

# Environment matters

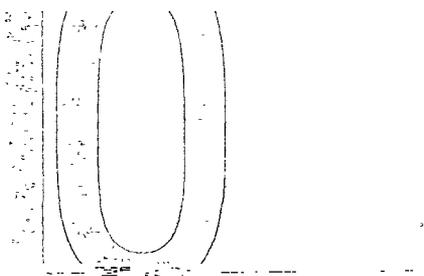
Annual Review

AT THE WORLD BANK

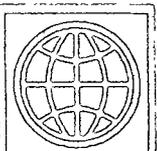
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toward environmentally and socially sustainable development • 2002



ABOUT  
THE WORLD  
BANK



1. *The World Bank is the world's largest external funder of education.* Since its education funding first began in 1963, the World Bank has provided over \$30 billion in loans and credits, and it currently finances 164 projects in 82 countries.
2. *The World Bank is the world's largest external funder in the fight against HIV/AIDS.* The World Bank—a cosponsor of UNAIDS, whose mission is to lead an expanded global response to the epidemic—has committed more than \$1.7 billion to combating the spread of HIV/AIDS around the world, and has pledged that no country with an effective HIV/AIDS-fighting strategy in place will go without funding.
3. *The World Bank is the world's largest external funder of health programs.* The World Bank commits an average of \$1.3 billion in new lending each year for health, nutrition, and population projects in the developing world. Bank funds are helping to combat malaria in 46 countries and tuberculosis in another 25.
4. *The World Bank strongly supports debt relief.* Today, 23 of the world's poorest countries are receiving debt relief projected to amount to \$34 billion over time.
5. *The World Bank is one of the world's largest international funders of biodiversity projects.* Biodiversity conservation is a high priority for the World Bank because even though biodiversity loss is a global concern, the greatest costs are felt by rural people in developing countries—who are most dependent on it for food, shelter, medicine, income, employment, and cultural identity.
6. *The World Bank works in partnership more than ever before.* During the past five years, the World Bank has joined a large array of partners in the global fight against poverty. For example, the Bank works with the World Wildlife Fund to protect forests, and with the public and private sectors to launch the Prototype Carbon Fund to help reduce the effects of global warming.
7. *The World Bank is a leader in the fight against corruption worldwide.* Since 1996, the Bank has launched more than 600 anticorruption programs and governance initiatives in almost 100 client countries.
8. *Civil society plays an ever larger role in the Bank's work.* Nearly 70 percent of projects approved by the Bank during the past fiscal year involved the participation of nongovernmental organizations (NGOs), and all of the Bank's country assistance strategies benefited from NGO consultations.
9. *The World Bank helps countries emerging from conflict.* The Bank currently works in 35 conflict-affected countries supporting international efforts to break cycles of conflict and assist war-torn populations to resume peaceful development.
10. *The World Bank is listening to the voices of poor people.* Today the Bank has over \$1.5 billion in commitments for community-driven development projects.



## BUILDING A FOUNDATION FOR GLOBAL COLLECTIVE ACTION

**O**ver the past year or more, we can see encouraging signs of a growing consensus on a development agenda. It emerged from the Millennium Development Goals defined in the Millennium Summit; the Doha Trade Round; and the agreements on common responsibility and accountability reached in the Monterrey Summit of Financing for Development. At Johannesburg and beyond, there is an opportunity to consolidate this consensus into an agenda for global collective action.

This sustainable development agenda is based on the primacy of country ownership and stewardship for poverty reduction; long-lasting partnerships between the public and the private sectors and with civil society; strong and stable policies and transparent and well-governed institutions; and a vibrant private sector to play a pivotal role in socially responsible technological transformation. Enlightened public policy must provide the enabling and regulatory environment. For the private sector, corporate responsibility together with profits should represent the guiding principle.

The key is achieving sustainable, equitable, long-term economic growth that is both environmentally and socially responsible. For that to happen:

*Developed and developing countries* must affirm their commitment to achieving the Millennium Development Goals by 2015 *in a sustainable manner*. Reaching the goals only to discover that the achievement cannot be sustained would be a tragic waste.

*Developed and developing countries*, the public sector and the private sector, governments and civil society must build the partnerships that will take us beyond 2015 toward a prosperous and sustainable future.

Actions must be taken this decade to lay the foundations that will carry us well into the middle of this century. Global and national policies, investment strategies, and new institutional relationships will need to be developed. In an increasingly interconnected world, the management of fragile ecosystems, transboundary water systems, communicable disease, climate change, and scientific and technological pathways and knowledge systems warrant attention—they will require cooperative action and new institutional relationships.

