing lignite through power plant efficiency improvements; curtails power plant SO₂ emissions by means of flu gas desulfurization; reduces dust and fly-ash pollution; increases the reliability, efficiency and economy of the CEZ transmission system; and assists in improving investment planning and corporate management and organization.

Estonia

District Heating Rehabilitation (Approved FY94)

\$38 million, IBRD
\$65 million, total project cost

Implementing Agency: State Energy Department

Task Manager: Gochenour

This project promotes energy efficiency and the economy by supporting the conversion and replacement of small boilers for use of peat and wood, to be harvested and used in an environmentally sustainable manner; reduces wastewater in the district heating systems; installs new substations with regulators and heat meters; and strengthens and restructures the district heating institutions.

Estonia

Haapsalu and Matsalu Bays Environment (Approved FY95)

\$2 million, IBRD
\$8.3 million, total project cost

Implementing Agency: Ministry of Environment

Task Manager: Soderstrom

This project improves water and wastewater treatment in Haapsalu and promotes management of point and nonpoint source pollution in the catchment areas of Haapsalu and Matsalu Bays, with a view to reducing pollution in the Baltic Sea. It also supports the planning and management of ecotourism and implementation of the management plan for the Matsalu State Nature Reserve. This project is part of the Bank's support for the Baltic Sea Environment Program.

Latvia

Liepaja Environment (Approved FY95)

\$4 million, IBRD
\$21 million, total project cost

Implementing Agency: Ministry of Environment

Task Manager: Soderstrom

This project includes water and wastewater investment components, which are complemented by an environmental management component. It also restores and enhances water quality in the city of Liepaja and the northern portion of Lake Liepaja and promotes environmentally sustainable development, of the coastal zone and protected areas in and around Liepaja, Ventspils, and Talsi. The project is part of the Bank's support for the Baltic Sea Environment Program.

Lithuania

Klaipeda Environment (Approved FY95)

\$7 million, IBRD
\$23.1 million, total project cost

Implementing Agency: Environment Protection DG

Task Manager: Soderstrom

This project focuses on the city of Klaipeda. It improves water supply and sanitation services in the city as well as the operational efficiency and management of the Klaipeda State Water Supply Enterprise; promotes environmentally sustainable management and development of the Kursiu Lagoon and adjacent coastal areas. This project is part of the Bank's support for the Baltic Sea Environment Program.

IBRD/IDA Projects with Primarily Environmental Objectives Active FY96

Lithuania

Klaipeda Geothermal Demonstration (Approved FY96)

\$5.9 million, IBRD
\$18 million, total project cost

Implementing Agency: Enterprise Geoterma

Task Manager: Halldin

The project comprises two components to optimize use of the available geothermal energy resources in Klaipeda. A technical assistance and training component, is complemented by an investment component for implementation of the Klaipeda Geothermal Demonstration Plant. The Demonstration Plant component includes investments in production and injection wells, above ground facilities and piping for the extraction and distribution system. The technical assistance component includes: design of the equipment for extraction and transfer of geothermal energy; preparation of a drilling program; management support for Enterprise Geoterma; training; and supervision of the project's implementation.

Lithuania

Siauliai Environment (Approved FY96)

\$6.2 million, IBRD
\$22.9 million, total project cost

Implementing Agency: Siauliai Water (SW),
Ministry of Environmental Protection (MoEP)

Task Manager: Soderstrom

This project aims to control pollution from the Upper Lielupe River Basin, a pollution source in the Baltic Sea, by promoting environmentally sustainable management and development and regional cooperation. The project improves the quality, reliability, and cost-efficiency of water supply and wastewater services in the municipality; demonstrates financially sustainable and socially responsible provision of municipal services; and environmental quality monitoring programs and enforcement systems. Components include the rehabilitation of water and wastewater systems; construction of water treatment; completion of a wastewater treatment plant; and institutional strengthening and training. This is part of the Bank's support for the Baltic Sea Environment Program.

Poland

Environment Management (Approved FY90)

\$18 million, IBRD
\$27 million, total project cost

Implementing Agency: Ministry of
Environment and Natural Resources

Task Manager: Schreiber

This project provides an umbrella framework for addressing the highest priority environmental concerns in Poland, and for moving toward a decentralized system of management. Furthermore, it strengthens environmental management by helping to establish the institutional, regulatory and informational basis for immediate corrective actions and longer-term extensive investments supported through bilateral and multilateral assistance. It also reduces health risks, decreases economic costs from environmental degradation and improves environmental quality. Support for these objectives is provided through financial and technical assistance, training and equipment.

Poland

Energy Resource Development (Approved FY90)

\$250 million, IBRD
\$590 million, total project cost

Implementing Agency: Coal & Gas/ Oil
Companies

Task Manager: Wilberg

This project improves the convertible currency earnings of Poland by increasing domestic production of natural gas and encouraging energy conservation for all forms of energy and fuel substitution through energy price reform. It also contributes to a reduction of environmental pollution related to energy use, and improves the competitive, regulatory, and financial framework of the sector entities by supporting the implementation of appropriate restructuring programs for the coal, gas, power, and heat sectors.

Poland

Heat Supply Restructuring and Conservation (Approved FY91)

\$340 million, IBRD
\$739 million, total project cost

Implementing Agency: District Heat
Companeat Companies

Task Manager: Benmessaoud

This project supports implementation of a comprehensive restructuring of the energy sector, commercialization and privatization of restructured enterprises and of petroleum exploration and production, introduction of a regulatory framework and improvement in energy pricing policies; extends the life of district heating assets through rehabilitation; promotes energy conservation through financing appropriate investments; and reduces environmental pollution by investing in energy-efficient equipment and systems and by supporting programs to replace small coal-fired boilers with gas-fired boilers.

IBRD/IDA Projects with Primarily Environmental Objectives Active FY96

Poland

Forest Development Support (Approved FY94)

\$146 million, IBRD
\$335 million, total project cost

Implementing Agency: Ministry of Environment

Task Manager: Wencelius

The project's assists the Government in executing its program of the development of selected forestry branches and protection of ecosystems in National Parks for 1993- 1997, thereby ensuring the protection of Poland's forest ecological capital, providing for social benefits, and accommodating sustainable forestry. Objectives include assistance in introducing biologically and environmentally sound management practices in the forestry sector; improvement of the efficiency of forestry activities; and improvement in the organization, management and financial structure of the Genera Directorate of State Forests and the Government's programs to modernize, restructure and privatize elements of the GDSF.

Poland

Katowice Heat Supply (Approved FY95)

\$45 million, IBRD
\$92.9 million, total project cost

Implementing Agency: REC-Katowice, The Katowice District Heating Enterprise

Task Manager: Benmessaoud

This project addresses the environmental, health, and economic problems caused by soot and dust particulates generated by energy production. It enhances energy conservation and efficiency in the district heating sector by extending the life of existing district heating assets through rehabilitation and introduction of modern technologies and by reducing environmental pollution through investments in energy-efficient equipment and systems as well as by supporting a program to eliminate coal-fired, heat-only boilers.

Russian Federation

Emergency Oil Spill (Approved FY95)

\$99 million, IBRD
\$140 million, total project cost

Implementing Agency: Komineft

Task Manager: Mckay

This project assists the Russian Federation and the pipeline operator in stabilizing the oil spill area and preventing ecological damage in the Pechora River Basin. It will continue to clean up in an environmentally appropriate way, provide short-term support for safe pipeline operations, evaluate the need for a replacement pipeline, and identify and implement other measures to mitigate against possible oil spills in the future.

Russian Federation

Environmental Management (Approved FY95)

\$110 million, IBRD
\$195 million, total project cost

Implementing Agency: Ministry of Environment

Task Manager: Batstone

This project supports the Russian Federation's Environmental Framework Program, which addresses environmental and natural resource management issues at federal, regional, and local levels and mainstreams them into the economic, social, and political adjustment process. It also includes policy and regulatory support and environmental epidemiology; water quality management; hazardous waste management; the creation and capitalization of a National Pollution Abatement Facility for the funding of economically and financially viable projects; and the creation of a Center for Project Preparation and Implementation under the Ministry of Environmental Protection and Natural Resources.

Slovenia

Environment (Approved FY96)

\$34.6 million, IBRD
\$55.4 million, total project cost

Implementing Agency: Ministry of Environment

Task Manager: Schreiber

This project's two main objectives are to support air pollution abatement in polluted cities in Slovenia and to provide for Geographical Information Systems in the Ministry of Environment and Planning. The Air Pollution Abatement Program assists households and boilerhouse operators in polluted cities to convert to cleaner fuels or heating systems by providing loans that would cover 80% of the conversion costs. Based on lessons learnt from a pilot phase in Maribor, this Program will be a self-sustaining revolving loan fund. The objective of the GIS Component is to collect, organize, and manage information for improved development and land-use planning, particularly in areas experiencing rapid development. It would also motivate municipalities to build local GIS centers as a part of the national GIS infrastructure.

IBRD/IDA Projects with Primarily Environmental Objectives Active FY96

Turkey

Izmir Water Supply and Sewerage (Approved FY87)

\$184 million, IBRD
\$522 million, total project cost

Implementing Agency: Izmir Water Supply
and Sewerage Authority

Task Manager: Gomez

This project, completed during fiscal 1996, assisted in establishing an autonomous water and sewerage authority for Izmir; encouraged appropriate cost recovery policies; corrected deficiencies and expanded the capacity of Izmir's water and sewerage systems; and brought about environmental improvements and reduced health hazards by eliminating the discharge of untreated sewage to streams and Izmir Bay. The project included water supply, water distribution, sewage treatment, and sewage collection components. A technical assistance component provided advice and training for the newly formed autonomous water and sewerage authority, IZSU.

Turkey

Istanbul Water Supply and Sewerage (Approved FY88)

\$218 million, IBRD
\$570 million, total project cost

Implementing Agency: Istanbul Water Supply
and Sewerage General Directorate (ISKI)

Task Manager: Coyaud

This project completed during fiscal 1996, improved and extended sewerage service to 70% of the population of Istanbul, provided for appropriate disposal of sewage to protect the waters and shorelines of the Sea of Marmara and the Bosphorus; reduced unaccounted-for water; and strengthened Istanbul Water Supply and Sewerage General Directorate's (ISKI) operation, and maintenance and industrial waste management capabilities. The project included rehabilitation of parts of water distribution systems; installation of a system for water supply monitoring and control; and construction of sewage collection and treatment facilities.

Turkey

Ankara Sewerage (Approved FY90)

\$173 million, IBRD
\$557 million, total project cost

Implementing Agency: Ankara Water Supply
and Sewerage Administration (ASKI)

Task Manager: Ikegami

This project provides new facilities and rehabilitates existing ones to promote environmental improvements and reduce health hazards in the Greater Ankara region. This will be achieved by: expanding sewage collection services to benefit 850,000 people; improving present sewerage services to about 500,000 people; and constructing drainage systems to reduce the risk of flooding. In addition, technical assistance and training would be provided to ASKI to strengthen its capability to carry out expanding operations.

Turkey

Bursa Water Supply and Sanitation (Approved FY93)

\$130 million, IBRD
\$258 million, total project cost

Implementing Agency: Bursa Water Supply
and Sewerage Authority (BUSKI), Bursa
Metropolitan Municipality (BMM), and

Task Manager: Coyaud

This project improves environmental conditions, reduces health hazards, and increases the efficiency of water usage by building water supply and waste treatment and transfer works, improves waste collection and disposal, and provides technical assistance for project implementation and institutional strengthening.

Turkey

Eastern Anatolia Watershed Rehabilitation (Approved FY93)

\$77 million, IBRD
\$121 million, total project cost

Implementing Agency: Ministry of Forestry
(MOF) and Ministry of Agriculture and Rural
Affairs (MARA)

Task Manager: Kadiresan

This project addresses problems of rural poverty and natural resource degradation by helping to improve the productivity of range and forest land; promotes the production of fuelwood, cultivated fodder, and sustainable use of marginal farmlands; facilitates the adoption of treatments for range and forest land; and supports the increased responsibility and involvement of local communities in planning and managing their resources.

IBRD/IDA Projects with Primarily Environmental Objectives Active FY96

Latin America / Caribbean

Bolivia

Eastern Lowlands Regional Development (Approved FY90)

\$35 million, IDA
\$55 million, total project cost

Implementing Agency: Govt./Cordecruz

This project supports the planning and management of natural resources by preparing a land-use plan for the region that encompasses the results of agroecological zoning, soil studies and mapping, and studies on water, forestry, livestock, and land tenure. It also protects forest reserves and national parks (such as Noel Kempf Mercado National Park) and indigenous people by demarcating tribal lands.

Task Manager: McMahan

Bolivia

Environmental Technical Assistance (Approved FY93)

\$5 million, IDA
\$9 million, total project cost

Implementing Agency: National Environment Fund

This project strengthens key government-related institutions through training for planning, management, environmental assessment, and evaluation. It also supports the development and strengthening of an environmental legal and regulatory framework; and helps to develop the capacity of the primary school system to provide environmental education.

Task Manager: Plaza

Bolivia

Environment, Industry, & Mining (Approved FY96)

\$11 million, IDA
\$50 million, total project cost

Implementing Agency: Ministerio de Minas y Metalurgia

This project supports the implementation and refinement of a regulatory framework to assure that privately-led mining and industrial activities grow in an environmentally-friendly fashion. It also helps remediate contamination from past mining activities for which the State accepts liability, including remediation activities that help to facilitate private investment in the mining sector, and assists in attracting other financial resources for investments for mining community environmental problems which are otherwise ineligible for financing.

Task Manager: Barham

Brazil

Second Industrial Pollution Control (Approved FY87)

\$50 million, IBRD
\$100 million, total project cost

Implementing Agency: Banco de Desenvolvimento Economico Social (BNDES)

This project finances subprojects for industrial enterprises to make investments to reduce of industrial pollution in Sao Paulo and institutional strengthening of Environmental Protection Agency (CETESB), the State Environmental Protection Agency (SEPA) of Sao Paulo State. It also finances the purchase of specialized monitoring and laboratory analysis equipment, applied research and studies in fields of biological and toxic treatment, hazardous risk assessment and cost-benefit analysis, and training of staff and CETESB in pollution control.

Task Manager: Tlaiye

IBRD/IDA Projects with Primarily Environmental Objectives Active FY96

Brazil

Minas Gerais Forestry Development (Approved FY88)

\$49 million, IBRD
\$100 million, total project cost

Implementing Agency: Minas Gerais Dev.
Bank (BDMG), State Forest

Task Manager: Kirmse

The project finances the establishment of up to 165,000 ha of forest plantations for industrial purposes and the building of charcoal manufacturing kilns and infrastructure through a line of credit; planting of about 40,000 ha of woodlots on small and medium-sized farms; staff, equipment and consulting services for forestry conservation including control, supervision and management of forest harvesting and wood utilization, conservation education, and development of parks and reserves. The project also finances institutional development.

Brazil

Land Management I - Parana (Approved FY89)

\$63 million, IBRD
\$138 million, total project cost

Implementing Agency: State Secretariat of
Agriculture and Supply of Parana

Task Manager: Lituma

This project increases agricultural production and farm incomes by promoting the adoption of sustainable, modern forms of land management and soil and water conservation, thus safeguarding farmer incomes and the state's natural resources. This is achieved through increasing the extent and duration of vegetative cover of the soil, better protecting it from intense rainfall; improving internal soil structure and drainage, thus increasing water infiltration; and safely disposing of any remaining runoffs.

Brazil

Land Management II (Approved FY90)

\$33 million, IBRD
\$72 million, total project cost

Implementing Agency: State Secretariat of
Agriculture and Supply of Santa Catarina

Task Manager: Lituma

This project provides land use mapping, planning, and monitoring for 520 project microcatchments. It develops an incentive program for land management, soil conservation, and pollution control to help farmers belonging to a microcatchment association properly plan land management and implement collective soil conservation and agricultural pollution control measures; plans erosion control along rural roads to be implemented as parts of microcatchment management plans; supports forestry development and protection of natural resources through forestry conservation; develops environmental legislation concerning land use, soil conservation, and agricultural pollution; supports management of state parks and protection of biological reserves.

Brazil

National Environment (Approved FY90)

\$117 million, IBRD
\$166 million, total project cost

Implementing Agency: Ministry of Planning

Task Manager: Gross

This project strengthens the protection of the country's most important conservation areas and imminently endangered ecosystems, with special emphasis on the reduction of economic and environmental losses associated with uncontrolled deforestation, soil erosion, and air and water pollution in the Pantanal, Legal Amazon, Atlantic Forest and Brazilian Coast; the institutions of the environmental sector, with special emphasis on the strengthening of National Environmental Agency (IBAMA) and State Agencies in the Legal Amazon and Pantanal; and the regulatory framework of the environmental sector.

