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# Protecting and Improving the Global Commons

*15 Years of the  
World Bank Group  
Global Environment Facility Program*



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Environment Facility Program





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# Foreword

The World Bank Group considers the Global Environment Facility (GEF) an essential part of the international community's response to the challenges of protecting the regional and global commons. That a robust global response continues to be required is beyond doubt. In 2005 the Millennium Ecosystem Assessment, an international appraisal of the health of the earth's ecosystems, found that changes in ecosystems during the past 50 years were more rapid than in any comparable period in human history and that this degradation could worsen significantly. Scientific evidence has shown that climate change is already occurring, and the poorest people in developing countries are at greatest risk.

The Third GEF Assembly in Cape Town, South Africa, is an opportunity to take stock of the role of the GEF as a catalyst in providing finance to help developing countries protect the global environment and in supporting the World Bank Group's goal of sustainable development. In particular, this report highlights three areas on which the Bank has focused its attention over the past 15 years of the GEF's operation:

- Private sector development. The development of markets for global environmentally-friendly technologies and for ecosystem goods and services is a central pillar of the World Bank Group's GEF program.
- Resource mobilization. As the largest source of multilateral development assistance, the World Bank Group is able to provide its partner countries with a menu of financing options for activities that protect the global and regional commons while improving local environmental quality and sustainable natural resource management.
- Governance. Changes in governance include reforms that increase the transparency and accountability of institutions, including greater involvement of concerned stakeholders in decision making that affects ecosystems.

As our GEF program matures, I would like to reiterate the World Bank Group's commitment to replicating and scaling up the successes of our GEF portfolio, further integrating the global environmental agenda into our country assistance strategies and lending programs, and improving the quality of outcome measurement.

Katherine Sierra  
Vice President, Sustainable Development  
The World Bank



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# Abbreviations and acronyms

CBM	Community-based management
CFL	Compact fluorescent lamp
COREMAP	Coral Reef Rehabilitation and Management Project
CRESP	China Renewable Energy Scale-up Program
CRMP	Coral reef management plan
EMC	Energy management company
ESCO	Energy service company
GEF	Global Environment Facility
HEECP	Hungary Energy Efficiency Co-Financing Program
IBRD	International Bank for Reconstruction and Development
IDA	International Development Association
IEDP	India Ecodevelopment Project
IEG	Independent Evaluation Group [World Bank]
IFC	International Finance Corporation
NGO	Nongovernmental organization
POP	Persistent organic pollutant
PSA	Pago por Servicios Ambientales [program of payments for environmental services, Costa Rica]
WBG	World Bank Group

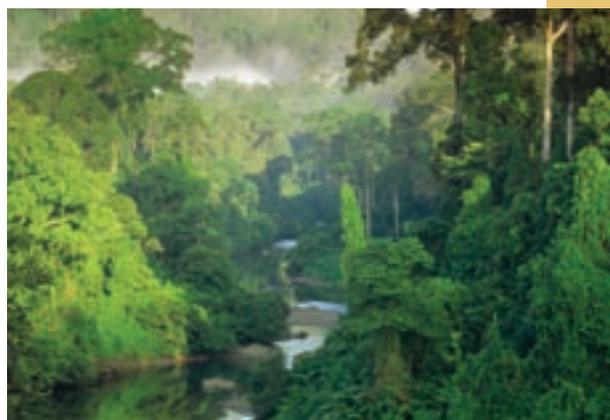
All dollar amounts are U.S. dollars unless otherwise indicated.



# The World Bank Group and the Global Environment Facility

The past few decades have witnessed a growing recognition that the serious state of the global environment requires a correspondingly serious global response. In 1991 the Global Environment Facility (GEF) was born and became a part of the needed response. The World Bank Group (WBG) has from the start been an essential element in the partnership that the GEF represents. This report provides highlights of the World Bank Group’s role in that partnership during the first 15 years of the GEF’s existence.

The GEF is the largest single provider of grant funds to developing countries for projects that help protect and improve the regional and global environment. GEF-cofinanced projects often also promote sustainable livelihoods in local communities in developing countries. During its first 15 years the GEF has approved more than \$6.2 billion in grants. Of this amount, the World Bank Group has committed \$3.1 billion for about 450 projects in more than 100 developing countries and countries with economies in transition.<sup>1</sup> These projects span GEF’s six focal areas, each of which is concerned with a complex global environmental issue—biodiversity, climate change, international waters, land degradation, ozone-depleting substances, and persistent organic pollutants. The GEF is the designated financial mechanism for three international conventions, on biological diversity, climate change, and persistent organic pollutants (POPs), and is one of the designated financial mechanisms for the United Nations Convention to Combat Desertification.



The WBG–GEF Program has as its objective “protecting the quality of the regional and global commons by supporting the transfer of financial resources and environmentally friendly technologies, technical assistance, and development of markets for environmental goods and services.” For example, the program

- Helps preserve global biodiversity through support for the creation, expansion, or strengthening of protected areas in forest, mountain, dryland, freshwater, and marine ecosystems

<sup>1</sup> The other implementing and executing agencies of the GEF account for the remaining \$3.1 billion.

- Facilitates reduction in emissions of greenhouse gases by helping remove barriers to the transformation of markets to foster energy efficiency and renewable energy technologies
- Helps prevent or reverse degradation of the world's water resources by promoting improved management at the domestic, regional, and interregional levels to deal with the competing pressures, needs, and demands affecting transboundary water bodies
- Supports efforts to stop and reverse the trend toward land degradation by helping provide sustainable livelihoods and economic well-being while addressing such local and global environmental issues as erosion, forest cover, and carbon sequestration.



According to the Bank's Environment Strategy, *Making Sustainable Commitments* (World Bank 2001), the availability of GEF funding has been important because such funding

- Provides "a powerful extension of other World Bank instruments to help address the quality of the regional and global commons"
- Produces local environmental improvements while seeking global environmental benefits
- Provides means not available under normal World Bank Group lending arrangements to engage nongovernmental organizations (NGOs) and other members of civil society in the dialogue on environmental management
- Supports the piloting of "innovative methods of sustainable natural resource management with local-global environmental links."

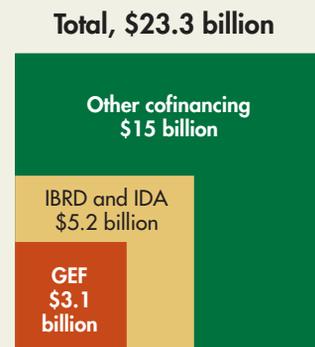
Integrating GEF resources with Bank lending resources and procedures is already a major, although unfinished, success story. Just between 1995 and 2000, the proportion of GEF-cofinanced projects with directly associated World Bank Group funding increased from 23 to 65 percent.