In an increasingly mobile world, issues of demographic change, migration, social conflict, and social exclusion need to be addressed. Increased attention should be given to global public goods—especially environment and research and development—and to promoting long-term development of social and human capital and social inclusion.

At Johannesburg and beyond, world leaders have a historic opportunity to define a vision of sustainable development and social justice, one that combines actions for the next decade to assertively address poverty and lack of opportunity for poor people, as well as actions that can lay the foundation for future generations to enjoy an era of responsible prosperity shared by all.

James D. Wolfensohn

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**Notes:**

All \$ = U.S. dollars

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# Welcome to *Environment matters.*



**A**t the end of August this year, world leaders will gather in Johannesburg for the World Summit on Sustainable Development to face together the dual challenge of shrinking the ranks of the poor and laying the foundations for a sustainable future.

The scale of this challenge is daunting. In the next decades, our planet is expected to accommodate an additional 2 billion people, almost all of them in developing countries. It must also meet the legitimate aspirations for a better life of the nearly 3 billion impoverished people making less than \$2 per day. A poverty-free, prosperous, and more equitable world will require today's \$30 trillion world economy to quadruple by the middle of the century. To do this and maintain the health of the biosphere that supports us all, we simply cannot rely on current economic patterns. Starting in the rich world, major transformation will be needed to de-couple growth and environmental impacts, radically change the composition of the world's output toward high-input efficiency and environmental responsibility, and redefine consumption patterns.

This edition of *Environment Matters* grapples with these issues. It examines the challenges of equitable development, resource use efficiency, and treating natural capital as a key factor in sustainable development. It looks into the critical building blocks for a more sustainable future and some of the important lessons learned since the 1992 Rio conference. It summarizes the portfolio of Bank projects and initiatives that are contributing to the implementation of our new Environment Strategy, and demonstrates why the environment really does matter if we are to achieve the Millennium Development Goals.

As you read this year's *Environment Matters*, I would challenge you to think of the implications for your own work and lifestyle as we work together to create a more equitable and sustainable world.

  
**Kristalina Georgieva**  
 Director  
 Environment Department

The World Bank Group				
The World Bank		IFC	MIGA	ICSID
IBRD	IDA			
International Bank for Reconstruction and Development	International Development Association	International Finance Corporation	Multilateral Investment Guarantee Agency	International Centre for Settlement of Investment Disputes
Established in 1945 184 countries own, subscribe to its capital	Established in 1960. 162 members	Established in 1956 174 countries	Established in 1988 154 members	Established in 1966 133 members
Lends to creditworthy borrowing countries, based on high real rates of economic return	Lends at a favorable rate to poorer countries with a per capita income in 2000 of less than \$885 and lack the financial ability to borrow from IBRD	Assists economic development by promoting growth in the private sector	Assists economic development through loan guarantees to foreign investors	Provides facilities for the conciliation and arbitration of disputes between member countries and investors who qualify as nationals of other member countries.

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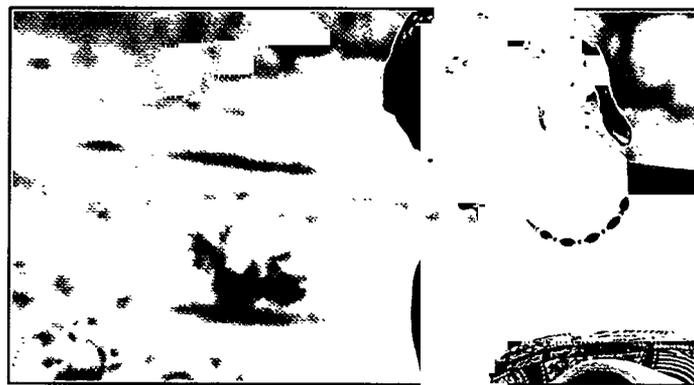
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# NATURAL CAPITALISM

## A New Industrial Revolution for a New Century

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VIEWPOINT by Amory Lovins

Capitalism is the productive use and reinvestment of capital, yet capital comprises not only money and goods, but also people and nature, which are even more valuable. Without “natural capital” there is no life and therefore no economic activity. Nature provides such “ecosystem services” as nutrient cycling, climatic stability, atmospheric composition, and biological productivity. Estimating the correct value of ecosystem services will doubtless be long debated. However, we don’t need to spend decades arguing how much it’s worth before we can use it as *if* it were valuable.

To protect these essential services and to help lift the millions of the world’s poor out of poverty, the new imperative is to use resources such as energy, water, fiber, minerals, and topsoil far more productively. This is not because oil and copper are becoming scarce—powerful extractive technologies keep bringing commodity prices to new lows. Rather, it is to protect the biosphere that sustains life and because such huge gains in resource productivity are highly profitable.