Brazil

Mato Grosso Natural Resource Management (Approved FY92)

\$205 million, IBRD
\$286 million, total project cost

Implementing Agency: Secretariat of Regional
Development, Presidency of the Republic
Secretariat of Planning of Mato Grosso

Task Manager: Lituma

This project supports changes in policies, regulations and public investment programs; improves the knowledge of natural resources by providing more detailed data on land capability and land tenure; reduces environmental degradation and ensures biodiversity preservation; protects and enforces the borders of conservation units, indigenous reserves, public forests and controls and prevents illegal deforestation, wood transport, and forest fires; develops sustainable agriculture in suitable areas; and consolidates the technical operational capacity of institutions, particularly those responsible for management of natural resources, and the protection and management of forests and indigenous reserves, and agricultural services.

IBRD/IDA Projects with Primarily Environmental Objectives Active FY96

Brazil

National Industrial Pollution Control (Approved FY92)

\$50 million, IBRD
\$100 million, total project cost

Implementing Agency: Banco de
Desenvolvimento Economico e Social
(BNDES)

Task Manager: Tlaiye

This project improves public health and living conditions of the population in and around industrialized areas. It also devises a regulatory framework for pollution control; obtains a political commitment from State authorities to improve the environment; supports a capable State Environmental Protection Agency (SEPA); familiarizes the banking system with financing free-standing pollution control investments, allowing industry to have access to pollution control financing. It strengthens the institutional capabilities of active SEPAs in monitoring and analyzing environmental problems and strengthens the National Development Bank's (BNDES) ability to process free-standing pollution abatement loans.

Brazil

Rondonia Natural Resource Management (Approved FY92)

\$167 million, IBRD
\$228 million, total project cost

Implementing Agency: Secretariat of Regional
Development, Presidency of the Republic
Rondonia State Secretariat of Planning

Task Manager: Lituma

This project implements an improved approach to natural resource management, conservation and development in the State of Rondonia. It assist the government to institute a series of changes in policies, regulations and public investment programs; conserves the biodiversity of the state; protects and enforces the borders of conservation units, Amerindian reserves, public forests and extractive reserves, and controls and prevents illegal deforestation, wood transport and forest fires; develops intensive and integrated farming systems in areas of agriculture and agro-forestry; supports priority investments in socio-economic infrastructure and services needed to implement the State's agro-ecological zoning.

Brazil

Water Quality and Pollution Control-Sao Paulo/Parana (Approved FY93)

\$245 million, IBRD
\$494 million, total project cost

Implementing Agency: Federative Republic of
Brazil, and the local State Governments of Sao
Paulo and Parana

Task Manager: Rodriguez

This project reduces current levels of water pollution and preserves water quality through river regularization and flood control drainage; provides for basic sanitation services, and the collection and disposal of solid waste. It helps establish policy for water pollution control and creates water basin management, develops the financial capacity to provide services, and sets up project preparation facilities to help start water pollution control projects in the most congested urban areas of Brazil.

Brazil

Minas Gerais Water Quality and Pollution Control (Approved FY93)

\$145 million, IBRD
\$308 million, total project cost

Implementing Agency: Secretariats of State-
Mato Grosso

Task Manager: Rodriguez

This project helps to recuperate environmentally deteriorated river basins through improved flood control and urban drainage, and the collection, treatment, and disposal of municipal and industrial sewage and solid waste; strengthens environmental protection and water basin management; and promotes institutional strengthening of the State Environmental Agency.

Brazil

Espirito Santo Water Supply and Coastal Pollution Management (Approved FY94)

\$154 million, IBRD
\$308 million, total project cost

Implementing Agency: State Water Company
of Espirito Santo (CESAN) and State
Secretariat of the Environment (SEAMA)

Task Manager: Velez

The project comprises an investment component to help finance CESAN in 1994-1999 investment program and an institutional program to strengthen the capabilities of both CESAN and the State Secretariat of the Environment (SEAMA), through studies, technical assistance and training in selected areas, and to provide appropriate water and sanitation infrastructure in low-income urban areas of Grande Vitoria and Guarapari.

IBRD/IDA Projects with Primarily Environmental Objectives Active FY96

Brazil

Environmental Conservation and Rehabilitation (Approved FY96)

\$50 million, IBRD
\$109.9 million, total project cost

Implementing Agency: Companhia Vale Do Rio Doce (CVRD)

Task Manager: Babelon

This project consists of air, water, and soil pollution control and land reclamation investments in CVRD's mining, industrial, rail and port operations throughout the country; natural resource investments; socially oriented investments, studies in research, training, and technical assistance; implementation of a comprehensive corporate environmental information, control, monitoring and auditing system; further sub-projects and studies aimed at reducing pollution and environmental degradation, and conserving natural ecosystems, sustainable management of natural forests; environmental education, and social programs aimed at improving the welfare of communities.

Colombia

Natural Resource Management Program (Approved FY94)

\$39 million, IBRD
\$65 million, total project cost

Implementing Agency: National Planning Department

Task Manager: Hazelton

This project aims to arrest the degradation of natural renewable resources through the development of a national forest policy and a strategy for natural resource management in the Choco Region; ecological zoning; establishment of an environmental monitoring system; titling and demarcation of land; and institutional support to Black and Amerindian communities. It also supports local projects to protect and rehabilitate watershed areas through technical assistance, and it strengthens the capacity of National Parks Services to protect threatened ecosystems by funding for staff, infrastructure, and technical assistance.

Colombia

Urban Environment Technical Assistance (Approved FY96)

\$20 million, IBRD
\$40 million, total project cost

Implementing Agency: Min. of Environment, Depts of Env't of Bogota, Cali & Barranquilla; Metro Planning Agency of Aburra Valley.

Task Manager: Serra

This project supports the implementation of Colombia's National Environmental Policy and improvement of environmental management in urban areas through strengthening the capacity of the MinAmbiente to provide policy advice and technical assistance to Colombian cities, and strengthening environmental management agencies in the urban centers of Bogota, Cali, Medellin, and Barranquilla. In support of this objective, the project also helps establish the National Environmental Information System, at the national and local levels, which is instrumental in improving urban environmental management.

Chile

Second Valparaiso Water Supply and Sewerage (Approved FY91)

\$50 million, IBRD
\$142 million, total project cost

Implementing Agency: Empresa de Obras Sanitarias de Valparaiso S.A. (ESVAL)

Task Manager: Kriegler

This project seeks to achieve investments in infrastructure through improved maintenance and rehabilitation; increased efficiency in public services; and alleviation of environmental pollution that adversely affects public health and hinders economic development. Objectives include increasing the sanitary conditions of streams, public beaches, and the marine environment in the Greater Valparaiso area by reducing water losses, improving water quality, and increasing the efficiency of the city's water utility. It also supports expansion of the water supply services and the increase of ESVAL's operational efficiency and capacity to successfully implement the proposed investment and development program.

Chile

Environment Institutions Development (Approved FY93)

\$12 million, IBRD
\$33 million, total project cost

Implementing Agency: National Environmental Commission

Task Manager: Pisani

This project establishes an institutional framework to manage activities for environmental protection and the conservation of natural resources, including updating the legal environment framework, incorporating environmental assessment in public and private sector activities, training professionals in environmental and natural resource management, and establishing an environmental information system. It also supports institutional strengthening and the economic analysis of selected environmental problems and strengthens the environmental management capacity of priority sectors.

IBRD/IDA Projects with Primarily Environmental Objectives Active FY96

Ecuador

Lower Guayas Flood Control (Approved FY91)

\$59 million, IBRD
\$98 million, total project cost

Implementing Agency: The Commission for the Development of the Guayas River Basin (CEDEGE)

Task Manager: Emanuel

The project's flood control system benefits urban and rural inhabitants in an area of 170,000 ha through protection from catastrophic flooding. To ensure sustainability, it includes an Agricultural Development Plan to improve production systems for smallholders. A multi-institutional effort coordinated by CEDEGE includes research programs in rice, cocoa, and small-scale mechanization; seed production; extension; strengthening smallholder farmer organizations; and on-farm investments to be financed with farmers' own resources or with commercial credit. It also provides support to environmental protection and conservation initiatives. Support focuses on studies; monitors environmental impact on water bodies, soil, and fauna; and develops integrated pest management.

Ecuador

Mining Development and Environmental Control -- Technical Assistance (Approved FY94)

\$14 million, IBRD
\$24 million, total project cost

Implementing Agency: Ministry of Energy and Mines

Task Manager: Venkateswaran

This project attracts new mining investment and supports the development of increased, yet environmentally sustainable, mineral production. Environmental Assessment (EA) recommendations have been used extensively in project design. Components of the project are dedicated to environmental improvements through monitoring pollution and occupational health issues; removal of contaminating wastes in the most-sensitive areas; and a technology-upgrading subcomponent that helps to introduce and encourage environmentally sound mining and processing methods among artisanal and small-scale miners.

Ecuador

Environment Management (Approved FY96)

\$15 million, IBRD
\$20 million, total project cost

Implementing Agency: The Presidency / Environmental Advisory Commission (CAAM)

Task Manager: Dabbagh

This project implements a national environmental strategy; assists the Government to build up an environmental management capacity in areas within the National Environmental Action Plan: urban areas, the Gulf of Guayaquil, and the Amazon. Objectives strengthen the environmental policy analysis, program design and management capability of ministries; establish and strengthen urban environmental management capability; build institutional capacity; and carry out the participatory process and technical analysis to resolve Ecuador's serious environmental problems. These objectives are achieved through the implementation of studies, workshops, public relations campaigns, demonstration sub-projects, and database development.

Honduras

Environment Development (Approved FY95)

\$10.8 million, IDA
\$12.5 million, total project cost

Implementing Agency: Seda

Task Manager: Quintero

This project strengthens the governmental agencies' capacity in environmental and natural resource planning; policy, legal, and regulatory framework development; environmental monitoring; and the enforcement of environmental laws and regulations. It assists with strengthening and implementation of a national system of environmental impact assessment that engages NGOs, communities, and the private sector in the review process and develops the environmental management capacity of selected municipalities in a manner that increases the involvement of affected organizations and individuals.

Mexico

Environment and Natural Resources (Approved FY92)

\$50 million, IBRD
\$127 million, total project cost

Implementing Agency: Secretariat of Urban Development and Ecology (SEDUE)

Task Manager: Mohadjer

This project supports the government's strategy of transforming SEDUE/SE over time into an organization that supervises and coordinates environmental work carried out by other levels of government, federal agencies, or under contract to private sector firms. The project's specific objectives support areas where preinvestment work is well developed and institutional absorptive capacity is adequate; reform and strengthen the administrative structure of SEDUE's federal and state offices in preparation for increased decentralization of authority to state environmental agencies over the medium term; and support development of a sectoral strategy and policy framework that is integrated into the government's economic policies.

IBRD/IDA Projects with Primarily Environmental Objectives Active FY96

Mexico

Transport Air Quality Management (Approved FY93)

\$220 million, IBRD
\$1087 million, total project cost

Implementing Agency: National Finance
Institution (NAFIN)

Task Manager: Mumme

This project supports a comprehensive program to reduce air pollution and control increases in emissions of nitrogen oxide, volatile organic compounds, carbon monoxide, lead, and particulate matter from transport sources. It also develops a policy framework to support transport and air quality objectives, improves the scientific base underlying the development and management of the program, and strengthens the institutional capacities to plan and implement programs effectively during the long-term.

Mexico

Northern Border Environment (Approved FY94)

\$368 million, IBRD
\$762 million, total project cost

Implementing Agency: Banco Nacional de
Obras y Servicios (BANOBRAS) and The
Ministry of Social Development (SEDESOL)

Task Manager: Phung

This project improves environmental quality on the U.S.- Mexican border by strengthening planning, management, and enforcement capabilities and carrying out priority investments and action plans that preserve the environment. A sectoral EA carried out for the Mexico Second Solid Waste Management Project also covered the Northern Border Environment Project, which includes a solid waste management component.

Mexico

Second Solid Waste Management (Approved FY94)

\$200 million, IBRD
\$416 million, total project cost

Implementing Agency: Banco Nacional de
Obras y Servicios (BANOBRAS) and The
Ministry of Social Development (SEDESOL)

Task Manager: Stein

This project finances investment to improve solid waste services and extend their coverage in participating medium-size cities. The EA made the following recommendations: containerization and mechanical collection fulfill requirements of low cost and ease of operation; sanitary landfills are the most-suitable option for medium to small Mexican cities; high-density landfills are suitable for cities with high groundwater tables and groundwater pollution. Environmental impacts from project siting, construction, and operation are kept to a minimum through environmental screening and assessment, including public consultation of proposed subloans.

Mexico

Water and Sanitation II (Approved FY94)

\$350 million, IBRD
\$770 million, total project cost

Implementing Agency: Comision Nacional de
Agua

Task Manager: Pereira Da Silva

This project's objectives improve the quality and expand the coverage of water and sanitation services; strengthen the institutional capacity of CNA to assist local water utilities (WU) in management, operation and planning; train personnel in the management and maintenance of their systems; reduce subsidies by promoting development of WUs that are operationally and financially autonomous; encourage and attract private sector participation and investment; improve the management of water resources by supporting water quality programs; support BANOBRAS' efforts to appraise and supervise subprojects in the Mexico City and state offices; and strengthen the sector's capacity to enforce environmental regulations and carry out EAs.

Mexico

Water Resources Management (Approved FY96)

\$186.5 million, IBRD
\$341.9 million, total project cost

Implementing Agency: Comision Nacional del
Agua - CNA

Task Manager: Olson

This project promotes conditions for environmentally sustainable, economically efficient and equitably allocated use of water resources in Mexico, supports the integrated comprehensive management of water resources, and increases the benefits while reducing the risk related to existing hydraulic infrastructure. Objectives include: supporting groundwater conservation by reducing exploitation and contamination; promoting the restoration of surface water quality; improving meteorological services for water management, the society and economy; improving water allocation; promoting the establishment and strengthening of river basin councils; developing hydrographic region plans; and improving fee collection and the registry of water rights for users.

IBRD/IDA Projects with Primarily Environmental Objectives Active FY96

OECS Countries

Solid Waste Management (Approved FY95)

\$6.8 million, IBRD
\$5.7 million, IDA
\$50.5 million, total project cost

Implementing Agency: National Solid Waste Management Entities and the OECS Secretariat

This project seeks to reduce public health risks and protect the the environmental integrity of the islands and their coastal and marine systems by improving domestic solid waste management facilities, and also reducing terrestrial and marine pollution through avoiding and discouraging indiscriminate disposal of solid waste on and off shore. A further objective is to enhance public health and environmental quality by strengthening the countries' capacities to effectively manage and dispose of solid waste in an environmentally sustainable manner.

Task Manager: Dabbagh

Paraguay

Land Use Rationalization (Approved FY92)

\$29 million, IBRD
\$41 million, total project cost

Implementing Agency: Ministry of Hacienda and Ministry of Agriculture

This project raises the government's effectiveness in land titling by improving the Government's information base and the long-range planning of natural resource management; provides agricultural services; and raises fiscal revenue from the sector. The second part of this project provides a basis for strengthening the institutions responsible for land settlement and for natural resource management and protection. The project is part of a phased strategy to strengthen basic agricultural services.

Task Manager: Mckenna

Paraguay

Natural Resources Management (Approved FY94)

\$50 million, IBRD
\$79 million, total project cost

Implementing Agency: Ministry of Agriculture

This project establishes an institutional framework dealing with agricultural and natural resource management; generates information through research; assists small farmers in the establishment of sustainable agricultural production; and encourages the participation of the local population in implementation. It also supports planning and implementing actions designed to slow soil degradation; protects, conserves, and restores genetic diversity; develops research, reforestation, and technology generation; strengthens environmental legislation and institutional presence in forestry reserves and national parks; and makes available grant resources to correct damages caused by the indiscriminate conversion of land for agricultural production.

Task Manager: Abramovich

Trinidad and Tobago

Environmental Management (Approved FY95)

\$6.25 million, IBRD
\$11 million, total project cost

Implementing Agency: Ministry of Planning and Development

This project establishes an environmental management agency that is responsible for the legal and regulatory framework covering all aspects of the environment in the country. Technical assistance and training help bring the newly created Environmental Management Authority to full operational capacity.