The World Bank Group, for its part, brings to GEF's undertakings a formidable capacity to harness resources, both internally and from its partners in the private sector and elsewhere. During

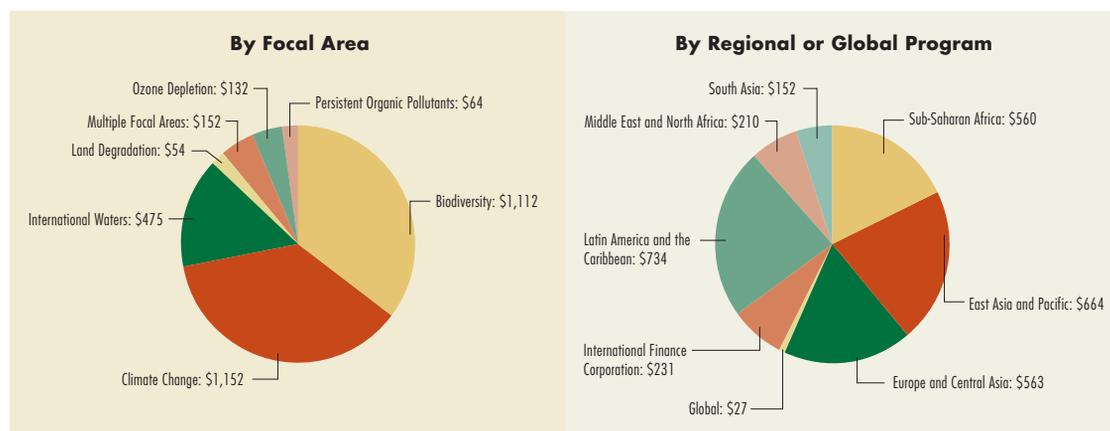
the period 1991–2006, \$3.1 billion in GEF grants was approved for WBG–GEF projects. The Bank, through the International Bank for Reconstruction and Development (IBRD) and the International Development Association (IDA), added \$5.2 billion of its own resources.<sup>2</sup> Cofinancing from other sources amounted to a further \$15 billion, making a total of \$23.3 billion (figure 1).

Thus, for every GEF dollar there was almost \$1.70 in additional IBRD or IDA funds and more than \$6.50 in additional money altogether. According to the GEF’s Third Overall Performance Study, “the World Bank is responsible for attracting the lion’s share of cofinancing, representing more than 60 percent of the planned cofinancing raised in [the GEF’s third replenishment phase] and approximately 80 percent since the GEF’s inception.”

**FIGURE 1. Mobilizing public and private funds for the environment: The World Bank Group–GEF Program, 1991–2006**



**FIGURE 2. Distribution of World Bank Group–GEF commitments, 1991–2006 (millions of U.S. dollars)**



<sup>2</sup> The World Bank is made up of the International Bank for Reconstruction and Development (IBRD), which extends loans to developing and transition countries, and the International Development Association (IDA), which grants credits to the poorest countries. The World Bank Group includes the International Finance Corporation, as well as other agencies.



# The GEF portfolio and the World Bank Group's environmental vision

Part of the World Bank Group's value added is that the GEF objectives find resonance in the Bank's own environmental vision. This explains why the Bank has been able to complement GEF investments with so much of its own resources. This is also why the Bank seeks increasingly to incorporate its GEF portfolio into its threefold environment strategy: improving the quality of life, improving the quality of growth, and protecting the quality of the regional and global commons.

Already, after 15 years, the effort by the World Bank Group and the GEF has been impressive. Perhaps the best way to obtain a glimpse of the unfolding story is to look at some of the highlights of the Bank's collaboration with the GEF. This overview examines:

- How the Bank facilitates engagement with the private sector and helps transform the marketplace so that global environmental benefits flow from the normal, day-to-day conduct of economic affairs
- How the Bank helps mobilize some of the huge amounts of money and other resources needed to make environmental initiatives meaningful and effective
- How WBG-GEF initiatives have contributed to improved governance in beneficiary countries and regions and even within the wider global context.

## Engaging the private sector

- Little remains of the debate on whether the private sector must be mobilized in the crafting and implementation of any meaningful solution to the world's environmental problems. Many of the practices that must be changed, many of the resources that must be employed, and many of the relevant technologies that must be applied to protect and improve the global commons are in the private sector province. Some distinctive strengths of the sector are:
  - Greater innovation and the provision of technology and know-how
  - The ability to increase the impact of GEF activities
  - The potential to ensure sustainability beyond the life of GEF-cofinanced projects and to promote the replication of successful innovations
  - The leveraging of GEF investments through the resources of the sector
  - The efficiency for which the private sector is well known.

The WBG-GEF Program has recognized the need to turn to the private sector and its particular capacities to help facilitate the promotion of global environmental benefits (see boxes 1 and 2).

## BOX 1

### The rationale for GEF cooperation with the private sector

“Even though the private sector must inevitably be regarded as a source of both the problem and the solution, better alignment of public-private interests is both an important goal and a realistic prospect.

“Private enterprise is increasingly being seen as a key to sustainable economic development, and is contributing to leading watershed protection, carbon reduction programs and biodiversity conservation.

“This is true for local entrepreneurs as well as multinationals operating in recipient countries of interest to the GEF.”

Source: Global Environment Facility, “Strategy to Enhance Engagement with the Private Sector,” May 2006.

Within the Bank’s family of agencies, the International Finance Corporation (IFC) lends directly to the private sector, while IBRD, among its other activities, supports the creation of an appropriate enabling environment for private sector involvement. Market transformation, policy reform, capacity development, payment for environmental services, and the infusion of sound environmental practices into the marketplace are some of the strategies through which the World Bank Group helps harness the private sector’s ability to contribute to environmental security.

#### *Transforming the market*

The climate change portfolio is an area in which the WBG–GEF Program has been particularly successful in engaging the private sector. This portfolio has been through three recognizable waves at the GEF, each succeeding wave requiring and facilitating greater private sector participation. Initially, the portfolio consisted mainly of demonstration projects designed to show that existing energy facilities could be used more efficiently, thus requiring lower rates of environmentally unfriendly expansion, or that the development and use of new and renewable sources of energy were feasible.

The second wave focused on market transformation, as a consequence of the recognition that demonstrating possibilities without removing barriers left the job less than half done. The third wave takes market transformation a stage further, focusing on the need to mobilize and enhance the capacity of local financial markets to support environmental investments.

## BOX 2

### Gains from private-public cooperation: A two-way street

The provision of clean energy offers an opportunity to engage the private sector in improving and protecting the environment. But it also helps private firms do the business they were set up for in the first place.

In World Bank Group surveys on the business and investment climate, the unavailability of electricity services has been cited as a major obstacle to doing business by large numbers of firms in Latin America (25 percent), South Asia (38 percent), and Sub-Saharan Africa (44 percent).