What is proposed is an alternative business model that yields astonishing benefits not only for future generations, but also for today’s shareholders. Its operational principles enable businesses to behave as if they were properly valuing natural capital—and are highly profitable even today, when natural capital is effectively valued as zero. Natural capitalism combines four richly interlaced and mutually reinforcing principles: (1) using resources 10 to 100 times more productively; (2) redesigning production on biological lines (<<[www.bioimicry.net](http://www.bioimicry.net)>>), with closed loops, no waste, and no toxicity; (3) shifting businesses from selling goods to leasing a continuous flow of services; and (4) reinvesting profits to restore, sustain, and expand natural capital.

## Increasing Resource Productivity

The first step is to use resources 10 to 100 times more productively. Only 1 percent of today’s resource flow ends up in durable products. Today’s cars use only 1 percent of their fuel energy to move the driver. Ordinary light bulbs turn only 3

percent of power-plant fuel into light. The U.S. economy wastes at least \$300 billion worth of energy every year, despite past savings of about \$200 billion a year.

Such gross shortfalls are a business opportunity. New design practices can make very large resource savings that cost less than small or no savings. For example:

- DuPont plans in this decade to increase its revenue 6 percent a year without increasing its energy use (by raising its energy productivity at least 6 percent a year); to get a tenth of its energy and a fourth of its raw materials from renewable sources; and to cut its greenhouse gas emissions to 65 percent below the 1990 level—all in the name of shareholder value;
- Ultralight, ultralow-drag, hybrid-electric Hypercars<sup>SM</sup> (<<[www.hypercar.com](http://www.hypercar.com)>>) can provide uncompromised customer attributes and decisive manufacturing advantages while saving 82 percent of their fuel use.

In general, integrative design that optimizes whole systems for multiple benefits, not isolated components for single benefits, can make very large resource savings that cost less than small or no savings: that is, it can make investment in resource efficiency yield not diminishing returns but expanding returns.

## Redesigning Production

The second key principle of natural capitalism is to redesign production on biological lines (<<[www.biomimicry.net](http://www.biomimicry.net)>>), with closed loops, no waste, and no toxicity. This reduces pressure on natural systems, turns wasted materials into inputs for composting or profitable remanufacturing, and often yields superior products at lower costs. For example, when Steelcase asked architect William McDonough and green chemist Dr. Michael Braugart to redesign a textile, they reported that eliminating the toxic 99.5 percent of cloth-treating chemicals yielded a more attractive and durable product and cut its cost, because the process could no longer poison the workers or the neighbors.

## Redesigning the Business Model

Both this biomimicry and advanced resource productivity are rewarded by natural capitalism's third element—a shift of business model from selling goods to leasing a continuous flow of service that meets customers' evolving value needs. For example, in Europe and Asia, Schindler leases vertical transportation services instead of selling elevators. Dow leases dissolving services instead of selling solvents, and Carrier is starting to lease comfort services instead of selling air conditioners. This aligns the interests of providers and customers, *rewarding both for the same thing—doing more and better for longer with less.*

Interface, a \$1.5 billion global firm based in Atlanta, has combined the first three principles of natural capitalism and now gets 27 percent of its operating profit from eliminated waste—\$165 million so far. Its new carpet, Solenium™, contains nothing toxic, is certified climate neutral, doesn't stain or mildew, can be washed with a garden hose, and is five times more durable and 35 percent less material-intensive than normal carpet. Next, Interface is beginning to lease a floor covering service rather than selling carpet, so only the worn one fifth is replaced, not the whole area. This raises the materials savings to 97 percent—and soon to 99.9 percent, because Solenium is designed to be completely remanufacturable into identical products with no loss of quality. Next will come conversion to renewable feedstocks, such as polylactic acid made from corn wastes.

Interface is doing well by doing good. The first four years of its transition to natural capitalism doubled revenue, nearly doubled employment, and tripled operating profit. Imagine how hard it is to compete with such a firm, which uses 97-99.9 percent less raw material and 90 percent less capital to deliver a better service at higher margin and lower costs. In addition, this service comes as a tax-deductible operating lease to the customer. This illustrates the kind of competitive breakthrough—through competitive advantage—that early adopters of natural capitalism are achieving.

## Reinvesting Profits

In the fourth aspect of natural capitalism, prudent capitalists will invest their profits in the most productive way—in restor-

# VIEWPOINT



ing, sustaining, and expanding natural capital to yield more durably abundant biotic resources and ecosystem services. Farmers grow more food with higher profit and lower risk by imitating ecosystem behavior rather than treating soil like dirt. Major companies substitute native prairie grass lawns and biological wastewater treatment for chemical engineering. As more firms model their production processes on and take their feedstocks from natural systems, more will benefit directly from such wise reinvestment in natural capital, and fewer will risk suffering the key business constraint of this new century—nature's falling behind on its deliveries of ecosystem services.