Task Manager: Wholey

Uruguay

Natural Resources Management and Irrigation Development (Approved FY94)

\$41 million, IBRD
\$74 million, total project cost

Implementing Agency: Ministry of Agriculture

This project develops and implements a soil and water management strategy by supporting environmentally sound investments in rehabilitation and development of irrigation, drainage schemes and service infrastructure; supports the development of pilot microcatchment to gain experience in the management of ecologically fragile zones. It also establishes soil and water management demonstration farms in selected agroecological zones where potential soil degradation problems have been identified. It includes priority applied research and technology transfer subprojects and provides technical assistance for forestry development and nontraditional agricultural export.

Task Manager: Abramovich

IBRD/IDA Projects with Primarily Environmental Objectives Active FY96

Venezuela

INPARQUES (Approved FY95)

\$55 million, IBRD
\$96 million, total project cost

Implementing Agency: INPARQUES

This project strengthens the government's capability to manage Venezuela's national and urban parks, natural monuments, and wildlife reserves. The project focuses on strengthening conservation and protection of vulnerable areas; intensifying public environmental research, training, and education efforts; and improving the economic sustainability of the national parks and other protected areas.

Task Manager: Constantino

Middle East / North Africa

Algeria

Pilot Forestry and Watershed Management (Approved FY92)

\$25 million, IBRD
\$37 million, total project cost

Implementing Agency: Ministry of Agriculture

This project's objective develops a long-term action program to better protect and manage Algeria's natural resources, specifically its forests, watersheds, and nature conservation areas. It strengthens the institutions working in these areas and, through appropriate testing, develops the policy and technical basis for replication of suitable project components as part of a national resource management program.

Task Manager: Stier

Algeria

Water Supply and Sewerage Rehabilitation (Approved FY94)

\$110 million, IBRD
\$170 million, total project cost

Implementing Agency: Ministry of Equipment

This project promotes water conservation by charging the true economic cost of the services to consumers. In addition, as part of a larger water supply and sewerage restructuring effort, this project seeks to rehabilitate existing wastewater treatment plants in order to prevent the spread of water pollution that is damaging to the natural environment.

Task Manager: Rodriguez

Algeria

Industrial Pollution Control (Approved FY96)

\$78 million, IBRD
\$118.1 million, total project cost

Implementing Agency: Direction Generale de l'Environnement (DGE); Entreprise Nationale de Siderurgie (ENSIDER); Enterprise

Task Manager: Arif

The project's broad objective is to assist the Government of Algeria in reducing exposure to hazardous pollution which causes health problems or serious ecological degradation. Its specific objectives are to strengthen the institutional, legal and monitoring framework; activate a National Environmental Fund; and initiative and investment program in the industrial sector of Annaba for mitigating the adverse environmental and health effects of pollution.

IBRD/IDA Projects with Primarily Environmental Objectives Active FY96

Egypt

Private Sector Tourism (Approved FY93)

\$130 million, IBRD
\$784 million, total project cost

Implementing Agency: Ministry of Tourism

Task Manager: Graham

This project provides financial support for water supply and sewage and solid waste collection and disposal facilities for tourist resorts; provides technical assistance and training to develop environmental guidelines and enforce rules; and helps to strengthen the institutional framework for environmentally sound developments. An associated GEF component supports the development and implementation of a coastal zone environmental management plan for the Red Sea coast.

Egypt

Matruh Resource Management (Approved FY93)

\$22 million, IDA
\$31 million, total project cost

Implementing Agency: Ministry of Agriculture and Land

Task Manager: Souhlal

This project supports natural resource management to conserve the area's water, land, and vegetation; promotes adaptive research, extension services, and training directed to local communities; provides rural finance with special attention to on-farm and off-farm income-generating activities targeted to small farmers, the landless, and women; and strengthens community participation and dialogue with existing local institutions.

Egypt

Pollution Abatement (Approved FY96)

\$20 million, IBRD
\$20 million, IDA
\$50.5 million, total project cost

Implementing Agency: Egyptian Environmental Affairs Agency

Task Manager: Arif

This project assists the Government of Egypt in reducing industrial pollution causing adverse health effects and/or ecological degradation. Its specific objectives are to strengthen the monitoring and enforcement capabilities of the environmental institutions and establish technical and financial mechanisms for supporting pollution abatement investments in Greater Cairo, Alexandria, and the Suez Canal cities of Suez and Ismailia.

Lebanon

Solid Waste & Environmental Management (Approved FY95)

\$55 million, IBRD
\$135 million, total project cost

Implementing Agency: Council for Development and Reconstruction (CDR) and the Ministry of Municipality and Rural Affairs

Task Manager: Graham

This project completes the rehabilitation of solid waste collection and disposal systems envisaged under the National Emergency Reconstruction Program; improves the collection and disposal of hospital waste; strengthens the government and private sector capabilities for solid waste management; and helps to develop a coastal zone management plan that protects the Lebanese coast from further degradation.

Morocco

Second Forestry Development (Approved FY90)

\$49 million, IBRD
\$100 million, total project cost

Implementing Agency: Ministry of Agriculture

Task Manager: Stier

This project strengthens forestry planning and policy and assists Morocco in maintaining and improving its forestry potential and protects its watersheds in harmony with other demands such as domestic stock grazing. Components are: forestry planning including national forest inventory, demarcation, management and a national reforestation plan; field operations paid by the communes, consisting of regeneration of the natural forest, plantation establishment, watershed, forest range and pest management, stabilization of dunes, road construction and rehabilitation; supports nature conservation, forest research, staff housing rehabilitation, equipment purchases, training and technical assistance.

IBRD/IDA Projects with Primarily Environmental Objectives Active FY96

Morocco

Environmental Management (Approved FY94)

\$6 million, IBRD
\$11 million, total project cost

Implementing Agency: Under Secretariat of
the Environment (USE)

Task Manager: Raimondo

This project assists the Government in strengthening its institutional and regulatory framework for managing environmental protection. It is expected that the establishment of the needed environmental institutions and full development of the necessary environmental laws would require a concerted and long term effort spanning several years. The project-representing the first step of such efforts-defines the elements for and initiates the process of strengthening the Government's environmental capacities.

Tunisia

Second Forestry Development (Approved FY93)

\$69 million, IBRD
\$148 million, total project cost

Implementing Agency: Directorate General of
Forests (DGF)

Task Manager: Gois

This project supports the sustainable development and management of forests with the active participation of forestry populations through institutional and infrastructure strengthening; preparation of environmental management plans; establishment of plantations; rehabilitation of prairies; and support for studies and training.

Tunisia

Northwest Mountainous Areas Development (Approved FY94)

\$28 million, IBRD
\$50 million, total project cost

Implementing Agency: Ministry of Agriculture

Task Manager: Woldu

This project aims to arrest degradation of the natural resource base through active participation of village communities. It supports improvement of the management and productivity of range and farm land; measures to reduce erosion, runoff, and reservoir sedimentation; and increased involvement of village organizations. It also supports strengthening of the technical and implementation capability of the executing agency and the planning capability of village committees through technical assistance and training.

Yemen, Republic of

Land and Water Conservation (Approved FY92)

\$33 million, IDA
\$48 million, total project cost

Implementing Agency: GDI/Ministry of
Agriculture and Water Resources (MAWR)

Task Manager: Raturi

This project, to be implemented over a period of six years, consists of technical developments in irrigation and in forestry and land conservation; institutional strengthening of the MAWR agencies responsible for the water resources sector, forestry and pilot activities; and developing approaches for watershed management.

IBRD/IDA Projects with Primarily Environmental Objectives Active FY96

South Asia

Bangladesh

Forest Resources Management (Approved FY92)

\$50 million, IDA
\$59 million, total project cost

Implementing Agency: Forest Department

Task Manager: Baykal

This project improves and institutionalizes the Resource Information Management System which evolved under the Second Forestry Project; integrates environmental and socio-economic factors; implements a pilot scheme for people's participation in forest development; expands forest resources through plantation establishment and improved management; formulates management plans for nature conservation areas; and supports investments in selected sanctuaries and parks. Also included in the objectives are streamlining and creating within FD an effective environmental management capability; and supporting professional and technical education, training and research.

Bhutan

Third Forest Development (Approved FY94)

\$5 million, IDA
\$9 million, total project cost

Implementing Agency: Ministry of Agriculture

Task Manager: Keil

This project develops and implements an approach for sustainable protection, management, and use of forest resources by involving rural communities in improving and managing forests and increasing the level of economic activity through social forestry practices. It also supports adoption of multiple-use management of forest lands; rehabilitation of degraded forests to maintain their economic and environmental benefits; and improvement of the planning and implementation capacity of the Department of Forests.

India

Integrated Watershed Development (Plains) (Approved FY90)

\$55 million, IDA
\$55 million, total project cost

Implementing Agency: Ministry of Agriculture and Governments of Gujarat, Orissa, Raja

Task Manager: Hill

This project includes watershed development works consisting of a menu of eligible land treatments to arrest the productivity decline on arable and private lands, and to restore ground cover on non arable (public and communal) lands; technical support through improvements in location; specific research and nursery development; project implementation support to strengthen project administration; physical planning and a geographical information system; and monitoring and evaluation. It also includes training and technical assistance to promote soil and moisture conservation technologies and participatory planning and sustainable resource management.

India

Integrated Watershed Development (Hills) (Approved FY90)

\$75 million, IDA
\$75 million, total project cost

Implementing Agency: Government of India (GOI)/NWDB

Task Manager: Hill

The main objective of this project is to slow and reverse degradation of the natural environment, through the use of appropriate soil and moisture conservation technology. The aim is to lay the foundation for sustainable increases in production to keep pace with population growth. The project promotes known vegetative technologies and verifies others; develops approaches for coordinated interactive planning; and strengthens the management and use of non-arable lands.

IBRD/IDA Projects with Primarily Environmental Objectives Active FY96

India

Industrial Pollution Control (Approved FY91)

\$124 million, IBRD
\$32.6 million, IDA
\$235.6 million, total project cost
Implementing Agency: Ministry of Environment

Task Manager: Vergara

This project supports the Government of India's efforts to prevent environmental degradation due to industrial operations; assists in identifying and implementing a cost effective program for industrial pollution monitoring, control and abatement; promotes enforcement of legislation on environmental protection regarding industrial sources; supports efforts by industries to comply with regulations; and supports extension services and research in waste minimization, source recovery and pollution abatement. Components include: strengthening the Central and State Pollution Control Boards in four selected states; investing in industries that comply with regulations; supporting the set up of common treatment facilities; and technical assistance.

India

Maharashtra Forestry (Approved FY92)

\$124 million, IDA
\$142 million, total project cost

Implementing Agency: Forest Dept. of Maharashtra

Task Manager: Keil

This project undertakes several sector reforms through the reorganization of the public forest administration, and an active role of the NGOs, village panchayats, cooperatives and private sector. These reforms consist of improving the state's technical capability particularly in the field of seed production, genetic planting material, nursery and planting practices; planning, management and monitoring the forest resource base; training; and rationalizing the policies and regulations constraining the sector. The project also supports five discrete investment activities related to land treatment.

India

Uttar Pradesh Sodic Lands Reclamation (Approved FY93)

\$55 million, IDA
\$80 million, total project cost

Implementing Agency: Government of Uttar Pradesh (GOUP)

Task Manager: Seth

This project develops concomitant models for environmental protection and improved agricultural production through reclamation of sodic lands; strengthens local institutions, enabling the effective management of such programs with strong beneficiary participation and NGO support; and supports the development and dissemination of agricultural and reclamation technology.

India

Renewable Resources Development (Approved FY93)

\$75 million, IBRD
\$115 million, IDA
\$440 million, total project cost

Implementing Agency: Indian Renewable Energy Devlp. Agency Ltd. (IREDA), Tamil Nadu Newsprint and Papers Ltd. (TNPL)

Task Manager: Manzo

This project promotes commercialization of renewable resources technologies by financing private sector investments in alternate energy subprojects, including irrigation-based small hydros, wind farms, and solar photovoltaic systems. It expands bagasse-based paper mills and creates marketing and financing mechanisms for the sale and delivery of alternate energy systems. It includes technical assistance for institutional development and the promotion of renewable energy technologies. The GEF component supports development of wind, solar, and photovoltaic capacity and provides technical assistance.

India

Forestry Research Education and Extension (Approved FY94)

\$47 million, IDA
\$56 million, total project cost

Implementing Agency: The Indian Council for Forestry Research and Education (ICFRE)

Task Manager: Hill

This project supports research on and development of methods for the conservation of biodiversity. Components include development and implementation of programs for ecodevelopment in two protected areas; financing of a range of ecodevelopment activities and concurrent improvements in the planning and management of protected areas; support for research aimed at improving protected area management and the implementation of ecodevelopment; and a program to monitor socioeconomic and ecological changes. In addition, it supports the involvement of local communities in the planning and implementation of ecodevelopment programs.

IBRD/IDA Projects with Primarily Environmental Objectives Active FY96

India

Andhra Pradesh Forestry (Approved FY94)

\$77 million, IDA
\$89 million, total project cost

Implementing Agency: Forest Department
(FD) and Government of Andhra Pradesh
(GOAP)

Task Manager: Keil

This project maintains and improves biodiversity and develops sustainable management systems that foster participation and sharing of benefits by village communities, particularly in forest areas that are home to tribal groups. It supports forest regeneration and rehabilitation; improvement of adaptive research and silviculture management; and joint forest management training in participatory rural appraisal. It has provided institutional support to the nature conservation program through development of an integrated protected areas system; studies; boundary demarcations; fire protection; upgrading of roads; habitat improvement; captive breeding programs; and ecodevelopment in selected parks and sanctuaries.

India

Madhya Pradesh Forestry (Approved FY95)

\$58 million, IDA
\$67 million, total project cost

Implementing Agency: Forest Department
(FD) and Government of Madhya Pradesh
(GOMP)

Task Manager: Hill

This project supports improvements for the Madhya Pradesh forestry sector, including innovative programs for participatory forest management. It involves forest regeneration and improved silvicultural practices; improved implementation, monitoring, and evaluation; a village resource development program based on participatory planning and the integration of forest management and protection with activities to generate alternative incomes to reduce pressures on the forest; forestry research, extension, and technology improvements; and biodiversity conservation through management of twelve protected areas while supporting the development of alternative resources for local communities.

India

Industrial Pollution Prevention (Approved FY95)

\$143 million, IBRD
\$25 million, IDA
\$352.5 million, total project cost

Implementing Agency: Ministry of
Environment

Task Manager: Vergara

This project promotes cost-effective abatement of industrial pollution through components that support institutional strengthening of state pollution control boards and investments by individual firms for pollution abatement with a focus in minimization of waste and cleaner production methods. It renews financing for common effluent treatment plants for treating wastewater and solid materials at industrial sites with a concentration in small sized industries. A technical assistance component supports the development, diffusion, and transfer of technologies with environmental benefits.

India

Coal Environment and Social Mitigation (Approved FY96)

\$65 million, IDA
\$80 million, total project cost

Implementing Agency: Coal India Ltd.

Task Manager: Pollak

The project assists Coal India in making coal production more environmentally and socially sustainable. This includes technical assistance to enhance Coal India's capacity to deal more effectively with the environmental and social issues of coal mining operations; the implementation of Environmental Action Plans, Rehabilitation Action Plans, and Indigenous Peoples Development Plans for 25 proposed mines in India; and a review, and if required, implementation of a program of remedial action of the resettlement and rehabilitation measures taken by Coal India in implementing projects that have received bank Group support in the past.

India

Bombay Sewage Disposal (Approved FY96)

\$167 million, IBRD
\$25 million, IDA
\$280 million, total project cost

Implementing Agency: Municipality Corp of
Bombay

Task Manager: Couzens

This project strengthens the capacity of the Municipality Corp of Bombay (MCGB)'s WSSD in all aspects for the management of the provision of sewerage services; sustaining the financial viability for the provision of water supply and sewerage services in Greater Bombay through direct charges to beneficiaries at appropriate levels; and improving the health and environmental conditions in Greater Bombay.

IBRD/IDA Projects with Primarily Environmental Objectives Active FY96

India

Hydrology (Approved FY96)

\$142 million, IDA
\$178.3 million, total project cost

Implementing Agency: Ministry of Water Resources

Task Manager: Myint

This project improves the institutional and organizational arrangements, technical capabilities and physical facilities available for measurement, validation, collation, analysis, transfer and dissemination of hydrological, hydrometeorological and water quality data. It also administers basic water resource evaluations within the concerned agencies at Central Government level and in the seven participating states.