Several WBG–GEF climate change projects, while providing global environmental benefits, have also enabled shops and other small rural businesses to switch from kerosene to electric lighting. Often, small manufacturing ventures became possible, or more profitable, as a result of successful project implementation.



The emphasis on market transformation is premised on the idea that project and program interventions will not effect the desired changes if people and institutions do not change their day-to-day ways of doing business. A demonstration project has little long-term value if it leaves shopowners and shoppers with no awareness of the existence and the benefits of compact fluorescent lights or if architects and homebuyers still know or care little about environmentally friendly ways of heating, cooling, lighting, or ventilating the houses they design and inhabit.

In the context of climate change, market transformation involves removing barriers to the implementation of renewable or energy-efficient technologies that are climate friendly and commercially viable. These barriers include:

- Lack of awareness about the technology or about its availability, value, or use
- The absence of standards, and therefore a continued preference for the tried and trusted technology of the past
- Real or assumed unaffordability or—even where the product or service may be affordable over time—the high initial cost of acquisition
- The reluctance of businesses to assume the risk involved in trying to manufacture or market a new product or service
- Lack of will or capacity on the part of local banks to provide the needed finance.

### **BOX 3**

## **Impact of Energy Efficiency Projects**

A recent study on the postimplementation impact of WBG–GEF energy efficiency projects (World Bank forthcoming) examined the long-term effects of four projects that focused on energy efficiency and demand-side management. The projects evaluated—Poland Efficient Lighting, Mexico High-Efficiency Lighting, Thailand Promotion of Electrical Energy Efficiency, and Jamaica Demand-Side Management Demonstration—had been completed some time earlier, in 1999 or 2000, and therefore provide an early and limited view of World Bank Group practice and project design. All four projects built up demand-side management capacity, achieved reductions in electricity consumption and greenhouse gas emissions, and developed replicable technical and financial program models.

Among the impacts identified by the study were

- Major market transformation in the residential sector, especially in lighting.
- Significant and sustainable energy savings, and reductions in greenhouse gas emissions, associated with the transformation of residential markets.
- Significant replication and extension, both locally and regionally, especially in the Poland and Mexico projects.
- Capacity development, particularly in Mexico and Jamaica.
- Consumer benefits through cost savings and improved product quality.
- Improved opportunities for manufacturers, distributors, and retailers of energy-efficient equipment in Poland and Thailand.
- Some impact on the integration of energy efficiency objectives and mainstreaming of global environmental issues into energy policies. For example, in Jamaica the government's most recent energy policy incorporates lessons from the demand-side management project, and in Thailand the Demand-Side Management Unit became fully integrated into the utility.

#### BOX 4

### Transforming renewable energy markets in Bangladesh and Sri Lanka

In Bangladesh and Sri Lanka private companies and cooperatives have been revolutionizing rural electrification through renewable energy projects. Three of these firms have won the Ashden Award for Sustainable Energy. Two of them—Grameen Shakti, a microfinance institution, and Rahimafrooz Batteries Ltd., a family firm—are in Bangladesh; the third, Sarvodaya Economic Enterprise Development Services (SEEDS) Ltd., is in Sri Lanka.

Projects such as these signal a recognition that state-owned utilities often cannot meet the needs and aspirations of rural people for clean, affordable energy. In Bangladesh 75 percent of all households, and almost all rural households, lack electricity.

Through the WBG–GEF project, administered by the Infrastructure Development Company Ltd., Grameen Shakti has installed some 65,000 solar home systems, and Rahimafrooz has installed another 25,000. The project promotes solar energy development in rural areas through such channels as rural electricity cooperatives, community-based organizations, nongovernmental organizations, microfinance institutions, and the private sector.

In Sri Lanka over two thirds of the solar home system units have been installed through the WBG–GEF Energy Services Delivery Project (ESDP) and the Renewable Energy for Rural Economic Development (RERED) Project. Well over a quarter million Sri Lankans have affordable, environmentally friendly electricity, from solar home systems or from village-level hydropower schemes, thanks to ESDP and RERED. The projects have included introduction of technical specifications and service standards as a basis for consumer education and protection, wide-ranging awareness programs, the contributions of microfinance providers, and the establishment of a Solar Industries Association.

Both countries now have thriving clean-energy industries, complete with credit arrangements supported by the banking sector. Private firms, from small village-level cooperatives to multinational corporations, have played a role in this transformation.



A number of WBG–GEF projects have helped remove one or more of these barriers, in some cases with highly significant results. One example is the IFC-supported Poland Efficient Lighting Project mentioned in box 3. This project, which introduced compact fluorescent lamps (CFLs) into the Polish marketplace in the mid-1990s, is one of the most remarkable examples of the impact that removal of the awareness barrier can have. The transformation of the CFL market can be traced in media descriptions of CFLs in 1995 as “new,” in 1996 as an “expensive but viable” option for Polish households, and in 1997 as a “popular” form of lighting with many benefits at the level of the household, the country, and the global environment. Box 4 describes how WBG–GEF projects stimulated the renewable energy market in Bangladesh and Sri Lanka.



### *Energy efficiency and renewable energy in China*

China, home to 21.5 percent of the earth's inhabitants and consumer of 11 percent of its energy, is using increasingly more energy as its economy expands. Moreover, it still uses coal for over two thirds of its energy production. It is the world's second-largest energy consumer and the second-largest greenhouse gas emitter. The world therefore has a stake in China's determination to keep clean energy development as a priority of its energy program.

China also has critical local environmental problems:

- Of the 10 Asian cities with the worst air pollution, all 10 are Chinese, and of the 10 worst cities worldwide, 5 are in China.
- Coal combustion causes about 150,000 premature deaths annually. Chronic lung diseases are a leading cause of death among city dwellers.
- Dependence on fuelwood leads to deforestation, soil erosion, and floods in rural China.

A number of WBG–GEF projects have been promoting renewable energy and energy efficiency while mobilizing the private sector in support of environmental initiatives. For example, the China Energy Conservation Project, the second phase of which is expected to end in December 2009, is making a significant difference in the development of an energy service company (ESCO) industry and in the willingness of banks to support ESCOs. These companies, known in China as energy management companies (EMCs), help firms, individuals, and agencies reduce their energy consumption. EMCs earn their profits in the form of a percentage of the savings in their clients' energy bills. The project is helping Chinese banks increase both their willingness and their capacity to process and issue loans in support of the EMC business and is catalyzing the establishment of new EMCs throughout China. The two phases of the project involve an investment of about \$48 million in grants from the GEF. Significant amounts of additional resources are provided by the Bank and other entities.

The Bank is already working on the design of a new project that, if approved and implemented, could represent a major strategic link between where China is now and where it wants to go in terms of energy efficiency. Where the two phases of the China Energy Conservation project targeted small and medium-size commercial and industrial enterprises, this new initiative, the China Energy Efficiency Financing Project, would help and encourage financial institutions to fund energy-saving interventions in iron and steel, building materials, petrochemicals, and other large, energy-intensive industrial sectors.