Firms that downsize their unproductive tons, liters, and kilowatt-hours can then provide more and better work for more people. Countries that shift taxation from jobs and income to depletion and pollution will need less tax revenue to repair the damage to both families and nature. Indeed, by applying to a whole city the same integrated design principles and entrepreneurship that natural-capitalist firms apply to their production processes and equipment, the Brazilian city of Curitiba has prospered even as its population quadrupled and tides of poverty lapped around it. Curitiba has built one of the world's great cities—not through wealth but through design, in a brilliant process led by architects and mainly by women.

## Toward a More Sustainable Future

Natural capitalism will subsume industrial capitalism into its new paradigm much as industrial capitalism subsumed agrarianism. This shift will take time. However, it is already accelerating as early adopters gain stunning competitive advantage. As Edgar Woolard remarked when Chairman of DuPont, companies that take such opportunities seriously will do very well. Those that don't, he added, won't be a problem, because they ultimately won't be around.

For more information on the ideas in this article, see Amory Lovins and Paul Hawken's book *Natural Capitalism: Creating the Next Industrial Revolution*, which was published by Earthscan in 1999. See also their website <<[www.natcap.org](http://www.natcap.org)>>.

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*Amory Lovins is a co-founder and co-CEO of the Rocky Mountain Institute, an independent, market-oriented applied research center working mainly with the private sector. His work has been recognized by receipt of the "Alternative Nobel," Nissan, and Mitchell Prizes; the Happold Medal; and the Heinz, World Technology, Lindenberg and "Heroes for the Planet" Awards.*

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# D E V E L O P M E N T

## As If Equity Mattered

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VIEWPOINT by Angela Cropper

The imminent World Summit on Sustainable Development will attempt to assess progress made in advancing along the course of sustainable development. We are likely to hear from the official Summit reports about the considerable progress that has been made, for which conventional measures of economic activity will be tendered as evidence. From the fringe events, we can expect the usual reams of analysis illustrating that no such progress can be claimed, based on a lot of other evidence, and especially on the inadequacy of those conventional measures to tell the real story.

Why is development generally leading to more and not less inequity? In all of this, this question is unlikely to emerge at all, let alone be considered central to the assessment. In sustainable development discourse, equity, whenever mentioned is usually considered in terms of intergenerational equity. We do not pause to assert that the development process should in the first instance have equity as a defining outcome for the present generation. This is a missing dimension in development debate and practice, both internationally and nationally.

Equity is a political notion. It does not lend itself to precise definition or measurement—not unlike democracy or participation, for that matter. It goes beyond the notion of equality or asymmetry of income and wealth distribution. It is concerned with justice; with elimination of discrimination; with securing a voice in institutions; with access to relevant information and political processes; with fair and conscionable enjoyment among all of the benefits from the use of a nation's (or the planet's) resources; and with consciousness of the needs of others.

Equity is more perceptible by its absence in any given relationship or situation—more evident in its breach than in its realization. Indications of inequity abound in all sectors of public activity and in all spheres of human interaction. Equity has to do with powerlessness, and absence of opportunity, including lack of access to political processes and political resources to advance one's cause.

There is some hard evidence that should not be ignored. The World Bank's own figures show that even as worldwide real income is increasing, the gap between richest and poorest is increasing, with 84 percent of the world's population receiving only 16 percent of the world's income. From UNDP's 1999 *Human Development Report*, we learn also that in 1999 more than 80 countries had lower per capita incomes than they had a decade or more before; that during the years 1994-98 the world's 200 richest people more than doubled their net worth, to more than \$1 trillion—the equivalent of the combined annual income of 41 percent of the world's people. And we have long heard that about one-fifth of the world's population earn—and live on—the equivalent of less than \$1 per day.

Concern about equity goes beyond distribution of income and wealth. Those without income or wealth are the same people who are without access to clean drinking water, convenient energy services, health care, basic education, and the foundations for sustaining their livelihoods. Only occasionally do we point out that these same people lack access to public decisionmaking processes and to political resources that are essential for recognition of and attention to the structural and persistent inequity of which they are victims.