Nepal

Hill Community Forestry (Approved FY89)

\$31 million, IDA
\$45 million, total project cost

Implementing Agency: Forest Department

Task Manager: Hill

This project helps His Majesty's Government implement components of its Forestry Master Plan and Forestry Sector Policy, by establishing a system to conserve and expand the forest resources which sustain traditional farming systems in the Hills. Forest User Group are formed among villagers to protect, manage, and utilize areas of State-owned forests in their vicinity. FD staff are trained to provide technical and material assistance to enable these groups to properly manage the existing forests and establish and maintain new plantations in degraded areas.

Pakistan

Second Scarp Transition (Approved FY91)

\$20 million, IDA
\$49 million, total project cost

Implementing Agency: Agricultural Development Bank of Pakistan (ADBP)

Task Manager: Qamar

This proposed six-year project implements the government's policy of replacing STWs and PTWs in FGW areas. It comprises two subprojects, one in Punjab and one in Sindh. The Punjab subproject replaces about 1,346 STWs with PTWs in the FGW areas of the remaining part of the SCARP-I area, not covered under the STPP. The Sindh subproject is a pilot effort to test the viability of SCARP transition in the somewhat different socio-economic conditions of Sindh. It replaces about 380 STWs with PTWs in the FGW areas of the Moro and Sakrand units of SCARP North Rohri (SNR) Project.

Pakistan

Environmental Protection and Resource Conservation (Approved FY92)

\$29 million, IDA
\$57 million, total project cost

Implementing Agency: Gov't of Pakistan & Gov'ts of Punjab, Sindh, North-West Frontier Provinces and Azad Jammu and Kashmir

Task Manager: Saddington

This project is the first phase in a long-term program to improve Pakistan's natural resource management. It has two components, institutional strengthening and environment and natural resource rehabilitation. Its objectives are to initiate the strengthening of federal and provincial environmental protection institutions. It strengthens environmental legislation and initiates policies and programs; disseminates information concerning damage to the environment and natural resources to policy makers, government officials, and the public; strengthens professional education; and implements subprojects to rehabilitate, protect, develop and manage agro-ecological resources which have been damaged or threatened.

Pakistan

Fordwah E. Sadiquia Irrigation and Drainage (Approved FY93)

\$54 million, IDA
\$71 million, total project cost

Implementing Agency: Punjab Irrigation and Agricultural Department, and Water and Power Development Authority

Task Manager: Ahmad

This project supports efforts to control waterlogging and salinity through improved water management and increases efficient delivery of canals and watercourses. It also improves water conservation by: recovering and limiting seepage; provides a network of surface drains to evacuate storm water runoff; provides technical assistance to implementing agencies and for staff training; and supports the monitoring and evaluation of the project's impact on groundwater levels and agriculture production.

IBRD/IDA Projects with Primarily Environmental Objectives Active FY96

Pakistan

Northern Resource Management (Approved FY93)

\$29 million, IDA
\$40 million, total project cost

Implementing Agency: Azad Jammu and
Kashmir

Task Manager: Motha

This project provides the basis for the sustainable and economically efficient use of land resources in Azad Jammu and Kashmir by: improving the policy framework; restructuring and strengthening the main institutions that manage and protect land resources in the area; and testing programs in which communities take management and financial responsibility for planning and implementing activities for sustainable resource management.

Pakistan

Balochistan Natural Resource Management (Approved FY94)

\$15 million, IDA
\$18 million, total project cost

Implementing Agency: Government of
Balochistan

Task Manager: Sheikh

This project represents the first phase of long-term support to improve Balochistan's protection of its environment and management of its natural resources. It also strengthens the principal environmental institutions through formulating policy, legislation, and regulations; monitors natural resource management; and provides training, technical assistance, and support staff. It supports site-specific methods of rehabilitation and development of degraded forests, watersheds, rangelands, coastal areas, and natural habitats and the efficient, sustainable use of groundwater, especially by eliminating government subsidies for drilling tubewells.

Pakistan

Punjab Forest Sector Development (Approved FY95)

\$24.9 million, IDA
\$33.8 million, total project cost

Implementing Agency: Punjab Forest
Department

Task Manager: Khouri

This project strengthens the Punjab Forestry Department's capabilities to assist local communities and the private sector in the development and conservation of forest and rangelands through natural, financial, and human resource management. It helps to disseminate technology and information required to promote farmers' involvement in nursery and timber production; develops and strengthens community organizations to manage scrub forests and rangelands jointly with public sector institutions; and implements a pilot component for the reorganization of timber plantations to enhance their environmental value.

Sri Lanka

Forest Sector Development (Approved FY89)

\$20 million, IDA
\$31 million, total project cost

Implementing Agency: Ministry of Lands and
Land Development (Forestry Department)

Task Manager: Khouri

This project assists the Government in improving the performance of the forestry sector in line with the economic, social, and environmental requirements of Sri Lanka by implementing part of a five-year time slice of the Forestry Master Plan. To attain this objective: all plantations and selected natural forests are brought under intensive management; the resource base is expanded by establishing new plantations; forestry education and technical training is intensified; and the institutional base is strengthened. Current forestry programs, especially those formulated and implemented with external financing, have been taken into consideration in designing the project.

Sri Lanka

Colombo Environmental Improvement (Approved FY95)

\$39 million, IDA
\$49 million, total project cost

Implementing Agency: Urban Development
Authority (UDA), Colombo Municipal Council
(CMC), and The National Water Supply and

Task Manager: Zhao

This project supports progress toward a sustainable environment for the economic and social development of the Colombo Metropolitan Area (CMA). The project focuses on solid waste services, controlling surface-and groundwater contamination from wastewater discharge, and building up the capabilities of the government in municipal waste management. The project also assists in promoting private sector participation in environment-related operations. The project finances construction of a sanitary landfill and compost facilities to replace open dumps, and equipment for hospital wastes collection, transport and disposal; wastewater collection systems in two industrial zones; and wastewater pollution abatement measures in the Beria Lake catchment area.

World Bank Group Projects with Full Environmental Assessment (Category A)

Since October 1989, Bank staff have been required to screen all proposed new investment projects with respect to their potential environmental impacts and to classify them accordingly. The classification of each proposed project depends on its type, location, sensitivity, and scale, as well as the nature and magnitude of its potential impacts. Category A projects are those considered likely to have significant environmental impacts that may be sensitive, irreversible, and diverse. Such projects require a full environmental assessment (EA). Category B projects may have impacts that are less significant than category A projects, and few if any of the impacts are irreversible. An EA is not normally required for category C projects, which are unlikely to have adverse impacts.

This table separately lists all category A projects for IBRD/IDA and IFC that were approved in fiscal 1996. For each, the table indicates the estimated total cost and the amount of financing or investment. The table also provides a brief description of each project and the contribution of the EA. Of 150 IBRD/IDA projects approved in FY96, 21 were category A. IFC's FY96 portfolio of 264 projects contained 15 category A projects.

Africa

Ghana

Highway Sector Investment Program

\$100 million, IDA
\$112.3 million, total project cost

The principal components of the program are: maintenance, rehabilitation and reconstruction of the road network; strengthening capacity of several Ghanaian agencies through institutional reforms, technical assistance, training and logistical support; promoting policy reforms in the areas of road financing, axle load control enforcement, road safety and environmental awareness. The EA concluded that no significant adverse effects on the environment are likely to occur since the project mainly involves rehabilitation and maintenance operations on existing trunks of roads and no new construction is intended. Long term benefits will be achieved by increased road safety, a reduction in dust pollution originating from unpaved roads and improved drainage reducing the transmission of water borne diseases. The short term impacts of dust, noise, detours, traffic delays, spoil material and fumes have been identified during appraisal and further integrated in a mitigation plan accepted by Ghanaian authorities and the Bank. The associated cost of implementing the mitigation plan is reflected in the project's budget.

East Asia / Pacific

China

Ertan II Hydroelectric

\$550 million, IBRD
\$2940 million, total project cost

The project involves the construction of a dam on the Yalong river, an underground powerhouse complex, an environmental management program and resettlement of 30,000 people; consulting services for engineering, procurement, management of construction and preparation of future power projects; and studies of power pricing. The main environmental concerns arise from creation of the reservoir which will impact on terrestrial, riverine and riparian ecosystems. The extent of inundation is limited by the topography of the area; the river being deeply entrenched in the landscape. The impacts on the local ecology are negligible since the area inundated is degraded. Changes in water regime will benefit some aquatic species to the detriment of others. As all species of the Yalong river are found elsewhere in the region, the project poses no threats of extinction. The project will incorporate measures to control malaria, and schistosomiasis and protect the quality of life of the local population. Other environmental concerns are considered in the comprehensive Environmental Management Program (EMP) developed from EA's undertaken in 1980 and 1995. The EMP provides for the establishment of a conservation management zone around the reservoir; studies on commercial potential of fisheries; cultural property protection; resettlement action plan; vermin control; schistosomiasis prevention; downstream alarm system; construction worker health inspections; post construction landscaping; reservoir clearing; and wide ranging monitoring activities. The coordination of the EMP is performed by Ertan Hydropower Development Company with the assistance of the international community.

China

Gansu Hexi Corridor

\$60 million, IBRD
\$90 million, IDA
\$260 million, total project cost

Aims to: (a) alleviate poverty by resettling 200,000 farmers from resource poor areas of Gansu province to newly developed irrigated land in the Shule riverbasin of the Hexi corridor; (b) increase agricultural production in Gansu province; and (c) protect and restore degraded environments through afforestation, and soil and water conservation practices. A related component is construction of Changma Dam to provide for irrigation and potable water supply, supported by institutional strengthening through staff training, technical assistance, equipment, vehicles and essential facilities. The EAs acknowledge a number of positive impacts including protection and enhancement of the existing fragile ecosystem in Gansu through afforestation and improved land and water management. Environmental and Resettlement Action Plans were prepared to mitigate the negative impacts such as involuntary resettlement of 131 families affected by the 12 km² Changma Reservoir or increased salinity in the downstream Shuangta reservoir, and ensure implementation of soil and water conservation measures. For example, extensive monitoring in the Shule riverbasin will assess the effectiveness of land reclamation measures, including desalinization of areas upstream of the Shuangta Reservoirs, and the effect on salinity levels in the reservoir.

Category A Projects, IBRD/IDA: Approved FY96

China

Second Henan Provincial Highway

\$210 million, IBRD
\$605.6 million, total project cost

The project supports ongoing development of road infrastructure to relieve congestion, facilitate mobility and increase the efficiency of road transport in the interest of stimulating economic activity; assists in the implementation of policies to alleviate poverty in the province; promotes development of institutional capabilities in planning, design, operations and maintenance of the highway network; and aims to increase road safety. The components of the project include the construction of a 136 km, four-lane, access-controlled highway; 6 km, two-lane expressway; rehabilitation of 17 km of linking roads; and the improvement of 1700 km of rural roads. Major environmental impacts during construction and operation include noise, air pollution, alteration of hydrological regimes, soil erosion, impacts on local ecology (no rare or endangered species affected) and cultural heritage. An EA was conducted by the Henan Provincial Environmental Protection Institute and was supplemented by an Environmental Action Plan (EAP). The EAP addressed ecological, geological, social, archeological and aesthetic concerns during the design, construction and operation phases of each of the sub-projects. The criteria underlining the EAP are based on national standards and the Bank's provisions.

China

Yunnan Environment

\$125 million, IBRD
\$25 million, IDA
\$308 million, total project cost

The principal objective of the project is to provide a framework for environmentally sustainable economic and social development of Yunnan Province, while developing the basis for industrial growth. Specific objectives include: institutional strengthening for pollution control, and management of municipal water, wastewater, solid waste and nightsoil; improvement of lake water quality to enable abstraction for potable, industrial or agricultural uses; investment in pollution control; and municipal-financing of urban environmental infrastructure investments. On balance, the project will have a positive environmental impact, especially on water quality. Removal of phosphorus from wastewater discharges to Dianchi Lake will arrest eutrophication and permit its sustained safe use for water supply, thereby avoiding costly import of water from distant catchments. The potential impacts identified in the EA mainly relate to uncontrolled releases of methane and leachate from three landfills to be financed by the project. Mitigation measures include provision of leachate and landfill gas collection systems, and gas flaring for safety reasons.

China

Henan (Quinbei) Thermal Power

\$440 million, IBRD
\$1161 million, total project cost

The project seeks to (a) reduce acute power shortages and (b) foster more efficient development of the power system of Henan Province through: construction of coal-fired thermal power plants and transmission lines; promotion of electricity; technical assistance for capacity-building in power system management and operation and implementation of power sector reforms. Potentially significant issues identified in the EAs for the new thermal power plants included air pollution (dust, sulfur dioxide), water pollution (primarily groundwater at the ash disposal site), coal storage and handling, ash disposal, worker health and safety, transmission line issues (noise and electro-magnetic radiation effects on people and birds), and the impacts of construction. The selected power plant and transmission line tower sites are uninhabited and do not significantly affect agricultural land. Mitigation measures incorporated into the project design include: sprinklers to suppress coal dust; collection and treatment of runoff prior to discharge; ash handling and disposal systems which minimize traffic impacts on local roads; siting transmission lines as far as possible from population centers; and inclusion of international standards of worker safety in all bidding documents of project equipment. Modern pollution control technologies (with provision for future upgrading) will be incorporated into the power plant design.

Category A Projects, IBRD/IDA: Approved FY96

China

Shanghai-Zhejiang Highway

\$260 million, IBRD
\$788 million, total project cost

Aims to (a) increase highway capacity in the Shanghai-Hangzhou corridor to relieve congestion and promote economic development through construction of a new 130 km expressway; (b) improve road safety in northern Zhejiang, through upgrading existing route sections and institutional strengthening; and (c) develop highway sector institutional capability in Shanghai and Zhejiang. Major potential impacts addressed in the EAs for sections of the new expressway included social disruption, noise, air and water pollution, soil erosion and effects on irrigation systems through shifts in hydrological regime. Environmental Action Plans for the expressway specified the measures and organizational and monitoring arrangements to mitigate potential adverse impacts during the construction and operational phases. These primarily relate to control of construction traffic, operation of quarries, and waste disposal. Ecologically sensitive areas will not be affected. All resettlement activities affecting some 55,000 people will be carried out according to the project Resettlement Action Plans. Adequate provision has been made for ensuring compliance with the environmental protection measures incorporated within the engineering design and technical specifications for the expressway during both construction and operation.

China

Power Development

\$180 million, IDA
\$242 million, total project cost

Aims to help satisfy rapidly increasing electricity demand in south Viet Nam through: (a) construction of the Phu My 2 Combined Cycle (CC) power plant; (b) increasing high voltage (HV) transformation capacity at existing sub-stations; (c) facilitating private power provision; (d) strengthening institutional capacity within Electricity of Viet Nam (EVN); and (e) developing a strategy for rural electrification. The project covers only the first phase of the Phu My 2 CC plant (2 X 150 MW gas turbines which will be converted to CC). However, the EA addressed issues relating to planned expansion of the plant, and construction of a 600 MW conventional gas-fired power plant at the same site. Environmental concerns included effects on air quality, impacts of cooling water abstractions from and discharges to an estuarine environment, impacts on mangroves and effects on local communities. The EA concluded that with proper design and mitigation measures, predicted impacts would be within acceptable limits. For example, although the gas turbines will initially burn distillate fuel oil and emit high levels of NOx before conversion to CC (once natural gas becomes available), ambient NOx will remain acceptable. EVN will establish an environmental unit and an environmental coordinator as part of the management structure of the power station. A Resettlement Action Plan was prepared for the 55 families affected by the project.

China

Second Shaanxi Provincial Highway

\$210 million, IBRD
\$557 million, total project cost

Aims to continue support for development of road infrastructure to relieve congestion, and to enhance access in rural areas and to tourist sites. The project includes: (a) construction of 5 high-grade highways (from 6 - 73 km in length) and interchanges; (b) upgrading a 32 km highway; (c) improvement and construction of 4,100 km of rural roads to help alleviate poverty; and (d) institutional strengthening and training of the Shaanxi Provincial Transport Department (SPTD). EAs and Environmental Action Plans (EAPs) have been completed for the high-grade highways and link roads. Major anticipated impacts of these highways include resettlement (affecting 17,730 people), noise and air pollution (during construction and operation phases), alteration of hydrological regimes, soil erosion and local hydrology impacts during construction, impacts on cultural relics, and transportation of construction materials. Measures to mitigate impacts included preparation of resettlement action plans, careful selection of alignment, overpasses/underpasses to minimize social disruption, reconstruction of irrigation channels, water sprinkling to prevent dust during construction, construction of noise barriers and forest belts, and installation of double-glazed windows. Ecologically sensitive areas will not be affected. All rural roads involving new construction or widening/land acquisition will require an EA and EAP, otherwise an EAP will be adequate. Satisfactory EAs and EAPs for the first-years package of rural roads have been submitted.