The proposed GEF investment in this project would likely be \$13.5 million, but project cofinancing is expected to include \$200 million in loans from IBRD and as much as \$600 million in additional resources from domestic banks. If these figures hold, the project will represent a total investment of over \$800 million. This would mean about \$60 in additional funds for every \$1 of GEF input.

The Beijing Second Environment Project illustrates market transformation at an industrial level. Under this project, some 440 coal-fired boilers—about 40 percent of all the coal-fired boilers in Beijing—were converted to gas. This had a tremendous impact on the market; the cost of gas boilers dropped by 50 percent. It also had a major effect on the environment, significantly reducing the emission of greenhouse gases into the atmosphere.

Nevertheless, coal-fired industrial boilers still account for about 80 percent of all industrial boilers in the country and will remain a fact of economic life in China for years to come. For this reason, and because emissions from such boilers are the primary source of China's urban air pollution, the World Bank Group and the Chinese government developed a project, to be cofinanced by the GEF, designed to make coal-fired industrial boilers as efficient as possible. Through the Efficient Industrial Boilers Project, nine manufacturers of coal-fired boilers—seven of which were joint-stock or privately owned companies by the end of the project—used international technology to develop energy-efficient boilers suited to the Chinese market. Both the improved design and manufacture and the training and other technical assistance aspects of the project led to fuel and cost savings. Through just one technological development in one of the nine factories, 25 percent of all the new chain grate capacity sold in China in 2004 was likely to be from the manufacturers supported by this WBG-GEF project. It was estimated that these grates would improve thermal efficiency significantly, by 3 to 4 percentage points, in the boilers in which they were installed.

New or improved technical standards resulting from the project have raised the bar for design and engineering of industrial boilers throughout China. The Chinese government says that this WBG-GEF project has provided unprecedented support to the country's industrial boiler sector and will have a lasting effect on sustainable development in China. And because China exports coal-fired boilers, the impact of this project can extend to other countries, in West Asia, Eastern Europe, and Latin America.

The recent China Utility-Based Energy Efficiency Finance Program brings together for the first time three key players—commercial banks, utility companies, and suppliers of energy-efficient

equipment—to create a new model for the promotion of energy efficiency. Through this project, which includes a \$17 million GEF grant, the IFC is providing \$25 million of risk sharing to enable China's Industrial Bank to establish a \$58 million portfolio to provide loans to small and medium-size energy users. The GEF grant and the IFC guarantee, together with a grant from the Finnish Ministry of Trade and Industry, are expected to lead to more than \$150 million in investments for energy efficiency projects and equipment.

Through another initiative, the China Renewable Energy Scale-up Program (CRESP), the WBG–GEF Program supports China's efforts to commercialize and scale up the development of renewable energy. Preparatory work during CRESP's phase 1 project led to the enactment of a Renewable Energy Law which set mandatory renewable energy generation targets for each province and so brought China into line with the practice in most countries that have large renewable energy programs. The law also allows provinces to pass on to consumers the cost of meeting the targets and gives renewable energy producers the right to sell energy to the power grid.

Another catalytic effect of the project has been the mobilization of \$273 million in investments in renewable energy projects. Most of these investments come from state enterprises, but about \$70 million emanates from private sources. In the years ahead, associated investments resulting from this program are expected to reach billions of dollars.

Meanwhile, because high production costs are a major challenge for the renewable energy industry, CRESP promotes the transfer of technologies for renewable energy generation to private companies to improve their capacity to compete against traditional energy sources. To encourage private investment in renewable energy, the project funds resource assessment and preinvestment studies in the renewable energy sector. CRESP includes components to facilitate improvements in the country's wind and biomass technologies.

The Renewable Energy Development Project is supporting the sale of 400,000 photovoltaic systems, representing 10 peak megawatts (MWp), to individuals and families in western China. These systems are sold entirely by private dealers. The WBG–GEF project provides a small subsidy, but most of the cost is borne by the purchasers from their own resources. By April 2006, these transactions represented about \$43 million in investments by individuals and families. In addition, purchases of photovoltaic systems not qualified for subsidies under the project but resulting indirectly from its existence and its demonstrated success amounted to an estimated \$20 million.

### *Bringing the banks on board*

As the examples from China and from Brazil and India (box 5) demonstrate, increasingly, with the removal of financial barriers through the transformation of financial markets, Bank-GEF efforts are proving that banking sectors in the developing world can be enticed to add environmental projects to their portfolios. In fact, these interventions are fast changing the way financial institutions in developing countries do business. Mobilizing the support of the banks in this way has been challenging, even in those developing countries where banks have enormous financial resources. There are several reasons for this:

<<Box 5 about here>>

- These financial institutions have tended to regard environmental investments as peculiarly and unduly risky.
- They have lacked the capacity to evaluate environmental projects.
- Project proponents themselves have lacked the ability to develop robust, convincing, “bankable” projects.

These were exactly the factors that prevented domestic institutions from financing projects designed to meet Hungary’s need for a more efficient energy supply in the mid-1990s. Then, the Hungary Energy Efficiency Co-Financing Program (HEECP) changed the situation among banks from one of shared reluctance to one of intense competition.

The HEECP, implemented by the IFC and using small amounts of GEF grant money, dealt with the lack of capacity by providing training both to financial institutions and to project developers. The project addressed the risk problem by providing partial guarantees—then a new concept within the GEF fold—to help financial institutions feel more comfortable in lending for energy efficiency undertakings. Seven financial institutions, representing 95 percent of lending market assets in Hungary, were engaged in the HEECP experiment.

### **BOX 5** **Energy advances in India and Brazil**

India and Brazil, like China, have tremendous potential for the development of renewable energy and for increased energy efficiency. And, as in China, WBG–GEF projects are contributing to the growing willingness of banks to lend for environmentally friendly energy investments.

In India’s \$3 billion-plus energy efficiency market, five banks, representing 35 percent of total bank assets, have created special new programs for energy efficiency lending. In Brazil banks are slowly but steadily developing new financial products and policies that could be favorable to borrowers in the energy efficiency market.