# VIEWPOINT

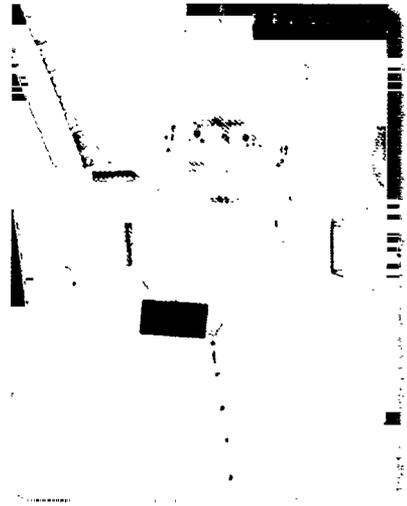
In a recent international conference—the International Conference on Development as if Equity Mattered, held in Georgetown, Guyana in September 2001—participants examined why it is difficult to achieve equity as an outcome of national development planning. They concluded that the most critical issue is lack of local participation and empowerment.

Among countries, a similar pattern of exclusion and vulnerability is evident. Ownership of capital and technology is increasingly being concentrated in the advanced economies. The free flow of goods and services and the competition they bring is undermining and eroding local entrepreneurship, putting many out of business and even more out of employment.

Yet there is no concerted effort or dedicated process to explore and expose the shortcomings of the development process, national and global, and to press for redressing them. Even where conscionable individuals and organizations, motivated by concern about these public interest issues, have called these consequences to attention, the reaction has been to fence them out, instead of acknowledging and working to rectify the limitations in policies and processes.

Why can't international cooperation operate to favor the disdadvantaged, the marginal, the weak, to create opportunity for them to catch up instead of the opposite? Should development not have as its cardinal objective the reduction of inequity? Why can't we make access to education, health, housing, and livelihoods rights-based and not compassion-based? What is it that operates in us to dismiss such questions as naive and idealistic?

Concern about equity provides a practical and powerful focus for both planning and assessing development at all levels. Development that has as a major objective reduction of inequity would require at the national level:



- Evidence-based tools for planning, such as annual household surveys that would empirically measure social vulnerability as well as distribution of benefits of public expenditure at the national level

- A comprehensive, intersectoral, human development strategy that specifies measures for achieving equity in education, equity in health, equity in the labor market, with appropriate attention to gender, ethnic, and minority considerations

- A sound investment strategy for effective use of human and natural resources

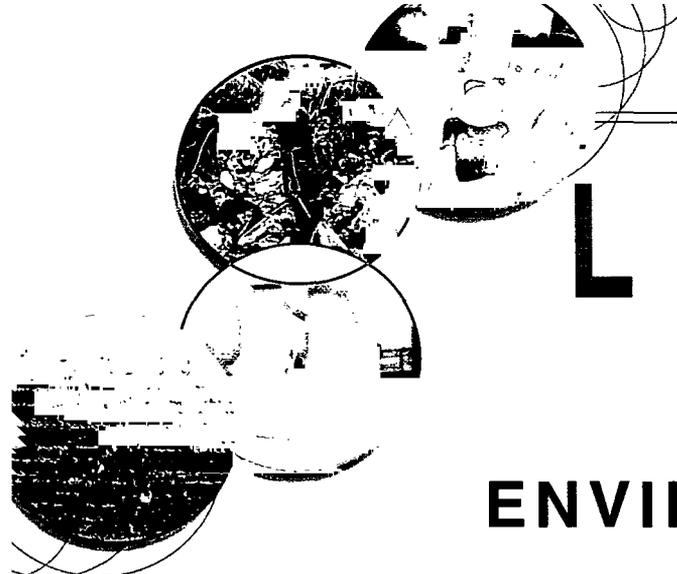
- Structural and functional decentralization of governance—a more “direct democracy” model of development and phased devolution of decisionmaking to local levels

- Establishing or strengthening mechanisms for people to participate fully in the development process.

Internationally, development targets and mechanisms with measurable objectives are needed. However, we have seen repeatedly that collective effort on the part of civic society to call attention, in the fringes of global meetings, to the downside of development remains just there—on the fringe. No doubt the same will be the experience from the Johannesburg Summit. Yet, until we find a mechanism dedicated to systematic identification of and continuing attention to the real outcomes of the development process with authority and credibility, we will not be able to address the growing inequity, and the personal violence, national social disorder, international terrorism, and other manifestations of desperation that have become daily fare.

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*Angela Cropper is a sustainable development specialist from Trinidad and Tobago. She is the Co-Chair of the Millennium Assessment and Chair of the Board of Trustees of the Iwokrama International Centre for Rain Forest Conservation and Development. She was the inaugural executive secretary for the Convention on Biological Diversity. She also held the position of Governance Officer for IUCN-The World Conservation Union.*



# LINKING

## POVERTY REDUCTION

and

## ENVIRONMENTAL management

**a**ddressing environmental issues that matter to the poor is critical to sustained poverty reduction and achieving the Millennium Development Goals. . . But this requires a more “pro-poor” and integrated approach—linking action at local, national, and global levels.