Category A Projects, IBRD/IDA: Approved FY96

China

Hubei Urban Environmental Protection

\$125 million, IBRD
\$25 million, IDA
\$370 million, total project cost

This project finances investment in wastewater management, municipal solid waste management, and nightsoil handling and disposal facilities; helps to abate air pollution from cement, chemical, steel and pharmaceutical industries; and improves planning and financing of urban environmental services in the cities of Wuhan, Huangshi, Xiangfa, and Yichang. Although the project would have an overall positive environmental impact, it has been assigned a Category A rating (primarily due to the four proposed sanitary landfills). EAs have been prepared for more than 20 sub-projects. Wastewater collection and treatment projects have the objectives of improving public health and the quality of surface waters, some of which will serve as potable water sources. Treatment plants will be sited to minimize impacts on residential areas, and receiving waters. The solid waste management projects encompass construction of 4 landfills and various waste transfer stations. Measures will be included to minimize impacts of odors, traffic, leachate and noise. A Resettlement Action Plan has been prepared for temporary resettlement (137 families) and permanent resettlement of 39 families.

China

Second Shanghai Sewerage

\$250 million, IBRD
\$633.3 million, total project cost

This project follows the first phase of Shanghai's development program to improve environmental conditions and management. Specific project objectives are to: (a) enhance wastewater and stormwater management through expanding the sewage collection network and constructing a new treatment plant and marine outfall; (b) reduce urban pollution while facilitating pollution control; (c) improve wastewater utility financial and operational management; (d) and strengthen sector institutions through training, feasibility studies, and future investment project preparation. The EA concluded that the project would have an overall positive environmental impact on water quality in the Huangpu and its tributaries, and the Changjiang estuary. No sites of ecological value or known sites of cultural heritage interest will be affected by the project. However, 4,924 people and 173 enterprises will be affected by land acquisition, and there will be some disruption during construction. Working practices will be controlled to minimize construction impacts, and a Resettlement Action Plan has been prepared for people affected by the project.

Indonesia

Kerinci Seblat Integrated Conservation and Dev'lp

\$19.1 million, IBRD
\$46 million, total project cost

Aims to secure the biodiversity of Kerinci-Seblat National Park (KSNP) and its boundary by (a) integrating park management and conservation with local and regional economic development, and (b) promoting sustainable management and maintenance of permanent forest cover in adjacent areas. A Regional EA (REA) identified measures to protect the Park from logging, mining, encroachers, poachers and road development, including boundary rationalization, and restriction of logging and mining concessions to areas outside biodiversity zones. Park management and protection will be strengthened, based on collaborative linkages with buffer-zone communities, and local NGOs and government agencies. The project will stabilize land use outside the park by promoting local-community and alternate livelihood activities consistent with park conservation objectives, and by improving overall local land use to relieve pressure on the park. Biodiversity assessments in lowland forest concessions surrounding the park will contribute to better management of a permanent buffer zone in these areas. The project will strengthen regulatory guidelines for inter-provincial, regional planning; improve conservation awareness locally and in the government; provide training and extension services to villagers, park staff and local government staff; and monitor and evaluate biodiversity conservation, human impacts and sustainable development in and around the park.

Category A Projects, IBRD/IDA: Approved FY96

Indonesia

Strategic Urban Roads Infrastructure

\$86.9 million, IBRD
\$167.6 million, total project cost

The project encompasses road construction, urban management and quality of life improvements, institutional and human resource development, urban road program development, and policy articulation and implementation components. These components will assist the government in the decentralization process, strengthen technical and institutional capacity in urban transport policy and management as well as reduce traffic bottlenecks in urban areas of the North Java corridor. The road construction component is expected to have significant environmental impacts particularly on air pollution, noise, road safety and community severance. To address these impacts, a screening process was finalized by the Environmental Impact Management Agency and will provide a systematic approach to impact assessment, monitoring and management based on the type of sub-projects, their scale and location in relation to a range of sensitive environmental areas. The implementation of these procedures rests with central and provincial government agencies. Projects that may result in significant environmental impacts will require a detailed EA which is to be submitted to the Bank as part of a sub-project approval process.

Philippines

Manila Second Sewerage

\$57 million, IBRD
\$76 million, total project cost

Aims to improve the quality of sanitation services in Manila by enabling the Metropolitan Waterworks and Sewerage System (MWSS) to: (a) expand its septage management program and improve sewerage services in Metro Manila (MM), and (b) reduce pollution in Manila's waterways and Manila Bay, thereby reducing health hazards from exposure to septage. Phase I involves deep sea disposal of septage (up to 2003) prior to construction of land-based septage treatment plants in Phase II, when ocean dumping will be terminated. While the project is aimed at improving Manila's urban environment, possible negative effects identified in the EA included dust, noise, odor, and traffic (in the vicinity of treatment sites or barge loading facilities) and marine pollution. These impacts will be mitigated by MWSS through design measures (including provision of enclosed, ventilated buildings with deodorizing equipment at transfer stations; limiting working hours, vehicle speed and installing traffic signals; and disposal of dewatered sludge to sanitary landfills) supported by effective implementation of an environmental management plan. These measures are included in detailed design and contract documents. An ocean modeling exercise is underway to assess the anticipated impacts on the marine environment, and to refine acceptable conditions for ocean dumping.

Thailand

Fifth Highway Sector

\$150 million, IBRD
\$450 million, total project cost

The project aims to: (a) establish a privately operated vehicle inspection system to encourage actions to reduce vehicular emissions, noise and accidents, notably in urban areas like Bangkok; (b) improve the inter-urban road network through widening and rehabilitation works to increase road capacity and improve safety standards; and (c) provide a systematic basis for establishing EA criteria at the design stage, and environmental management standards during and after new road construction through a sectoral EA (SEA). The vehicle inspection system supports the ongoing Royal Thai Government's Action Plan to Reduce Vehicle Emissions and Noise Pollution, and should have a positive impact on the environment. A sectoral EA (SEA) commissioned by the Department of Highways (DOH) established an EA process which will be applied to all new sub-projects to be financed under the project. All ongoing projects, which mainly involve rehabilitation and widening of roads on existing alignments or within rights-of-way without resettlement, have been screened in accordance with Bank procedures.

Eastern Europe / Central Asia

Albania

Forestry

\$8 million, IDA
\$21.6 million, total project cost

The project aims to promote the institutional development of the forest-pasture administration in the areas of training, education, research and project management; seeks to improve management of state forests; rehabilitate forest roads; ameliorate management of both communal forests and pastures; and finally to improve management of protected areas. The harvesting operations through the existing road network are the thrust of the environmental concerns; namely form extractive and road rehabilitation activities. The principal remedial actions to minimize environmental impacts include the implementation of an Action Plan to reduce illegal forest harvesting which would be monitored by an independent party; developing the leadership capacity of the existing "Project Environmental Management Unity" in the areas of EIA guidelines pertaining to forestry, best management practices in road rehabilitation, individual forest management plans and institutional policy reforms. In addition, according to the recommendations of the fauna and floral inventory and monitoring activities, forest management plans will be adapted for sustainable use purposes.

South Asia

India

Orissa Water Resources Consolidation

\$290.9 million, IDA
\$631.1 million, total project cost

The project aims to improve the planning, development and management of the state's water resources and increase agricultural productivity. Components of the project include upgrading viable infrastructure works, water planning, environmental management, resettlement and rehabilitation, indigenous people development, water sector research, agricultural intensification and strengthening the Department of Water Resources (DOWR) capabilities in management. A Sectoral Environmental Assessment was conducted by DOWR staff and an independent Australian firm. The impacts of waterlogging, groundwater depletion and disease risks identified have already been considered in the overall investment program. In addition to these specific measures, is a comprehensive set of actions to improve DOWR's environmental capacity to monitor, plan, develop and manage water resources from an environmental and social perspective. These actions are summarized in the Environmental Action Plan which is entirely funded by the project.

India

Private Infrastructure Finance

\$200 million, IBRD
\$5 million, IDA
\$1.6 million, total project cost

The project will assist Infrastructure Leasing and Financial Services Limited (ILFS) in financing development initiatives such as bridges, bypasses, port facilities, water supply and effluent treatment as well as integrated area development projects. The series of sub projects will be implemented on a build-operate and transfer basis and will have management, investment, training and technical assistance components. Most sub-projects are at a preliminary developmental stage and will be ready for implementation in the next three years, however, a few will be implemented in the next 18 months. To address the potential environmental impacts, ILFS has prepared an Environmental and Social Report (ESR) which provides the necessary framework to identify, assess and manage environmental concerns at the organizational and project levels. The ESR is compatible with the Bank's EA process.

Category A Projects, IBRD/IDA: Approved FY96

India

Bombay Sewage Disposal

\$167 million, IBRD
\$25 million, IDA
\$259.6 million, total project cost

The project aims to strengthen the capacity of the Municipal Corporation of the Greater Bombay's (MCGB) Water Supply and Sewerage Department (WSSD) to manage provision of sewerage services, sustain the financial viability of these services through direct charges to beneficiaries at appropriate levels, and improve health and environmental conditions in Greater Bombay. The specific components of the project are; construction of two 3 km tunnels, a pumping station, two aerated sewage treatment lagoons, and the rehabilitation of existing infrastructures, (one tunnel, five pumping stations and conveyance systems). It also involves technical and social services to assist project implementation, upgrade MCGB's operational and maintenance capabilities, and design a program to enhance health and environmental conditions. Environmental and social impacts generated by the construction and operation activities (dust, noise, vibration disturbance, air pollution, traffic, loss of 40 ha of mangroves for site clearance) have been addressed by the National Environmental Engineering Research Institute's EA process. This included a variety of technical studies, public consultation and the development of environmental mitigation and monitoring plans. The project is expected to result in significant improvements in health, quality of life and coastal water quality.

Pakistan

Ghazi-Barotha Hydropower

\$350 million, IBRD
\$2250 million, total project cost

The physical components of the project includes a barrage on the Indus river, a power channel designed to convey water from the barrage to the power complex, a power house, and power transmission facilities operated by the Water and Power Development Authority (WAPDA). This major infrastructure scheme is being supplemented by a technical assistance component, an environmental and social program respectively supported by an International Independent Panel of Experts and an Environment and Resettlement Review Panel. The potential environmental impacts include changes in land use in areas acquired for the project; reduction in the flow of a small proportion of the main channel of the Indus river; impacts on cultural heritage (religious and archeological sites); and safety issues related to people or livestock trespassing the power channel or transmission lines areas. Mitigation measures are specified in a comprehensive Environmental and Resettlement Management Plan which include: establishing a Public Information Center at the project site; obtaining assistance of a project NGO and independent consultants to monitor resettlement and implementation of environmental mitigation measures; implementation of an integrated Regional Development Plan to support locally based economic activity; and continued support from the independent Environment and Resettlement Review Panel.

Sri Lanka

Private Sector Infrastructure Development

\$70 million, IDA
\$232 million, total project cost

The objective of the project is to develop a modern and efficient infrastructure system by promoting private sector involvement through an enhanced public sector management capacity and the establishment of a facility for the placement of long-term debt. Four major areas of infrastructure development have been targeted: provision of power, toll roads, ports and urban services (water, waste water and solid waste). Since no specific subprojects have been identified, EAs are not yet available, however, it is expected that most large scale infrastructure schemes will generate environmental concerns. These concerns will be addressed according to the framework provided in the Private Sector Infrastructure Development Company's operational manuals. Subprojects will be eligible for funding after being appraised. These appraisals must meet IDA's requirements which are derived from the Bank's EA process.

Category A Projects, IFC: Approved FY96

Africa

Uganda

Kasese Cobalt Company Limited

\$19.6 million, IFC
\$5 million, syndications
\$110 million, total project cost

Increase cobalt production by extracting 1000 tons from stockpiled concentrates at an old copper mine. Environmental issues include: water supply and management for process water and hydroelectric power, tailings disposal following reprocessing, dust control, noise impacts from reprocessing and quarry operations, site reclamation, resettlement, and public consultation and disclosure. Reprocessed tailings will be placed in new engineered tailings dams, and land reclamation will be phased throughout the project's lifetime to reduce erosion and dust generation. Process water will be recycled, and any excess will be neutralized prior to discharge. Land users will be compensated for the hydroelectric plant transfer canal right-of-way. The sponsor will provide water taps for local use. Noise effects on residents near the project's limestone quarry will be mitigated by using conventional excavating techniques, and, when blasting is required, limiting blasting to once per week and using low burden explosives. Approximately 200 squatters living in huts on the polluted sediment trails were relocated in 1992 and compensated by the municipality (funds for compensation were provided by the sponsor).

Zimbabwe

Zambezi Safari Lodges (Private) Limited (AEF)

\$1.3 million, IFC
\$4.5 million, total project cost

Construct and manage two luxury lodges 40 km from Victoria Falls on the Zambezi River. Key environmental issues associated with this project include site selection, impacts on sensitive ecosystems and wildlife, water supply, waste disposal, sewage disposal, power supply, impacts associated with secondary development, and fire protection. The lodges will be constructed on the site of a former hunting concession. Replacement of hunting with photographic safaris is expected to encourage a return of wild game, including endangered species, to the area. Lodges will be sited and boardwalks constructed to avoid impacts to fragile soils and preserve natural drainage patterns. Landscaping will make exclusive use of plant species endemic to the region. Health services and water supply will be available to guests and staff. Solid and domestic wastes will be disposed of either on site or through municipal facilities in Victoria Falls. Fire prevention plans include development of fire breaks to protect the lodges and prevent the potential spread of fires, as well as installation of alarm systems and extinguishers. The project complies with all requirements of the Department of National Parks and Wildlife Management.

East Asia / Pacific

China

Caltex Ocean Gas and Energy Limited

\$31.3 million, IFC
\$66 million, syndications
\$146 million, total project cost

Build and operate a cavern storage and terminal facility with 200,000 cubic meter capacity for liquefied petroleum gas. Environment, health and safety issues include site locations, previous and existing land use, impact on the marine and terrestrial environment, wild life and coastal resources, fire and explosion prevention, emergency response, and public consultation and disclosure. The project is located within the Shantou Economic Development Zone. The site, on the coast in an area characterized by granite formations with very sparse vegetation, will see low-density use and impact on the terrestrial environment will be limited. The sea bed around the terminal and jetty does not have unusual ecological value. The terminal area is not used by local villagers or fishermen and no resettlement will be necessary. The terminal will be designed to withstand potential seismic activities in the area. Further, a protective granite hill is located between the facility and residential areas. Public consultation on the general development of the area has been carried out by the local authorities.

Category A Projects, IFC: Approved FY96

Maldives

***Villa Shipping and Trading Company
Private Ltd.***

\$6 million, IFC
\$26 million, total project cost

Develop and operate a 300-room island resort hotel at Sun Island. Environmental, health and safety issues associated with this project include site selection, protection of coastal resources, liquid effluent, solid wastes, land use, fire protection and life safety. The sponsor has prepared a detailed Environmental Impact Assessment (EIA). The Sun Island resort will be one of the first resorts to operate an advanced secondary treatment facility. Solid waste will be disposed of by composting and a high temperature incinerator. Provisions for fire and safety will be in accordance with World Bank guidelines. Villa Shipping & Trading Company's diving school rigorously follows a reef diving code which includes strict policies to prevent damage to coral reefs.

Nepal

Bhote Koshi Power Company Private Ltd.

\$24 million, IFC
\$27 million, syndications
\$98.2 million, total project cost

Build, operate and transfer a 36-megawatt run-of-river hydroelectric plant 110 kilometers from Katmandu. The sponsors have prepared a detailed environmental impact assessment and have undertaken extensive public consultation. As the project is a small run-of-the-river project and the topographic nature of the project site comprises steep rocky cliffs and limited river terraces, the social and ecological impacts are limited. The amount of land to be required is small. Fair compensation will be provided to affected families, and alternative plots of land provided if preferred. With respect to downstream impacts, fishing is not popular in the project area and the number and diversity of fish is low. Sufficient flow will be maintained during the spawning months and snow trout fingerlings will be released annually after construction, to ensure a healthy population. The environmental impacts and effectiveness of mitigation measures will be regularly monitored.