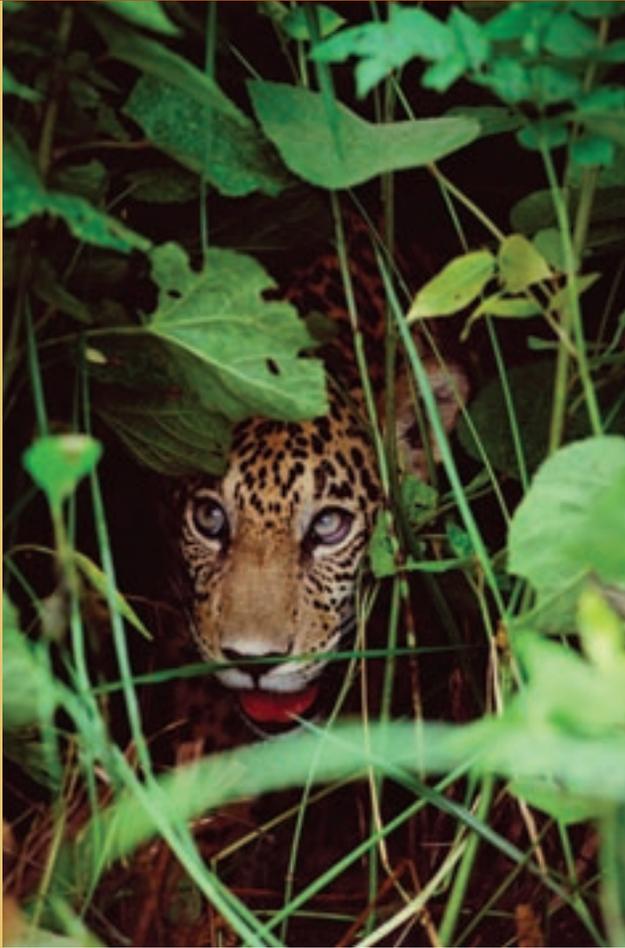


This project has satisfied all the tests of a successful intervention of this kind. It has proved to be sustainable, with a long-term impact on the behavior of both lenders and borrowers. It has produced evidence of replication—among Hungarian private companies not part of the project, in China, and in the Russian Federation and other East European countries. It has yielded tremendous leverage, stimulating commercial lending that is equivalent to at least 20 times the amount of project funds and possibly much more. Finally, it is innovative and efficient, leading to the introduction and diffusion of the most up-to-date energy-saving technology and management techniques that the private sector can provide.

### *How much would you pay for a tree you couldn't cut down?*

The WBG–GEF Costa Rica Ecomarkets Project is helping interested groups and individuals around the world answer the question about the value that can be placed on a tree that remains standing in the forest. Equally important, it helps answer the question, who pays?

Although in theory the standing tree has long been acknowledged to have medicinal, culinary, cultural, recreational, and even spiritual value, it has tended to be assigned monetary value only after it is felled. Countries such as Costa Rica have suffered severe environmental damage because of this worldview. Between the 1940s and the mid-1990s, forest cover in the Costa Rican landmass



declined from 50 percent to only 25 percent, and Costa Rica developed a reputation as having one of the world's highest deforestation rates.

Yet by the beginning of this century, the country's forests were gaining more than they were losing. This reversal could be explained in part by an innovative program of payments for environmental services, Pago por Servicios Ambientales (PSA). During the past decade this program, supported by the WBG–GEF Ecomarkets Project, has promoted forest conservation on privately owned land in priority watersheds and key areas in the Costa Rican section of the Mesoamerican Biological Corridor. Thanks to a number of national initiatives,

including the PSA, between the mid-1990s and 2003 forest cover nearly doubled, to 47 percent—almost back to the 1940s figure.

The project has helped encourage forest owners to keep their trees standing by rewarding them for the benefits provided by a healthy forest, such as hydrological services, soil stabilization, and scenic beauty. These services underpin a booming ecotourism industry that is believed to be Costa Rica's largest net foreign exchange earner.

The business community plays a small but increasingly important role in the Ecomarkets project. About 60 percent of Costa Rican forests are privately owned. FONAFIFO, the PSA program's implementing agency, has entered into contracts with 17 different water users, from hydropower producers and a beer and aerated beverage bottler to agribusiness and tourism ventures. The users pay the PSA program to conserve watersheds from which they draw their water. The earliest contracts, which were signed with private hydropower companies, have been renewed, demonstrating that the contracts are sustainable if the agreed services are delivered.

Current contracts provide funding for a total of about 18,000 hectares; this, however, is less than 10 percent of the total area covered by the PSA program. Much remains to be done to involve the

private sector in these kinds of transaction and to close the gap between what is profitable for the individual and what is consistent with the good of society. This is a conversation—and a conversation—in which the private sector has a huge part to play.

Meanwhile, Costa Rica is considered the leader in this new movement of payment for environmental services, and the WBG–GEF project has contributed to the positive worldwide repercussions of the movement. Bank projects in Ecuador, El Salvador, Mexico, and Panama, together with a new project in Costa Rica itself, have been modeled on the original one in Costa Rica. The Bank and the GEF have shared at international forums the Costa Rican experience with payment for environmental services.

### **Finding the big money**

The availability of GEF grants helps catalyze support for WBG–GEF projects from other multilateral donors, as well as from bilateral sources. The GEF grant component in a WBG–GEF project provides both the seed money that makes it possible to take risks and the means of leveraging additional funds from the Bank itself and from other sources.

Increasingly, the World Bank Group is realizing that small, boutique-type projects cannot fix the larger environmental problems facing the global commons today. Although small projects are appropriate in some circumstances, there are cases that require nothing short of an enormous mobilization of resources. The World Bank Group, building on its experience with investments in major transboundary initiatives, has accordingly been evolving toward more programmatic approaches that often involve several countries and toward the mobilization of large amounts of money (see box 6 for an example).

At the Fifth World Parks Congress, held in September 2003, it was suggested that \$23 billion would be needed annually for the next decade just to establish and manage a representative global network of protected areas. According to “Clean Energy and Development: Towards an Investment Framework”—the World Bank Group’s response to the 2005 Gleneagles communiqué of the Group of Eight industrial nations on climate change—“The incremental cost of mitigating greenhouse gas emissions is estimated to range from less than \$10 billion per year to about \$200 billion per year” (World Bank 2006). International Energy Agency estimates suggest that meeting the energy needs of developing and transition economies may require \$300 billion a year in capital investments, or a total of \$8.1 trillion, between 2003 and 2030.

## **BOX 6**

### **TerrAfrica and the Strategic Investment Program for Sustainable Land Management**

By 2025, Sub-Saharan Africa may have lost two thirds of its arable land. Land degradation is already undermining key ecosystem services, as well as causing losses of about 3 percent of agricultural gross domestic product (GDP) each year. In 2005 TerrAfrica, a dedicated programmatic partnership, was launched with the aim of working continent-wide and at all levels to stop such damage. TerrAfrica is the largest partnership of its kind that is designed to address the problem of land degradation and that focuses on Africa. Participants include the World Bank Group, the GEF, development banks, bilateral aid agencies, other international organizations, and governments.\*

TerrAfrica's three main pillars are investment, coalition and advocacy, and targeted knowledge. The partnership concentrates specifically on improving, under African leadership, the governance required for sustainable land management. TerrAfrica's partners believe that the alliance, together with improved alignment and harmonization, is what is needed to facilitate the scale-up of the effectiveness and efficacy of collective efforts so as to make a difference both to the global environment and to people's livelihoods.