This article is based on *Linking Poverty Reduction and Environmental Management*, which was prepared as a contribution to the 2002 World Summit on Sustainable Development by DFID; DG for Development, EC; UNDP; and the World Bank. It focuses on ways to reduce poverty and sustain growth by improving environmental management, broadly defined. It seeks to draw out the links between poverty and the environment and to demonstrate that sound and equitable management of the environment is integral to achieving the Millennium Development Goals, in particular to eradicating extreme poverty and hunger, reducing child mortality, combating major diseases, and ensuring environmental sustainability.

Four priority areas for sustained policy and institutional change are highlighted:

- *Improving governance to create a more enabling policy and institutional environment for addressing the poverty-environment concerns of the poor, with particular attention to the needs of women and children.*
- *Enhancing the assets of the poor to expand sustainable livelihood opportunities and to reduce the poor’s vulnerability to environmental hazards and natural resource-related conflict.*

- *Improving the quality of growth to promote sound environmental management and protect the environmental assets and livelihood opportunities of the poor.*
- *Reforming international and industrial-country policies to address the poverty and environment concerns of developing countries and the poor.*

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### POLICY OPPORTUNITIES EXIST TO REDUCE POVERTY AND IMPROVE THE ENVIRONMENT

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The environment matters greatly to people living in poverty. The poor often depend directly on a wide range of natural resources and ecosystem services for their livelihoods; they are often the most affected by unclean water, indoor air pollution, and exposure to toxic chemicals; and they are particularly vulnerable to environmental hazards (such as floods, prolonged drought, and attacks by crop pests) and environment-related conflict. Addressing these poverty-environment linkages must be at the core of national efforts to eradicate poverty.

Many opportunities exist to reduce poverty by improving the environment—but there are significant and often deeply entrenched policy and institutional barriers to their widespread adoption. The decade of experience since the 1992 Earth Summit in Rio reveals some important lessons that help point the way forward. Three broad lessons are highlighted here:



Directorate General  
for Development,  
European Commission



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Development  
Programme



The  
World  
Bank

- **First and foremost, poor people must be seen as part of the solution rather than part of the problem.** Efforts to improve environmental management in ways that contribute to sustainable growth and poverty reduction should reflect the priorities of the poor. Supportive policies and institutions are needed, including access to information and decisionmaking, that expand the poor's opportunities to invest in environmental improvements that can enhance their livelihoods. At the same time, it is essential to address the activities of the non-poor, since they are the source of most environmental damage.
- **The environmental quality of growth matters to the poor.** It cannot be assumed that environmental improvement can be deferred until growth has alleviated income poverty and rising incomes make more resources available for environmental protection. This ignores the importance of environmental goods and services to people's livelihoods and well-being, and how the diversity of these goods and services contribute to the poor's opportunities for moving out of poverty. Further, there are many examples of how bad environmental management is bad for growth, and of how the poor suffer most from environmental degradation. Ignoring the environmental soundness of growth—even if this leads to short-run economic gains—can undermine growth itself and its effectiveness in reducing poverty.
- **Environmental management cannot be treated separately from other development concerns.** Rather, it must be integrated into poverty reduction and sustainable development efforts in order to achieve significant and lasting results. Improving environmental management in ways that benefit the poor requires policy and institutional changes that cut across sectors and that lie mostly outside the control of environmental institutions—changes in governance, domestic economic and social policies, and international and industrial-country policies.

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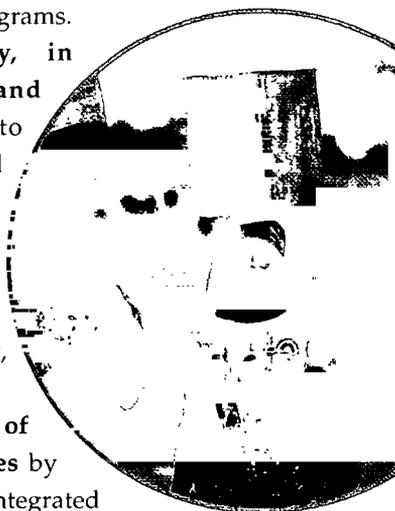
## IMPROVING GOVERNANCE

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- **Integrate poverty-environment issues into national development frameworks** by addressing the environmental concerns of the poor in nationally owned poverty reduction strategies and related macroeconomic and sectoral policy reforms, so that they can become national sustainable development strategies.
- **Strengthen decentralization for environmental management** by integrating poverty-environment issues

into sub-national policy and planning processes and sectoral investment programs.