Thailand

***Thai Petrochemical Industry Public
Company Ltd.***

\$100 million, IFC
\$400 million, syndications
\$2028 million, total project cost

Expand and integrate polymer production facilities. Environmental and occupational health and safety issues associated with this project include land use, air emissions, liquid effluents, solid wastes, hazardous material storage and disposal, spill prevention, fire and explosion safety, emergency response and employee exposure to chemical substances. The company's existing facilities have already implemented the necessary mitigation measures to comply with World Bank guidelines. The company will ensure that no virgin coastal lands are converted for industrial use. To comply with World Bank guidelines, fuel use will be limited to cleaner fuel sources. The existing wastewater treatment plant will be expanded to handle the additional effluent from the plant expansion. The company has invited public participation in project planning, and has committed to community development activities in the area, including provision of electric power to selected low-income neighborhoods and establishment of a technical institute with a projected enrollment of 900 students.

Category A Projects, IFC: Approved FY96

Vietnam

Morning Star Cement

\$30 million, IFC
\$66.6 million, syndications
\$309 million, total project cost

Develop and operate a cement plant and mixing and distribution terminal with a capacity of 1.8 million tons a year. Dredging operations in a sparsely populated coastal area are required to make the plant's captive port operational. Channel design and dredging procedures will minimize the impact of the initial dredging required. During operation the port will have a negligible impact on the environment. Clearance of the terminal site required relocation of 35 families. Relocation and associated compensation was done to the satisfaction of the families involved, and with the full knowledge and cooperation of the local authorities. Equipment and procedures will allow the plant as well as the terminal to meet World Bank guidelines for air and liquid emissions, spill prevention, and employee exposure to noise and dust.

Eastern Europe / Central Asia

Kazakhstan

Kazgermunai

\$65.7 million, IFC
\$266.9 million, total project cost

Develop the reservoir of an oil field in Akshabulak to produce 23,000 barrels a day peak production. Environmental issues associated with this project include site contamination as a result of previous activities, the management of produced gas and water, impacts on groundwater resources, erosion and dust, as well as oil spills. A detailed EIA has been prepared for the project which indicates that site contamination as a result of previous activities is limited and localized and the aforementioned associated impacts can be mitigated to acceptable levels by employing industry best practices. The EIA process included consultations with local populations and government authorities.

Uzbekistan

Amantaytau Goldfields A.O.

\$58.8 million, IFC
\$85 million, syndications
\$355 million, total project cost

Develop gold deposits in the central desert to produce an estimated 5 million ounces over the mine's life. The sponsor has prepared a full and detailed Environmental Impact Assessment (EIA), considering key environmental and occupational health and safety issues such as: process water supply and effects on regional water resources; location of tailings impoundment with respect to surface watercourses; acid generating potential of waste rock dumps and low grade stockpiles; and mine decommissioning and reclamation. The project is located in a remote area of the Kyzylkum desert. Consultation and disclosure is occurring with local communities at Zarafshan and Daugystau in accordance with the local EIA process. The sponsors have committed to an environmental management and monitoring plan for the project and will operate the project in compliance with World Bank policies on environment, health and safety.

Category A Projects, IFC: Approved FY96

Latin America / Caribbean

Argentina

Grupo Concesionario del Oeste, S.A.

\$35 million, IFC
\$130 million, syndications
\$272 million, total project cost

Build, upgrade and maintain a toll road to connect central Buenos Aires and western suburbs. Environmental issues associated with the project include right of way (including resettlement), air quality, noise, and water quality. The sponsor and the Government of Argentina developed and implemented a resettlement plan, which included compensation. Construction of the toll road will provide significant improvements to the flow of traffic through the corridor, which will result in a substantial decrease of air emissions, especially carbon monoxide, and to a lesser extent nitrogen oxides, lead, and particulate matter. The concession requires the sponsor to operate an air monitoring program which will take place before, during, and after the construction of the toll road. Noise mitigation has been included in the design of the roadway. Other neighborhoods previously subjected to high levels of traffic noise will experience an improvement in conditions as traffic is diverted to the new toll road. Safety barriers will also help to reduce noise impacts. The highway design and construction plan incorporated measures to reduce disturbance to drainage patterns and erosion into surface waters.

Bolivia

Compania Minera del Sur, S.A.

\$8.3 million, IFC
\$5 million, syndications
\$22 million, total project cost

Develop a gold mine to produce 33,000 ounces of gold a year. Environmental issues associated with this project include impacts on surface and ground water, land disturbance, and social impacts. The sponsor has prepared an environmental impact assessment (EIA) for the project and has engaged in the necessary public consultations. This EIA demonstrates that the open pit, process facilities, waste rock piles and tailings dam will be operated so that there will be no impacts to surface and ground water. Land disturbance will be minimal and the project includes a comprehensive land restoration program upon closure. The EIA indicates that the project's social impacts are positive including the provision of electricity to the adjacent community of San Roman.

Middle East / North Africa

Egypt

Apache Oil Egypt Inc. & Phoenix Resources Co.

\$47.5 million, IFC
\$45 million, syndications
\$154 million, total project cost

These two projects develop and continue to explore the Qarun oil and gas concession in the western desert. Key environmental issues include: alignment of pipelines, the management of produced water and gas, oil spills, impact on ground waters and dust. The project sponsor prepared an EIA which addresses these environmental issues. It concludes that potential environmental impacts can be mitigated. The project pipeline, for example, has been routed so as to avoid antiquities.

Category A Projects, IFC: Approved FY96

South Asia

Pakistan

Uch Power Limited

\$56 million, IFC
\$75 million, syndications
\$630 million, total project cost

Build, own and operate a 586 megawatt gas-fired, combined cycle power plant. Environmental issues include siting considerations, air quality impacts, liquid effluents, water supply, socio-economic impacts and worker safety. The site was selected for its proximity to the Uch gas field and water supply (the Pat Feeder Canal), the potential benefits to Balochistan residents; and its accessibility via a major highway and railway line. Air emissions will meet Government of Pakistan (GOP) and World Bank guidelines for SO₂, NO_x, and particulates. The zero discharge design, developed in consultation with IBRD, will not adversely impact surface water or groundwater in the project area. The site is unoccupied, although used occasionally by Jamali herdsmen for grazing. Consistent with the World Bank policy, GOP Land Acquisition Act of 1894 and the 1983 GOP Land Acquisition Rules, the sponsors are in the process of transferring title to the project. Local people will be trained and hired to the extent possible. An occupational health and safety program, which includes medical monitoring, will minimize exposure to noise and chemicals. Fire protection plans and equipment meet international standards. Extensive consultations with effected parties, including the GOP, Government of Balochistan (GOB), district and municipal officials as well as officials and representatives of the Jamali Tribe, were conducted during preparation of the EIA.

Pakistan

AES Pak Gen (Private) Company

\$29.5 million, IFC
\$50 million, syndications
\$349 million, total project cost

Build, own, and operate a power plant with a capacity of 337 megawatts adjacent to the AES Lal Pir power project near Multan. The environmental issues associated with this project include air emissions, water supply impacts, and establishing adequate fuel decanting procedures and containment measures. The PAK Gen project will have a scrubber to reduce SO_x emissions, water supply impacts will be contained through proper treatment of water and the use of well water, and, the sponsor has already begun discussions with the fuel supplier towards implementing best practices measures at the fuel decanting facility. The project sponsor has prepared an EIA for the project and is continuing with the public consultation program initiated with the Lal Pir project.

Global Environment Facility Investment Work Program

The following table presents the World Bank's GEF-supported investment operations approved by the GEF between July 1, 1991 and June 30, 1996 (FY92-96), and which were under implementation during FY96 (July 1, 1995 through to June 30, 1996). The Bank, as a GEF implementing agency, supports operations addressing four environmental issues: management of biological diversity, climate change, protection of international waters, and ozone layer depletion. In addition to information on the GEF-supported projects themselves, the table gives the titles in italics of associated IBRD/IDA (or other) loans and credits when a GEF project forms part of a larger World Bank-assisted initiative. The World Bank-GEF portfolio includes projects implemented not only by IBRD and IDA, but in some cases by the International Finance Corporation (IFC) and other multilateral development banks like the Inter-American Development Bank (IDB). The difference between the GEF grant amount and total project cost is financed by domestic public and private, multilateral, bilateral and NGO sources.

For more detail on the status and associated partnerships for these projects, please refer to the GEF's Quarterly Operational Report, available at the GEF Secretariat (202) 473-1128, or look for the information on the Environment Department's Web page at <http://www-esd.worldbank.org/html/esd/env/envmain.htm>.

Global Environment Facility Investment Work Program

Country/Project/ Associated Bank Project	Project Description	Implementing Agency/ Task Manager/ Project Status	Bank Approval/ GET Grant / Total Project Cost
AFRICA			
<i>Biodiversity</i>			
Regional (Burkina Faso, Cote d'Ivoire) West Africa Pilot Community-Based Natural Resource and Wildlife Management	Community-based wildlands and wildlife rehabilitation, utilization and conservation programs based on the "gestion de terroirs" approach will be developed and implemented at three sites totalling 4,800 square kms in the Comoe ecosystem in southwestern Burkina Faso and northern Cote d'Ivoire, an area recognized as one of the most important remaining natural savannah ecosystems in the region. The project comprises: (a) land use planning; (b) community land management; (c) capacity building and training; (d) habitat improvement and animal herd reconstruction; and (e) sustainable subsistence and commercial utilization of wildlife.	World Bank Pavy Active	09/95 7.0 13.2
Cameroon Biodiversity Conservation and Management	Participatory biodiversity conservation plans will be developed and implemented for eight sites in the species-rich lowland forests of south-east Cameroon and parts of the northern savannah ecosystem. The capacity of natural resource management institutions will be strengthened through financing zoological and biological inventories, by providing equipment, training and technical assistance, and through 'twinning' between the National Herbarium and the Kew Botanical Gardens and the National Herbarium of France.	World Bank Heimo Active	03/95 6.0 12.4
Congo Wildlands Protection and Management	Development and implementation of management programs for five tropical forest ecosystems in the Congo, representative of the country's great ecological diversity and wealth. To achieve this objective, the project funds biodiversity inventories, the preparation of natural resource management plans for each site, training of supervisory staff and guards, and studies of the impact of the indigenous people on the environment and of how negative impacts can be mitigated.	World Bank Chabeuf Active	12/92 10.0 16.8
Ghana Coastal Wetlands Management <i>Environmental Resource Management Project</i>	Design and implementation of a Coastal Zone Management Plan to protect five environmentally-sensitive and threatened coastal Ramsar sites of global importance for migratory birds. The project includes: (a) monitoring of ecological conditions at the sites; (b) preparation of management programs and the training of site managers and wardens; and (c) relocation of a sewage plant outlet that would have discharged into Sakumo Lagoon.	World Bank Mensah Active	08/92 7.2 8.3
Malawi Lake Malawi/Nyasa Biodiversity Conservation	Lake Malawi, Africa's third largest lake, is a unique freshwater ecosystem, home to over 500 endemic species of fish. The project will conduct faunal surveys, identify biodiversity hotspots, prepare a conservation and management plan for the lake, recommend revisions to national environmental legislation, and fund environmental training and education activities. Parallel Canadian project (C\$4.2m) will finance capacity-building for research through twinning with a Canadian institution, limnology and water quality monitoring, laboratory equipment and public education.	World Bank Donovan Active	12/94 5.0 5.4
Mauritius Biodiversity Restoration	This project will continue efforts to restore degraded habitat on Rodrigues, Ile aux Aigrettes and Round Island. It will propagate and reintroduce critically endangered flora and fauna on these three islands, and strengthen local technical and administrative skills for conservation and ecosystem restoration.	World Bank Post Active	11/95 1.2 1.6

Global Environment Facility Investment Work Program

Country/Project/ Associated Bank Project	Project Description	Implementing Agency/ Task Manager/ Project Status	Bank Approval/ GET Grant / Total Project Cost
Seychelles Biodiversity Conservation & Marine Pollution Abatement <i>Environment and Transport Project</i>	Biodiversity conservation component comprises: (a) the restoration and preservation of the ecosystem of Aldabra Atoll by strengthening conservation management and scientific research and control of feral goats; and (b) a protection program for the Green and Hawksbill Turtles. Marine pollution component covers the analysis of the steps needed to comply with MARPOL standards for ship waste treatment and actions required to control pollution from commercial shipping, fishing and leisure craft.	World Bank Lundin/Teymouriam <i>Active</i>	11/92 1.8 2.0
Uganda Bwindi Impenetrable National Park & Mgahinga Gorilla National Park Conservation	The project will establish a trust fund, the income from which will provide a sustainable source of funds for the management of the Bwindi Impenetrable Forest and Mgahinga Gorilla National Parks and the conservation of their biodiversity. A Trust Management Board, representative of local communities, NGOs and the government will allocate the fund's net income to selected park management, research and community development projects.	World Bank Kiss <i>Active</i>	01/95 4.0 4.9
<u>Climate Change</u>			
Mali Household Energy <i>Second Power Project</i>	The project addresses both the demand for and supply of household energy in a country where people depend heavily on environmentally-damaging woodfuels. Consumption of these fuels will be reduced by promoting the use of more efficient stoves and through substituting woodfuels with kerosene and bottled gas through technical assistance and credit to manufacturers and marketers. In parallel, forest planning and management will be strengthened through training and technical assistance.	World Bank Sefta <i>Active</i>	06/95 2.5 11.1
Mauritius Sugar Bio-Energy Technology <i>Sugar Energy Development Project</i>	Development and testing of technologies for gathering, storing and using sugar cane tops, leaves and residues as fuel to expand power generation by existing sugar mills. Assessing options for reducing the cost of bagasse transport and thereby also expanding its use as a generating fuel. Providing technical assistance to a Bagasse Energy Development Program coordinated by the Mauritius Sugar Authority which will develop a program to fully tap the long-term potential of power generation from sugar cane waste.	World Bank Trapman <i>Active</i>	02/92 3.3 55.1
<u>International Waters</u>			
Regional (Kenya, Tanzania, Uganda) Lake Victoria Environmental Management <i>Lake Victoria Environmental</i>	The project, including associated IDA financing, will address the major threats facing the Lake Victoria ecosystem, including overfishing, eutrophication and algae levels, other forms of pollution, and introduction of invasive exotic species like the water hyacinth and various fish species. Actions to be taken include (a) regional cooperation in fisheries research, extension and management; (b) research and monitoring of water quality and pollution, strengthening and harmonization of regulatory, incentive and enforcement systems concerning pollution, and priority investments in waste management; (c) monitoring and sustainable use of wetlands; (d) control of water hyacinth; (e) management of land use in the catchment, including information collection, pollution assessment and pilot projects in soil conservation and afforestation; and (f) support for policy initiatives, institutions for lake-wide research and management, and pollution disaster contingency planning.	World Bank Donovan <i>Active</i>	07/96 35.0 77.8

Global Environment Facility Investment Work Program

Country/Project/ Associated Bank Project	Project Description	Implementing Agency/ Task Manager/ Project Status	Bank Approval/ GET Grant / Total Project Cost
EAST ASIA AND THE PACIFIC			
<u>Biodiversity</u>			
China Nature Reserves Management Forest Resource Development & Protection	In accordance with China's NEAP and BAP priorities, this project will prepare and implement management plans in five priority protected areas, train staff, fund physical investments, and work with communities adjacent to and within PA boundaries to create incentives for sustainable resource use. A second component will restructure a major timber industry in Changqing to promote sustainable forestry, and create a core protected area of giant panda habitat, surrounded by a limited-use production/buffer zone. The project will build technical and managerial capacity of DNR through developing a national training team for biodiversity. It will fund a national nature reserve plan, equipment, policy studies and operational research, and set up an information management system.	World Bank Shen/Scobey Active	06/95 17.9 23.6
Indonesia Biodiversity Collections	Project strengthens the capacity of the Research and Development Center for Biology (PPPB) to manage systematic collections, including the establishment of a computerized database which will serve as a basic reference tool for biodiversity inventory and monitoring. Potential information users in other sectors will provide advice on database development. Specific components include human resource development, collections maintenance and development, improvement of research facilities, and publications and user products.	World Bank Gapasin Active	06/94 7.2 11.4
Indonesia Kerinci Seblat Integrated Conservation and Development Kerinci-Seblat Integrated Cons. & Dev. Project	The project will secure the future of the biologically rich, 1 million ha. Kerinci-Seblat National Park by integrating park management and conservation with local and regional development. Park management and protection will be strengthened, based on collaborative linkages with buffer-zone communities, and local NGOs and governments. The project will stabilize land use outside the park by promoting local-community and alternate livelihood activities consistent with park conservation objectives, and by improving overall local land use to relieve pressure on the park. Biodiversity assessments in lowland forest concessions surrounding the park will contribute to better management of a permanent buffer zone in these areas. The project will strengthen regulatory guidelines for inter-provincial, regional planning; improve conservation awareness locally and in the government; provide training and extension services to villagers, park staff and local government staff; and monitor and evaluate biodiversity conservation, human impacts and sustainable development in and around the park.	World Bank Silverman Active	04/96 15.0 47.2
Lao PDR Wildlife & Protected Areas Conservation Forest Management and Conservation Project	The project will protect biological diversity through the designation, establishment and management of priority protected areas, the protection of associated wildlife, and the planning and implementation of community participatory programs in and around protected areas. Components include the establishment and management of at least four protected areas, technical assistance and conservation training with particular emphasis on the recruitment of NGOs for community mobilization, environmental monitoring and evaluation, and the design of a conservation trust fund for long-term financing.	World Bank Shen Active	02/94 5.0 20.3