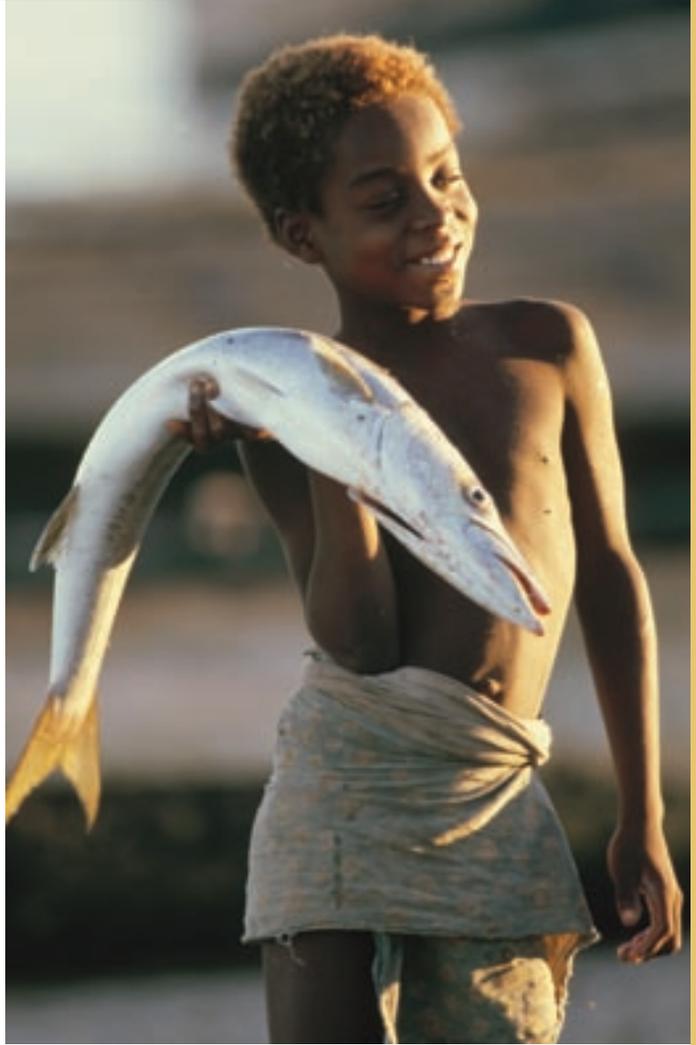
\* Among the key partners are the New Partnership for Africa's Development (NEPAD), the United Nations Convention to Combat Desertification (UNCCD), the European Union, the governments of France and Norway, the International Fund for Agricultural Development (IFAD), the African Development Bank, the United Nations Environment Programme (UNEP), the United Nations Development Programme (UNDP), and the Food and Agriculture Organization of the United Nations (FAO).

The China initiatives discussed above illustrate that it is possible to mobilize these large sums. It was shown, for example, that each dollar of GEF financing in the China Energy Efficiency Financing Project was likely to bring in \$60 of funds from other sources (principally, the World Bank Group and local financial institutions); that the CRESF renewable energy project has already produced nearly \$300 million in investments; and that CRESF is likely to lead, directly or indirectly, to billions in investments in the years ahead.

Part of the strength that the World Bank Group brings to the table is precisely this capacity to effect high levels of resource mobilization. The World Bank Group is especially well placed to help because of its convening power—its ability to procure support and involvement—and the volume of resources that it can provide. A number of other factors add to the World Bank Group's capacity to bring or attract impressive amounts of cofinancing. These include the World Bank Group's experience in working with the private sector, its strong system of governance, and its high standards of fiduciary responsibility.

### *Fisheries development: Getting it right*

Some of these elements come into play in the Strategic Partnership for a Sustainable Fisheries Investment Fund in the Large Marine Ecosystems of Sub-Saharan Africa. In a way, the story behind this partnership goes back to the 1970s and 1980s, when the World Bank Group, like other donors, supported projects intended to maximize fishing and provide cheap, nutritious protein for African populations. Excess capacity and overfishing were among the unfortunate side-effects of those laudable initiatives. Donors, “once bitten, twice shy,” tended for a while to stay away from fisheries investments in Africa and elsewhere. In 2002, however, the World Summit on Sustainable Development in Johannesburg established clear targets for the sustainable governance and management of fisheries in Africa.



A World Bank paper issued in 2004, “Saving Fish and Fishers: Toward Sustainable and Equitable Governance of the Global Fishing Sector,” was frank in its characterization of the past. It also showed, implicitly and explicitly, that the Bank and the world in general had begun to learn how to manage fisheries, not only from looking at past failures but also from more recent lessons and successes. Examples of these successes include increased catch per person following comanagement arrangements (Samoa); stock recovery and more fisheries jobs resulting from clearer long-term vision and provision for industry involvement in developing regulations (Namibia); expected increases in yields and in export values following more clearly defined cost-recovery arrangements (New Zealand); and larger catches for the same level of effort (Iceland).

The World Bank paper made it clear that the solution would not be cheap. The authors calculated that instituting about 20 major fishery reform efforts, at the national level in some cases and at a regional level in others, “would require an investment of about \$1.5 billion to \$2 billion.” In fact,

just this single Sub-Saharan African initiative is likely to involve an investment of a quarter billion dollars. The fisheries fund will receive \$60 million in GEF grants but is expected to obtain cofunding of at least \$3 for every GEF dollar, for a total investment of \$240 million.

The funds will be used to finance about 10 to 12 projects. The broad aims of this 10-year effort are:

- Sustainable use of fisheries resources in at least 10 countries bordering on the region's large marine ecosystems
- Poverty alleviation and the reduction of vulnerability in coastal and fishing communities in at least 10 countries in the region.

### *Cooperating to heal sick waters*

One reason why large sums are needed to deal with environmental problems is that these problems often cross national boundaries, and solutions must be crafted accordingly. An example of a transboundary effort in pursuit of a shared environmental objective is what is being done to heal the waters of the Black Sea and the Danube River.

The Black Sea/Danube Strategic Partnership, a multiagency effort that involves peoples, governments, and other actors in the region, has two ambitious goals. One is to restore the Black Sea to its earlier, cleaner condition. The other is to help the famous and once-revered “Blue Danube,” which now shows a mix of hues ranging from crystal blue to grayish green to murky brown, recover its former splendor.

The disappearance of plants, animals, and their habitats, the destruction of once thriving fisheries, and the loss of economic and other values are among the challenges facing the Black Sea region, home to about 160 million people. The Black Sea has been the victim of eutrophication—an excessive flow of nutrients, varying from fertilizers leached from farms to waste from slaughterhouses and other agroindustrial enterprises. In addition, the area's tourist potential, its aquaculture, and the health of its inhabitants have been affected by insufficiently treated sewage flowing into the Danube and other rivers that empty into the Black Sea. Other problems have included oil spills and the introduction, usually unintentional, of invasive alien species that thrive on the very excess nutrients that kill native animals and destroy fisheries.