- **Empower civil society, in particular poor and marginalized groups,** to influence environmental management policy and planning processes at all levels by expanding public access to environmental information, decisionmaking, and justice.
- **Address gender dimensions of poverty-environment issues** by ensuring that they are fully integrated into the formulation, implementation, and monitoring of poverty reduction strategies and related policy reforms.
- **Strengthen anti-corruption efforts to protect the environment and the poor** by improving legislative and regulatory frameworks and oversight mechanisms, by increasing the penalties for violators, and by ensuring effective mechanisms for feedback from communities to enforcement agencies.
- **Reduce environment-related conflict** by improving conflict resolution mechanisms in the management of natural resources and biodiversity and by addressing the underlying political and economic issues that affect resource access and use, including the role of corruption.
- **Improve poverty-environment monitoring and assessment** by strengthening government and civil society capacity to monitor environmental change and how it affects the poor, by integrating poverty-environment indicators into national poverty monitoring systems, and by building capacity to apply monitoring and assessment results to poverty-environment policy formulation and implementation.




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## ENHANCING THE ASSETS OF THE POOR

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- **Strengthen resource rights of the poor** by reforming policies and formal and informal institutions that influence land and natural resource access, ownership, control, and benefit-sharing, with particular attention to resource rights for women.
- **Enhance the poor's capacity to manage the environment**—including conservation and sustainable use of land, water,

and biological resources, and access to clean energy, water, and sanitation services—by strengthening local management arrangements and capacity and by supporting women’s key roles in managing natural resources.



- **Expand access to environmentally sound and locally appropriate technology**—such as crop production technologies that conserve soil, water, and agrobiodiversity and that minimize the use of pesticides, or appropriate renewable energy and energy-efficient technologies that also minimize air pollution—by improving protection of and access to indigenous

knowledge and technologies, by improving incentives for pro-poor technology development, and by involving the poor in technology research, demonstration, and dissemination.

- **Reduce the environmental vulnerability of the poor** by strengthening participatory disaster preparedness and risk reduction and mitigation capacity, by supporting the formal and informal coping strategies of vulnerable groups, and by expanding access to insurance and other risk management mechanisms.

### IMPROVING THE QUALITY OF GROWTH

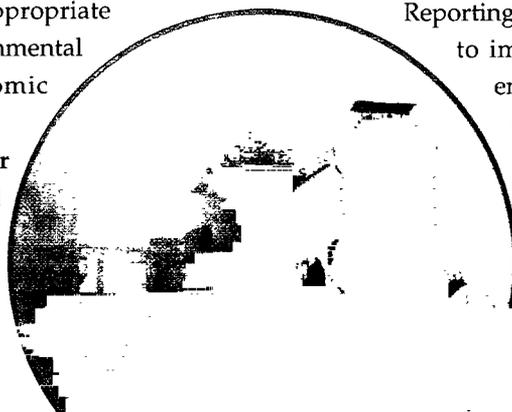
- **Integrate poverty-environment issues into economic policy reforms** by expanding the use of strategic environmental assessment and poverty social impact analysis approaches and by strengthening environmental management standards and monitoring capabilities.
- **Increase the use of environmental valuation** in adjusting national income accounts and determining appropriate price levels to better reflect the value of environmental goods and services and to improve economic decisionmaking.
- **Encourage appropriate private-sector involvement** by strengthening government and community capacities to partner with the private sector to expand environmental services for the

poor, by providing incentives for local enterprise development based on the sustainable use of biodiversity (such as community-based ecotourism or sustainable harvest of natural products), and by putting in place appropriate regulations and voluntary codes to safeguard the interests of the poor and the environment.

- **Implement pro-poor environmental fiscal reform** by pricing natural resources appropriately, particularly energy and water; by expanding the use of fiscal incentives to promote environmentally sound practices and sustainable use of biodiversity; by improving the use of rent taxes to better capture and more effectively allocate natural resource revenues; and by improving the use of pollution charges to better reflect environmental costs in market prices.

### REFORMING INTERNATIONAL AND INDUSTRIAL-COUNTRY POLICIES

- **Improve international and industrial-country trade policies** by addressing trade-environment-poverty links in the negotiation and implementation of multilateral trade agreements, by reforming trade-distorting agricultural subsidies and trade barriers to give developing countries equitable access to international markets and to encourage environment-friendly products and trade practices, and by eliminating subsidies that lead to unsustainable exploitation—such as subsidies for large-scale commercial fishing fleets that encourage overharvesting in developing-country fisheries.
- **Make foreign direct investment more pro-poor and pro-environment** by encouraging corporations’ compliance with the revised Code of Conduct for Multinational Enterprises from the Organisation for Economic Co-operation and Development, by raising awareness among shareholders and investors of corporate social and environmental responsibility issues, and by expanding the United Nations Environment Programme’s Global Reporting Initiative and other approaches to improving corporate social and environmental reporting.
- **Enhance the contribution of multilateral environmental agreements (MEAs) to poverty reduction** by strengthening developing-country capacity



to participate in the negotiation and implementation of MEAs (for example, to ensure that the Clean Development Mechanism promotes investments that benefit the poor and the environment), by improving coordination among MEAs so that scarce developing-country capacity is used most effectively, and by increasing funding for the Global Environment Facility as a major source of finance for global public goods in the environment, such as a stable climate, maintenance of biodiversity, and protection of international waters and the ozone layer.