Global Environment Facility Investment Work Program

Country/Project/ Associated Bank Project	Project Description	Implementing Agency/ Task Manager/ Project Status	Bank Approval/ GET Grant / Total Project Cost
Philippines Conservation of Priority Protected Areas <i>Env. & Nat. Resources Sector Adj. Prgm.</i>	Support for government efforts to establish a core National Integrated Protected Area System (NIPAS) for ten sites over a seven year period, through financing site development and resource management. The project promotes participation of local communities in site management, and strengthens national capacity for coordination and monitoring. The Department of Environment and Natural Resources (DENR) received a grant to strengthen park infrastructure and services, and a national NGO consortium (NIPA) received a grant to provide technical assistance services and administer a livelihood fund for local communities.	World Bank Shen <i>Active</i>	05/94 2.9 (DENR) 17.1 (NIPA) 22.9
<u>Climate Change</u>			
China Sichuan Gas Transmission and Distribution Rehabilitation <i>Sichuan Gas Development and Conservation Project</i>	Rehabilitation of gas transmission and distribution systems to eliminate methane gas losses and improve pipeline network performance. Main components will focus on safety and operational efficiency of the transmission and distribution system, and selection of cost effective measures to reduce gas leakages through a program of environmental upgrades. The associated Bank project includes a gas pricing reform program which will encourage efficiency and conservation in gas consumption in the future.	World Bank Morsli <i>Active</i>	03/94 10.0 122.7
Philippines Leyte-Luzon Geothermal <i>Leyte/Luzon Geothermal Project</i>	Project seeks to assist in meeting the rapidly increasing demand for electrical power using technology that substantially reduces greenhouse gas (GHG) emissions. The National Power Corporation (NPC) components of the project include the interconnection of electrical power systems of Leyte and Luzon Islands and the strengthening of the environmental and social engineering departments of NPC. The Philippine National Oil Company (PNOC) components of the project include the construction and operation of a 440 MW geothermal electric generation plant under a BOT contract, reinjection of waste gases to further reduce GHG emissions, and connection of the power station to the national grid.	World Bank Irving/Farhandi <i>Active</i>	05/94 30.0 1,333.6
Thailand Promotion of Electricity Energy Efficiency <i>Distribution System & Energy Efficiency Project</i>	Project comprises a five year demand side management plan, which seeks to build institutional capability in the Thai electric power sector and throughout the economy. Will pursue policies and actions leading to the development, manufacturing, and adoption of energy efficient equipment and processes. Project will demonstrate potential savings, both financial and environmental, from reducing the use of fossil fuels for electricity production and will demonstrate the potential of the electric power sector to achieve these savings.	World Bank Mehta <i>Active</i>	04/93 9.5 89.0
<u>International Waters</u>			
China Ship Waste Disposal <i>Ship Waste Disposal Project</i>	This project combines GEF, IDA and local financing to reduce pollution in international and territorial waters caused by ship wastes. It provides technical and financial assistance to the Government of China and six port authorities, selected as models, for the construction and/or rehabilitation and expansion of ship waste disposal facilities. The project includes both national and individual port components.	World Bank Tsutsumi <i>Active</i>	05/92 30.0 64.8

Global Environment Facility Investment Work Program

Country/Project/ Associated Bank Project	Project Description	Implementing Agency/ Task Manager/ Project Status	Bank Approval/ GET Grant / Total Project Cost
EUROPE AND CENTRAL ASIA			
<i>Biodiversity</i>			
Belarus Biodiversity Protection	This project aims at conservation planning and research outreach programs for the Belovezhskaya Forest, Berezinsky and Pripiatsky Reserves. It complements the Poland Forest Biodiversity project.	World Bank Stephenson <i>Active</i>	09/92 1.0 1.3
Czech Republic Biodiversity Protection	This project protects ecosystem biodiversity in three representative ecosystems (zones containing alpine meadows, lowland forests and wetlands), and supports the activity of three transnational biodiversity protection networks. It also introduces user fees and related charges for visitors and concessions in order to manage the areas in a financially sustainable manner and within their carrying capacity.	World Bank Battaglini <i>Active</i>	10/93 2.0 2.8
Poland Forest Biodiversity Protection	The project has initiated programs to conserve the biodiversity of key endangered forests and is providing institutional support to the Ministry of Environment, Natural Resources and Forests to undertake biodiversity conservation management activities. Innovative features include the establishment of a gene bank and arboreta to protect genetic diversity and to provide plants for reforestation in areas degraded by pollution.	World Bank Battaglini <i>Closed</i>	12/91 4.5 6.2
Romania Danube Delta Biodiversity	The project aims to protect the Romanian Delta ecosystem and contribute to the conservation of biodiversity within the Delta. It will strengthen institutional capacity to monitor and manage protected areas effectively, work with local community groups to ensure sustainable resource use and restore some wetlands to their natural condition by testing various approaches and monitoring their impact.	World Bank Luca <i>Active</i>	07/94 4.5 4.8
Russian Federation Biodiversity Conservation <i>Environmental Management Project</i>	This project consists of three components: (i) National Strategic Overview (formulation of a national biodiversity strategy, establishment of a biodiversity database/information system, and preparation of guidelines on economic evaluation of biodiversity investments and policies); (ii) Nature Protection (institutional support, training, immediate assistance to critical PAs, and model ecotourism projects); and (iii) Integrated Regional Development/Natural Resource Management in the Lake Baikal Region.	World Bank Bond <i>Active</i>	05/96 20.1 26.0
Slovak Republic Biodiversity Protection	This project in the Morava floodplain, Tatras forests, and Eastern Carpathians is developing management techniques for a biodiversity protection program, a conservation program to develop revenue generation mechanisms for the protected area system, and a program to provide support for project management coordination at the national level and at the three selected zones. Innovative features include an environmental NGO small grants program, and the development of a tri-national trans-border trust to maintain the coordinated management of the international biosphere reserve in Eastern Carpathians.	World Bank Battaglini <i>Active</i>	09/93 2.3 3.2
Turkey In-Situ Conservation of Genetic Biodiversity <i>Eastern Anatolia Watershed Rehab. Project</i>	This project will identify and establish in-situ conservation areas for the protection of genetic resources and wild relatives of important crops and forest tree species that originated in Turkey, providing for sustainable in-situ conservation of genetic resources in cereals, horticultural crops, medicinal plants, forest trees, and pasture grasses and legumes through an integrated ecosystem approach. Project components include site surveys and inventories, gene management zones, data management, a national plan for in-situ conservation, and institutional strengthening.	World Bank Durutan <i>Active</i>	02/93 5.1 5.7

Global Environment Facility Investment Work Program

Country/Project/ Associated Bank Project	Project Description	Implementing Agency/ Task Manager/ Project Status	Bank Approval/ GET Grant / Total Project Cost
Ukraine Danube Delta Biodiversity	This project aims to protect the Ukrainian Delta ecosystem and contribute to the conservation of biodiversity in the Delta. It will strengthen institutional capacity to manage protected areas effectively, working with local community groups to ensure sustainable resource use, and restoring some wetlands to their natural condition. The project complements the Romanian Danube Delta project.	World Bank	06/94
		Stephenson	1.5
		<i>Active</i>	1.7
Ukraine Transcarpathian Biodiversity Protection	Part of the tri-country Transcarpathian Network, the project supports a biodiversity protection program (inventory, genetic studies, GIS critical habitat analysis), a management resources program to enable coordinated management of the discontinuous reserved areas of the Carpathians Biosphere Reserve, and training and institutional strengthening programs.	World Bank	07/93
		Stephenson	.5
		<i>Active</i>	.6
<u>Climate Change</u>			
Lithuania Klaipeda Geothermal Demonstration <i>Klaipeda Geothermal Demonstration Project</i>	This project helps to finance construction of a demonstration geothermal plant to provide hot water to the Klaipeda district heating system, as well as modifications to the heating system to render it compatible with geothermally heated water. It will reduce annual CO2 emissions by an estimated 56,000 tons, and reduce SO2, NOx and TPM emissions significantly too.	World Bank	05/96
		Halldin	6.9
		<i>Active</i>	18.0
Poland Coal-to-Gas Project <i>Heat Supply Restructuring and Conservation Project</i>	The project expects to demonstrate interfuel substitution and technological innovation as a means of reducing CO2 emissions. GEF funds will be used to extend coal-to-gas conversions to medium-size boilers whose owners could not achieve acceptable financial rates of return without concessional financing.	World Bank	11/94
		Benmessaoud	25.0
		<i>Active</i>	48.3
Russian Federation Greenhouse Gas Reduction <i>Gas Distribution Rehab. & Energy Efficiency Project</i>	This project will develop analytical techniques for identifying and quantifying the principal sources of greenhouse gas emissions in the production, transport and utilization of natural gas. It will also develop methodologies for ranking the most cost-effective projects for reducing GHG emissions, define the criteria for assessing eligibility and incremental costs, and strengthen the institutional structures and the technical capabilities required to apply the techniques in planning and implementation.	World Bank	12/95
		Stuggins	3.2
		<i>Active</i>	130.9
<u>Ozone Depletion</u>			
Bulgaria Ozone Depleting Substances Phase-out	Sixty-five percent of Bulgaria's 1993, annual, weighted ozone-depleting substance consumption will be phased out (468 metric tons ODP) through sub-projects in the refrigeration, foam-blowing and solvents sectors. A recycling and servicing component will phase out further ozone-depleting substances already in use in refrigerator, and a third component will strengthen the national Phase-out Task Force.	World Bank	11/95
		Sarkar	10.5
		<i>Active</i>	13.5
Czech Republic Phaseout of Ozone Depleting Substances	The project will eliminate production of chlorofluorocarbons (CFCs) in the Czech Republic. It will establish a national refrigerant recovery/ reclamation/recycling program. It will phase out CFCs in certain commercial, industrial and transport refrigeration systems, as well as introduce low and non-ozone-depleting foam technologies.	World Bank	08/94
		Kosmo	2.3
		<i>Active</i>	4.1
Hungary Phaseout of Ozone Depleting Substances	Over half of Hungary's 1993, annual, weighted ozone-depleting substance consumption will be phased out (approx. 1150 metric tons ODP) through 13 subprojects in the solvents, foam, aerosol, halon and refrigeration sectors, and through a recovery, recycling and reclamation component.	World Bank	11/95
		Kosmo	6.9
		<i>Active</i>	8.4

Global Environment Facility Investment Work Program

Country/Project/ Associated Bank Project	Project Description	Implementing Agency/ Task Manager/ Project Status	Bank Approval/ GET Grant / Total Project Cost
Russian Federation Phaseout of Ozone Depleting Substances (first tranche)	The first of three groups of sub-projects in the GEF-supported Russian ODS Phaseout Program, this project will eliminate annual consumption of approximately 2573 metric tons of weighted, ozone-depleting substance potential, or about 5% of Russia's 1992 weighted consumption, through (a) replacing CFC propellant with hydrocarbon aerosol propellant in a major spray-products enterprise and (b) replacing CFC-12 with a propane/butane mixture in a refrigeration products enterprise.	World Bank	05/96
		Batstone	8.6
		Active	21.3
Slovenia Phaseout of Ozone Depleting Substances	This project will phase out approximately 36% (345 metric tons ODP) of Slovenia's 1993, annual, weighted ozone-depleting substance potential through six subprojects in the refrigeration, foams, aerosol and solvent sectors.	World Bank	11/95
		Kosmo	6.2
		Active	9.7

LATIN AMERICA AND THE CARIBBEAN

Biodiversity

Bolivia Biodiversity Conservation	This project will protect representative samples of diverse and threatened ecosystems, and strengthen the government's institutional capacity to protect Bolivian biodiversity. Specific components of the project include support for the organization, implementation and follow-up of a National System of Protected Areas (SNAP) and the establishment of new priority protected areas. In addition, the project will include the development of alternative management systems for the protection of natural resources in buffer zones, the development of monitoring and evaluation systems, and administrative support.	World Bank	11/92
		Plaza	4.5
		Active	8.4
Brazil National Biodiversity Project <i>National Environment Project</i>	The project, to be managed by the Ministry of the Environment (MMA), will consist of (1) a series of workshops to set biome-level priorities for biodiversity conservation and development of a national biodiversity strategy, (2) establishment of a national biodiversity information network, and (3) funding of model biodiversity projects involving various combinations of public and private sector organizations. This project was developed in tandem with the Brazilian Biodiversity Fund project (see below), and strategic guidance from the biome-level workshops will help prioritize FUNBIO activities.	World Bank	04/96
		Sobrevida	10.0
		Active	20.0
Brazil Brazilian Biodiversity Fund <i>National Environment Project</i>	The project will help establish the Brazilian Biodiversity Fund (FUNBIO), to be managed by the Getulio Vargas Foundation, a private non-profit organization. An independent Board, composed of representatives from the private sector, the conservation community, academia and government, has been appointed and will be responsible for FUNBIO operational and investment policy. FUNBIO is a sinking fund with a minimum contribution target of \$25 million, to be provided by GEF, the private sector, NGOs, the public sector and research institutions. The fund will provide modest long-term financing for projects consistent with biome-level priorities identified in the MMA-managed workshops in the National Biodiversity Project. The overall objective of the two projects is to promote biodiversity conservation and sustainable use through innovative public and private sector partnerships.	World Bank	04/96
		Sobrevida	20.0
		Active	25.0

Global Environment Facility Investment Work Program

Country/Project/ Associated Bank Project	Project Description	Implementing Agency/ Task Manager/ Project Status	Bank Approval/ GET Grant / Total Project Cost
Ecuador Biodiversity Protection	Support for the restructuring and strengthening of the institutional capacity, regulatory and legal framework for adequate management of the National System of Protected Areas (NSPA). Project activities will focus on (i) institutional strengthening of the Ecuadorean Institute of Forestry, Natural Areas and Wildlife (INEFAN) in managing the NSPA; (ii) creation of an improved legal and regulatory framework; (iii) outreach activities to local communities, involving them in management plan development for protected areas; and (iv) investment activities for civil works and infrastructure in eight priority protected areas based on participatory management plans developed with project support.	World Bank Plaza <i>Active</i>	05/94 7.2 8.8
Mexico Protected Areas Program <i>Mexico Environmental Project</i>	The project supports selected conservation activities on the basis of detailed management plans for ten protected area sites. The development and supervision of management plans will be guided by Technical Advisory Committees, composed of representatives of local communities, non-governmental organizations, local governments and other stakeholders. An ecotourism plan will be prepared and implemented in one of the protected area sites on a pilot basis, for potential replication in other areas.	World Bank Demayo <i>Active</i>	03/92 25.0 32.2
Peru National Trust Fund for Protected Areas	The GET will provide seed money for the Trust Fund for Conservation of Peru's Parks and Protected Areas (FONANPE). Annual revenue from the trust will finance management activities -- including training, management plans, operational costs, salaries, awareness programs and buffer zone alternative livelihood activities -- for three key protected areas: Manu National Park and Biosphere Reserve, Noroeste Biosphere Reserve and Rio Abiseo National Park. As the fund grows through outside contributions, additional protected areas will receive support. GTZ is providing parallel financing to support the National Institute of Natural Resources (INRENA) and recurrent expenses of FONANPE's administrative agency, PROFONANPE, during 1995. The GTZ parallel grant also finances development of a master plan for all Peruvian protected areas and a 2-year NGO small grants program for sustainable, integrated conservation and development projects.	World Bank Alderman <i>Active</i>	03/95 5.0 6.5
<u>Climate Change</u>			
Jamaica Demand Side Management Demonstration	Strengthening of the institutional capabilities of Jamaica Public Service Company (JPSCo), and implementation of an integrated approach to energy conservation. JPSCo. will acquire the necessary information and data to develop sustainable programs that overcome market barriers to energy conservation. Mechanisms to address these barriers will be tested, and evaluation results will be used to design full scale sustainable long-term energy efficiency programs. The project will demonstrate the viability of energy savings and efficiency in the commercial, residential and industrial sectors and the long-term sustainability of retrofitting.	World Bank Mian <i>Active</i>	03/94 3.8 12.5
Mexico High Efficiency Lighting Pilot	The project will reduce greenhouse gas emissions as well as local environmental contamination through the replacement of incandescent bulbs with fluorescent light bulbs in two major markets: Guadalajara and Monterrey. Project will also work to increase institutional capacity for technological change and energy conservation, and strengthen the Federal Electricity Commission (CFE) and its capacity to practice demand side management on a sustainable basis.	World Bank Cosenza <i>Active</i>	03/94 10.0 23.0