Massive resources are needed to meet the Danube and Black Sea objectives. The Bank's particular responsibility is the World Bank Investment Fund for Nutrient Reduction. The \$83 million GEF grant to this fund has been supplemented by \$496 million in IBRD loans and other cofinancing inputs, for a total of \$579 million. If investments and commitments related to projects outside the GEF framework are taken into account, the figure is closer to \$3 billion. The fund will support three main kinds of activity: agricultural projects to prevent eutrophication, projects to reduce the flow of industrial waste into the waterways, and projects to protect and restore wetlands to serve as filters.

The bringing together of countries, agencies, and resources in new, flexible, and creative ways is what makes the Black Sea/Danube Strategic Partnership such a powerful symbol and a model for cooperation in tackling the larger environmental challenges facing the world. The \$80 million Land-based Pollution Reduction Partnership in East Asia and the \$85 million Mediterranean Sea Partnership are among those modeled on the Black Sea–Danube experience, and the Sub-Saharan Africa fisheries partnership discussed above also draws on that initiative.

### **Governance: An inevitable benefit of environmental cooperation?**

An almost inevitable—if often unintended—benefit of many WBG–GEF projects has been improved governance. This silent contribution, which includes such keys to environmental governance as participation, accountability, transparency, and effectiveness, is being increasingly recognized. Since 1992, 22 percent of Bank-GEF projects (amounting to \$380 million, or 14 percent of grant commitments) have described public administration, law, and justice as their major sector.

These figures, though, tell only part of the story. In a sense, every WBG–GEF project includes an element of governance, if only at the level of the project itself; that is, the Bank endeavors to ascertain that the legal, regulatory, and accountability elements needed to ensure effective implementation



are present. The contribution by projects to improved governance is also manifest at other levels. Examples include

- Institutional strengthening that goes beyond project implementation and that, if successful, continues to serve the interests of environmental protection and enhancement even after the project ends
- Improved human rights, property rights, and ownership arrangements, which in some cases are a requirement for meaningful environmental efforts
- New or improved modalities for regional and international cooperation
- Improved systems and capacities to give meaning to commitments under international law as it relates to the environment.

### *Strengthening institutions by involving communities*

With more than 17,000 islands and a coastline of 81,000 kilometers, Indonesia is the world's largest archipelago. It possesses a marine environment that is host to some 2,000 species of fish and is acknowledged as one of the richest in the world. Its coral reefs represent an important dietary and economic resource for about 67,500 coastal villages.

For a long time, however, the coral reefs have been threatened by unsustainable fishing methods, including poison and blast fishing, and by pollution and sedimentation. It was evident that to overcome this critical problem, an array of managerial, institutional, policy, legal, and information and communication problems would have to be addressed. Destroyers of the country's precious but fragile marine environment were able to take advantage of legal loopholes, an unclear division of labor among levels of government, and lack of capacity to enforce even those laws that were clear to all.

The strategy for managing and policing the country's far-flung coastline that was selected by the government was community-based management (CBM). This had to be backed up by a framework founded on

- A national strategy for coral reef management
- Secure user rights for coastal communities
- Effective enforcement of the laws to protect these communities from external threats
- Greater awareness among decision makers of the threats to the country's reefs
- Increased management capacity.

The Coral Reef Rehabilitation and Management Project (COREMAP), launched in 1998 as a 15-year program, was designed to respond to the threats and the requirements for action. The project has had some notable achievements in the area of governance:

- At the national level, the strengthening of the legal framework for the management of the coral reefs through the preparation of legal papers and drafting of much-needed legislation.
- At the district level, stricter and better-coordinated enforcement of regulations relating to fisheries and coastal management. This included the development of coral reef management plans (CRMPs), with clearly identified sanctuaries or no-take zones and provision for community-based “reef watchers” who monitor fishing activities and whose work has led to a number of arrests.
- Greater security for the rights of coastal communities.
- The involvement of local NGOs and community groups in the design and implementation of the CRMPs.
- Greater sensitivity to the environmental fragility of the coastal ecosystem, as demonstrated, for example, by the decision to abandon a plan to establish an oil refinery on Selayar, about 50 miles from the Taka Bone Rate National Park.

These initiatives are expected to yield extremely high economic rates of return in addition to actual and expected environmental benefits. For Indonesia, healthy coral reefs mean more sustainable fisheries, less expenditure on erosion control, and benefits in terms of tourism and recreation.



### *Involving the people in protection*

The India Ecodevelopment Project (IEDP) demonstrates how governance that involves and protects people operating in fragile environments is far more effective than the more archaic approach which merely protects the environment from the people.

India is a “megadiversity” country—one of the 12 that collectively contain up to 70 percent of earth’s biodiversity. About 6 percent of all flowering plant species, 14 percent of all birds, and 81,000 identified species of animals call India home, and many of them exist nowhere else. Concern with the need to preserve this rich biodiversity explains why India’s protected areas grew from 10 parks and 127 sanctuaries in 1970 to 75 parks and 421 sanctuaries less than 25 years later.

As these numbers increased, so did the need to decide whether to focus entirely on enforcement or to blend enforcement with involvement. India has chosen the approach of greater community participation in forest management. Moreover, it has embraced the eco-development conservation strategy, which deals both with how local populations affect protected areas and with how protected areas affect the local population.

The IEDP uses this symmetrical and collaborative approach to improve environmental protection in seven different protected areas. To achieve this purpose, it combines the resources of the community; the protected areas administration; local, regional, and central governments; and—through the World Bank Group, the GEF, and others—the international community. The project has discovered innovative ways of strengthening the involvement of local and indigenous people in the conservation and sustainable management of the forest.

There are numerous examples of the effectiveness of this initiative:

- Ecosystems management within the protected areas has improved, resulting in increased sightings of certain endangered species.
- Tribal groups who had previously sold their agriculture produce at giveaway prices to pay the exorbitant rates charged by moneylenders have been empowered to improve their financial and economic standing. As a result, they have become protectors rather than poachers of forest resources. In Palamau 90 percent of the poor and the landless found employment on the project.
- Improved water management in Buxa in West Bengal has meant that people who had struggled to raise a single crop now get two crops a year and are no longer forced to put pressure on Buxa National Park.