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Country/Project/ Associated Bank Project	Project Description	Implementing Agency/ Task Manager/ Project Status	Bank Approval/ GET Grant / Total Project Cost
<u>International Waters</u>			
Regional (Org. of Eastern Caribbean States) Ship-Generated Waste Management OECS Solid Waste Management Project	Project will assist OECS governments in reducing pollution of international and territorial waters caused by the discharge of ship-generated solid wastes by supporting appropriate actions aimed at improving collection, treatment and disposal of these wastes. Project includes national components consisting of the establishment of port-waste reception facilities and incremental expansion of landfill sites to handle ship-generated wastes, together with a regional component comprised of support activities and technical assistance for project management, training and education, establishment of common legal framework for ship waste management, recycling possibilities and public awareness programs. Project activities will also protect critical habitat for the endangered Grenada dove.	World Bank Dabbagh Active	05/95 12.5 50.5
Regional (Wider Caribbean) Wider Caribbean Initiative for Ship-Generated Waste	Project activities will lay the foundation for countries in the Wider Caribbean Region to ratify and implement the MARPOL 73/78 Convention, ending discharge of ship-generated wastes into international and territorial waters. Technical assistance will be provided for studies leading to a regional strategy for the implementation of MARPOL 73/78, assessment of existing waste management systems, formulation of criteria for waste reception facilities at ports, development of integrated waste management alternatives, and public awareness programs. The project will also support periodic regional consultative meetings to reach consensus on different elements of a regional MARPOL strategy.	World Bank Dabbagh Active	06/94 5.5 5.5
MIDDLE EAST AND NORTH AFRICA			
<u>Biodiversity</u>			
Algeria El Kala National Park and Wetlands Management	The project will develop and implement a management plan for the National Park and wetland complex in the El Tarf Wilaya, including undertaking base-line studies, protected area management, natural resource use development, monitoring and adaptive research, environmental education, institutional strengthening and establishing a conservation fund for NGOs and other local environmental groups.	World Bank Msellati Active	04/94 9.2 11.6
Egypt Red Sea Coastal and Marine Resource Management Priv. Sect. Tourism Infrastr. & Env. Mgmt	The project will support the development and implementation of policies, plans and regulations that ensure that economic development in the Red Sea is consistent with sound environmental management to protect the shared marine resources of the Red Sea coastal zone. Project components include institutional strengthening, development of public-private partnerships to ensure sustainable environmental management, data analysis and system monitoring.	World Bank Graham Active	11/92 4.8 5.7
<u>Climate Change</u>			
Iran Teheran Transport Emissions Reduction	The study will identify least-cost short and long-term options for reducing vehicular emissions in Tehran, based on an analysis of policy and technology constraints, and will suggest specific actions which could be taken to overcome those constraints.	World Bank Archambault Active	10/93 2.0 4.0

Global Environment Facility Investment Work Program

Country/Project/ Associated Bank Project	Project Description	Implementing Agency/ Task Manager/ Project Status	Bank Approval/ GET Grant / Total Project Cost
Morocco Repowering of Power Plant	Repowering of an existing plant with a second generation advanced combustion turbine, together with improvements in the quality of the materials and enhancement of the scheme's performance in the power generating system of Morocco. Close monitoring of the project's impact and careful analysis of the findings will help determine its wider applicability for use throughout the country.	World Bank	09/94
		Larrieu	6.0
		<i>Active</i>	45.7
Tunisia Solar Water Heating	The project will promote the commercialization of solar water heating technology in the residential and tertiary sectors by conditioning the market for sustained penetration of the technology as a least-cost alternative under competitive market conditions.	World Bank	11/94
		Savorelli	4.0
		<i>Active</i>	20.9
<u>International Waters</u>			
Regional (Algeria, Morocco, Tunisia) Oil Pollution Management Project for the Southwest Mediterranean Sea <i>Algeria Third Ports / Morocco Port Sector Loans</i>	The project aims to: (a) reduce the input of hydrocarbons into the international waters of the Mediterranean; (b) ensure commonality of approach, regulatory policies, and methodologies; (c) promote exchange of information and coordination of implementation; (d) utilize national data sets to assess long term regional trends in marine pollution, both for national coastal waters and for adjacent international waters; (e) enhance the national monitoring capability; and (F) develop a coastal environmental management framework.	World Bank	04/94
		Ben-Slimane	18.3
		<i>Active</i>	20.0
Jordan Gulf of Aqaba Environmental Action Plan	As part of the regional Environmental Action Plan for the Gulf of Aqaba, the project will (a) develop regional collaborative mechanisms for strengthening the capacity to protect coastal zone and marine biodiversity; (b) develop and enforce the legal framework and regulations for control of transboundary pollution; (c) provide safeguards against oil pollution; (d) establish and implement guidelines for sustainable development of the coastal zone; (e) assess the effects of wastewater seepage on the quality and level of the transboundary water table; (f) implement a plan to control solid waste impacts on marine and coastal waters; and (g) demarcate and manage a marine protected area.	World Bank	06/96
		Glineur	2.7
		<i>Active</i>	12.7
SOUTH ASIA			
<u>Biodiversity</u>			
Bhutan Trust Fund for Environmental Conservation	The trust fund will provide reliable recurrent funding for the establishment and management of a national system of protected areas, and development of the institutional and human resource capacities needed to manage the national system. This project will test the feasibility of a trust fund as a mechanism for providing long-term, sustainable finance for biological conservation programs in the protected areas.	World Bank	05/92
		Mott	10.0
		<i>Active</i>	20.1
<u>Climate Change</u>			
India Alternate Energy <i>Renewable Resource Management Project</i>	Project promotes and commercializes investment in wind farms and solar photovoltaic power systems through the provision of below-market loans to investors in these systems, primarily from the private sector. Popularizes renewable technologies through public education programs that explain their functions and capacity. Implementation is overseen by the Indian Renewable Energy Development Agency.	World Bank	11/92
		Manzo	26.0
		<i>Active</i>	186.0

Montreal Protocol Projects to Protect the Ozone Layer

The following table presents the World Bank's Multilateral Fund-supported investment operations including project preparation activities from 1991-1996 administered by recipient governments. The Bank, as an implementing agency of the Multilateral Fund for Implementation of the Montreal Protocol on Substances That Deplete the Ozone Layer, assists developing countries in complying with the treaty's controls on production and consumption of ozone-depleting substances (ODS). The table subdivides the World Bank ODS phaseout projects by region and country with information on the amount of funds which have been allocated to over 460 individual subprojects (not listed) being carried out under these projects. Each region has a program coordinator whose name is listed at the top of the page. The table also lists the amount of ODS (in terms of the substances weighted ozone-depletion potential: its 'ODP') which will be phased out with approved funds, ODP phased out to date, funds disbursed to date and the status of project implementation. In many cases subproject activities have proceeded prior to funding availability. To date more than 7,000 tons of ODS have been phased out through these efforts.

Montreal Protocol Ozone Project Portfolio

Region/Country Project Title	ODP to be Phased Out 1/	ODP Phased Out to Date 1/	Approved Funding	Disbur- sements 2/	Status of Implementation
Chiller Retrofits - Clinica Atias	4		\$115,000	\$0	Agreement with enterprise signed. Implementation underway.
Chiller Retrofits - Congreso de la Republica	1	1	\$65,000	\$0	Project implementation complete.
Chiller Retrofits - Instituto de Previncion Social del Medico	2	2	\$69,000	\$69,000	Project implementation is complete resulting in ODS phaseout of 2.4 ODP tons and subproject to be complete by mid-1996.
Chiller Retrofits - Replacement of CFC by HFC-134a as a refrigerant in central air conditioning units			\$851,000	\$0	Project cancelled.
FAACA-MAC	90	13	\$3,480,000	\$1,435,139	Grant agreement was signed in January 1995. Project implementation is underway. Disbursements are proceeding rapidly. FAACA has already begun to produce HFC134a serpentine condensers, thereby eliminating 13 tons of CFC-12.
ODS Project I -- Plasticos Molanca	259	259	\$1,300,000	\$1,261,678	Project is complete and project completion report is on file. The plant production of expanded polystyrene has been shifted to the use of propane-butane. The financial accounts are expected to be closed shortly.
Middle East and North Africa			Regional Coordinator : Bill Rahill		
Egypt					
IFC - MCMC Compressor	292	292	\$2,800,000	\$1,000,000	Construction of the factory is complete. The technology transfer issue and general project-related difficulties which have delayed the signing of the grant agreement between the IFC and MCMC have been resolved and the grant agreement was signed in May 1995. The final disbursement will be made shortly after the final supervision mission later this year. US\$700,000 grant was returned to fund as foreign-ownership share increased.
Jordan					
ODS Project I	343		\$1,670,000	\$456,461	All subgrant agreements have been signed and procurement of goods and services has been initiated. This project was initially approved by the EC as a line-of-grant and the entire amount has been committed. Overall progress is satisfactory albeit slower than anticipated. The closing date for the project is fast approaching and appropriate actions will be considered when discussing a possible extension.
ODS Project II	134		\$434,500		This US\$3.5 million umbrella agreement was signed in September 1995. The subgrant agreements are now under preparation.
Tunisia					
ODS Project I	1,265	85	\$1,440,000	\$490,407	All subgrant agreements with participating enterprises have been signed.
South Asia			Regional Coordinator : Bill Rahill		
India					
ODS Project I	54		\$1,252,000	\$567,597	Implementation proceeding satisfactorily.

Montreal Protocol Ozone Project Portfolio

Region/Country Project Title	ODP to be Phased Out 1/	ODP Phased Out to Date 1/	Approved Funding	Disbur- sements 2/	Status of Implementation
East Asia and the Pacific		Regional Coordinator : Ellen Tynan			
China					
ODS Project I	15,400	2,900	\$6,579,000	\$6,773,415	Implementation of five subprojects complete or near completion.
ODS Project II (50% CFC Foam)	400	307	\$4,866,000	\$1,883,432	Eight subprojects are complete. Final subprojects will be completed in 1996. Disbursement of operation costs will begin soon and awaiting government confirmation of completion. Three additional projects will be complete in 1Q1996. The procurement issues have delayed implementation of the final subproject.
ODS Project III	11,310	1,250	\$42,278,963	\$3,747,550	The \$90 million umbrella grant agreement became effective on Nov. 30, 1995. Over twenty appraisals have been approved by the Bank and project implementation is underway. Disbursement has begun. Bank and Chinese Government reached agreement on subgrant agreement in March 1996. All subgrant agreements will be signed in 1996.
PPA-IV			\$200,000	\$0	Agreement signed and project preparation activities underway.
PPA-V-Halon Sector Strategy			\$100,000		Project preparation proceeding on schedule. Funds will be disbursed retroactively.
Indonesia					
ODS Project I	2,206	86	\$10,394,544	\$2,034,850	Subprojects are being implemented under a \$17 million umbrella grant agreement. Most appraisals complete. 15 subgrant agreements signed. Subproject implementation underway.
Malaysia					
ODS Investment Project I	923	366	\$9,075,583	\$1,500,000	US\$20 million umbrella grant became effective in January 1996. One subproject is complete and others are under implementation.
ODS Recycling Project	1,270	370	\$1,630,000	\$880,855	Implementation of the MAC recycle subproject is complete and the halon recycling subproject is underway.
Philippines					
ODS Project I	883	268	\$12,681,000	\$3,728,047	Subproject implementation proceeding under the \$30 million umbrella agreement. Disbursements to three subprojects with signed subgrant agreements have begun.
Thailand					
ODS Project I	1,319	165	\$12,938,817	\$4,201,409	The US\$40 million umbrella grant agreement is effective. Subproject activity has been initiated by enterprises. The enterprises are finalizing subgrant agreements with the financial agent.
Europe and Central Asia		Regional Coordinator : Bill Rahill			
Turkey					
IFC - ODS Project I (Assan Foam)	180		\$925,000		Project has been appraised by IFC (which is executing agency on behalf of the Bank). Grant agreement has been signed. The equipment specifications have been prepared and the enterprise has initiated procurement and project implementation. First disbursement to enterprise expected shortly.

Montreal Protocol Ozone Project Portfolio

Region/Country Project Title	ODP to be Phased Out 1/	ODP Phased Out to Date 1/	Approved Funding	Disbur- sements 2/	Status of Implementation
ODS Project I	754	660	\$6,165,000	\$5,331,195	Project under implementation. Most components are well advanced and close to completion. Substantial ODS phaseout has been achieved.
ODS Project II	540	290	\$3,886,022	\$2,299,541	The US\$20 million umbrella grant agreement for this project has been signed and all projects are now under active implementation. Disbursements are underway.
Tek-Iz	155		\$729,650		
Latin America and the Caribbean					
			Regional Coordinator : Jessica Poppele		
Argentina					
ODS Project I	700		\$21,868,345		Negotiations on the US\$2.5 million grant agreement completed Nov. 7, 1995. Final version of the agreement was sent to the government Jan. 4, 1996. Approval of the agreement requires a presidential decree which is being processed through the Ministry of Economy. The grant agreement will likely be signed by mid-1996. Implementation has been initiated in a few enterprises and will be funded retroactively.
Brazil					
ODS Project I	1,578	270	\$11,457,532	\$1,109,001	Subprojects are being implemented under US\$10.9 million umbrella agreement.
Chile					
ODS II	400		\$1,000,000		Project approved 07/17/96
ODS Project I	402	35	\$1,332,451	\$591,758	The grant agreement was signed in July 1993. Project implementation is underway. The main component of this grant agreement provides subsidies to private firms in the foam and refrigeration sectors for the conversion to non-ODS technologies. After overcoming legal and institutional problems, project implementation is now proceeding as planned.
Ecuador					
ODS Project I	341	629	\$1,566,000	\$1,031,019	The subprojects have been completed on schedule.
Mexico					
MAC Recycling and Aerosols	36		\$180,000	\$53,791	The project consist of two components: CFC-12 Recycling (42%) and Aerosol Manufacturing Safety (58%).
ODS Project I (Ozone Protection Policy)	470	486	\$4,000,000	\$1,468,723	Subprojects are being developed and implemented under a US\$4 million line-of-grant.
Uruguay					
ODS Project I	52		\$1,457,719	\$200,000	A grant agreement of US\$5 million was signed with the Government of Uruguay in June 1995. The Bank is working with the ozone unit in assessing the viability of ODS abatement activities in the air conditioning and commercial refrigeration sectors, including recycling initiatives.
Venezuela					
AAISA-MAC	80		\$4,422,000	\$555,852	The grant agreement is comprised of two subprojects. The legal agreement was signed in July, 1995, and implementation has begun. Conditions of effectiveness have been met and AAISA has initiated retroactive expenditure withdrawals.

Montreal Protocol Ozone Project Portfolio

Region/Country Project Title	ODP to be Phased Out 1/	ODP Phased Out to Date 1/	Approved Funding	Disbur- sements 2/	Status of Implementation
ODS Project II	3,224	517	\$20,714,446	\$3,940,198	This US\$50 million umbrella grant agreement establishes the framework for processing a large number of small projects over the next three years. As umbrella agreement not signed until May-95, subprojects approved in '93 and '94 were delayed by up to two years. This lag will no longer be an issue for future approvals. Project preparation under this grant agreement was initially supported through a Project Preparation Advance (PPA). The amount of the PPA was later adjusted to reflect the changing nature of project preparation activities.
PPA I - ODS Project I			\$345,000	\$105,708	Activities under this Project Preparation Advance have been halted. The final disbursement is being negotiated with the financial agent. remaining funds will be credited to the Multilateral Fund.
Pakistan					
ODS Project I	287		\$1,998,242		The umbrella agreement under preparation will cover 3 years of ODS phaseout projects in Pakistan. Final grant agreement signature is expected by mid-1996.

1/ Metric tons

2/ Data as of June 1, 1996

PPA - Project Preparation Advance

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