- Gir National Park in Gujarat, known as the last bastion of the Asiatic lion, has developed best practices in nature education, including the establishment of resource centers in local schools.
- A significant number of youths have abandoned violence and extortion to pursue sustainable and environmentally friendly income-generating activities.
- Ecotours, which offer job opportunities, and grain banks, which provide food security, are among the useful innovations resulting from the project.
- An action plan to manage the annual trek by some 4 million pilgrims to the especially holy Hindu temple at Sabarimala in the state of Kerala has minimized the distress usually visited on the local environment each year. For example, since trees can no longer be cut to build new stalls for vendors, existing facilities are used, saving up to 200,000 young forest trees in a single year.
- States have issued specific legal instruments, usually in the form of government orders, and have introduced policy changes to facilitate the ecodevelopment model.
- Relations between forest departments and local communities have been transformed from conflict to cooperation and collaboration. Evidence of increased community engagement includes the formation during the life of the project of more than 580 ecodevelopment committees involving over 75,000 households around the seven protected areas.
- Two-way communication approaches have enhanced and facilitated the spirit of cooperation. These approaches have helped embed in the minds of the local communities that their welfare, and not only that of plants and animals, is important to the managers of the protected areas.
- Women have become empowered and have actively participated in the IEDP.



### *Joining hands across the lake*

In recent decades, concern about the environmental degradation of shared water bodies has been a particularly strong motivator for cooperation among neighboring countries. The WBG–GEF Program has often been instrumental in facilitating such cooperation.

Two neighbors in the Balkans provide an example. In the late 1990s the former Yugoslav Republic of Macedonia had just achieved independence, and Albania was emerging from around 40 years of political isolation. Apart from the geographic, ethnic, and other motives for cooperation, there was an environmental imperative—the need to maintain the long-term ecological stability of a shared resource, Lake Ohrid.

Regarded as one of the world’s oldest lakes, Lake Ohrid was unique in that it had not been greatly degraded. It was one of Europe’s largest biological reserves and the home of flora and fauna that were extinct elsewhere. Because of the age of the lake, many of its aquatic species, including more than half of its 17 fish species, could be found nowhere else. Indeed, five particular endemic species could only be found in small areas within the lake. These and other aspects of Lake Ohrid’s historical and biological richness led the United Nations Educational, Scientific, and Cultural Organization (UNESCO) to list it as a World Cultural and Natural Heritage Site in 1980.

By the late 1990s, however, Lake Ohrid was in danger of losing its relatively pristine quality. Better environmental management was needed to prevent the accumulation of pollutants, both in the catchment area and on the shoreline. The level of industrial pollution was low (owing to a low level of industrial activity), but there was increasing pollution from such sources as erosion and agricultural runoff. Only about a quarter of the wastewater in the catchment was treated. Early action to stave off disaster was necessary, since the lake’s small inflow and outflow meant that its water was exchanged only once every six decades or so.

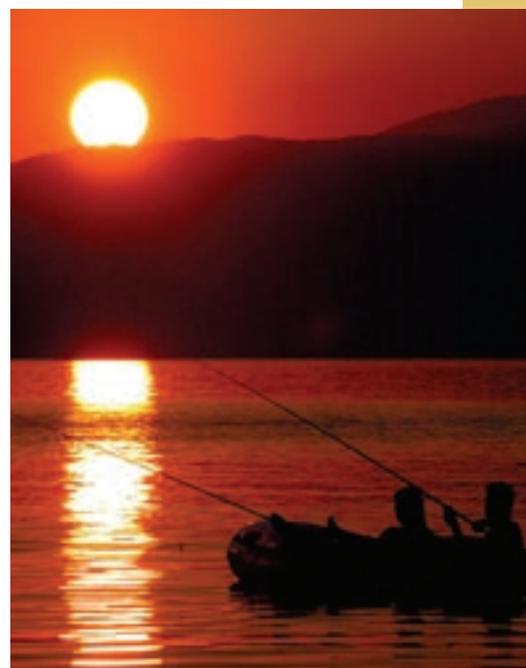
This shared problem facing FYR Macedonia and Albania at the moment of their readiness for active participation within the community of nations also represented an opportunity for cooperation between them. The WBG–GEF Lake Ohrid Conservation Project became the first GEF project between the two countries and the first GEF project of its kind in Central and Eastern Europe.

As both governments acknowledged, the lake was oblivious to national borders. Therefore, an important component of the Lake Ohrid Conservation project was the establishment of institutions for transborder cooperation at the policy, administrative, and technical levels. According to the project document, “The primary benefit of the Project would be the protection of the Lake Ohrid basin by establishing an effective international framework for long-term basin management, and by undertaking some priority actions to control the major sources of pollution and watershed degradation.” The document added that the project “would afford the first real opportunity for cooperation in management of natural resources and investment planning between the two countries.”

Even before the start of the project, the World Bank Group had supported the establishment of the Lake Ohrid Management Board (LOMB), composed of high-level national and local officials, which became a key institution in the success of the project.

The Bank helped not only with financial resources but also by promoting and facilitating much-needed dialogue between the countries. The project itself fostered ongoing transborder dialogue at all levels—among citizens, municipal authorities, NGOs, farmers, fishers, and private enterprise. The involvement of such groups in designing a watershed action plan was considered a prerequisite for broad support for the plan.

The governance dimension of the project included the strengthening of the capacity of public officials to ensure enforcement of the countries’ respective environmental laws, regulations, standards, and policies. The project also called for the establishment of a comprehensive and effective system for monitoring the lake’s ecosystem and water quality, as well as its water sources, to evaluate the success of management actions and the need for future measures.



A World Bank Independent Evaluation Group (IEG) review found that the project had “successfully launched a proactive international lake management program.” The IEG referred in particular to the “close working relationship” forged between the two countries for the management of lake, national, and transborder monitoring institutions; the signing and ratification of a treaty to provide a legal framework for joint management of the lake; the preparation of the Transboundary Watershed Action Plan; the “participatory implementation at grassroots level”; and the promotion of a “high level of public awareness and support.”

## Concluding thoughts: What does the future hold?

If the first 15 years of the WBG–GEF Program have been interesting, the next 15 years have the potential to be exciting. Greater synergy and more strategic approaches are likely to be among the hallmarks of the period ahead. The next few years will see, for example, greater efforts to incorporate into the program the goal of the Bank’s overall Environment Strategy: “to promote environmental improvements as a fundamental element of development and poverty-reduction strategies and actions.”

This convergence between conservation and development will include continued efforts to mainstream biodiversity and other environmental concerns into overall policy. Climate change efforts will continue to take advantage, for example, of the ability of well-designed projects to reduce greenhouse gas emissions and improve local air quality while meeting local and national energy needs. Efforts to prevent the spread of invasive alien species and reduce their numbers and to promote more sustainable land management—both areas of increasing concern—will, by their very nature, support poverty alleviation at the local level while improving environmental protection at the regional and global levels.

The period ahead also promises enhanced partnership. As the GEF builds on its experience of working with the private sector, the WBG–GEF Program will naturally be expected to play a major role.

Although in some ways the next 15 years will be a time of change, some features will remain constant. Among these are the promotion of both global benefits and local livelihoods; the emphasis on such issues as biodiversity, climate change, international waters, and land degradation; and the use of financial leverage and international cooperation to mobilize the large volume of resources needed to meet the environmental challenges facing humanity today.





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