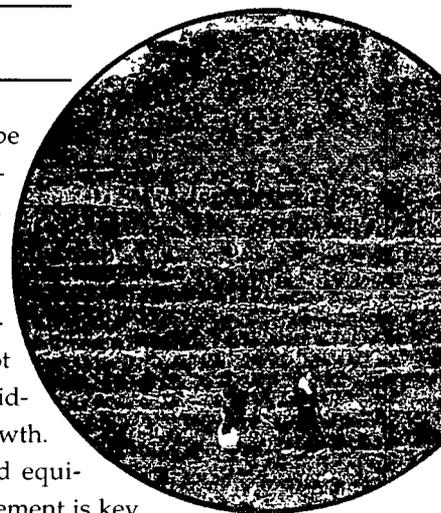
- **Encourage sustainable consumption and production.** Industrial-country consumers and producers through their trade, investment, pollution, and other activities affect the environmental conditions of developing countries. Making rich-country consumption and production more sustainable will require a complex mix of institutional changes—addressing market and government failures as well as broad public attitudes.
- **Enhance the effectiveness of development cooperation and debt relief** in addressing poverty-environment issues, particularly for the poorest countries, where aid and debt relief continue to have a valuable role to play in helping governments make many of the changes needed. This includes “mainstreaming” environment in donor agency policies and operations through staff training; development and application of new skills, tools, and approaches; and revisions to the way resources and budgets are allocated. Improved monitoring of progress against stated objectives and targets is needed in order to hold development

agencies accountable and to ensure that a commitment by senior management to addressing poverty-environment issues is put into practice throughout organizations.

## CONCLUSION

There is some degree of hope and optimism for the future—there are sometimes win-win opportunities, and there are rational ways of dealing with tradeoffs. Environmental degradation is not inevitable, nor is it the unavoidable result of economic growth.

On the contrary, sound and equitable environmental management is key to sustained poverty reduction and achievement of the Millennium Development Goals. There are significant policy opportunities to reduce poverty and improve the environment, but more integrated and pro-poor approaches are needed. The World Summit on Sustainable Development is an opportunity to focus on what is most important and to forge a coherent framework for action, with clear goals and achievable targets backed up by adequate resources and effective and transparent monitoring mechanisms. There can be no more important goal than to reduce and ultimately eradicate poverty on our planet.



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# The Economics of Sustainability

by Jeffrey Sachs

This year's ESSD Week/Sustainable Development Month, held in April 2002, focused on sustainable development and security and featured some of the world's leading thinkers on this subject.

Columbia University Professor Jeffrey D. Sachs and University of Maryland Professor Herman E. Daly touched on many of the issues raised by the other speakers, particularly the linkage between environment and development, which is a key concern of the Johannesburg Summit. This, and the following article, contain abridged versions of their remarks.

We use sustainability now in various explicit guises. We talk about debt sustainability. We have the debt sustainability analyses, which underpin the process of debt reduction under the Heavily Indebted Poor Countries initiative, so that is a very pertinent kind of sustainability.

Another kind of sustainability is project sustainability or donor sustainability. It has been a norm of this institution and a norm of the donor world that projects have to be sustainable. When the funding ends after 3 or 4 years, the project has to continue. Usually, projects fund the capital costs or the start-up costs, but the recurrent costs need to be sustainable within the recipient countries themselves. So, this is a second operational kind of sustainability.

Third, there is environmental sustainability—the sustainability of our physical environment, and our ecosystems, and our pledge to turn over a livable environment to our children.

With regard to the first two, we are on the wrong track and ought to scrap them. And especially if we want to achieve the third, which is environmental sustainability, it is all the more reason to scrap our current approaches to debt sustainability and to project sustainability, because I don't think they actually hold analytical muster.

The kind of sustainability we all want to achieve is sustainable development. We're talking about preserving the ecosystem, but in a context where we have confidence that the poor will be able to improve their material condition, and we presume that the rich, at least, won't suffer adversely. So, by sustainable development we really mean achieving the millennium goals in a way that is supportive of our ecosystems, and not detrimental in fundamental ways to the interests of the already wealthy of the world. We are going to make it if we find a path in which the interests of the rich, or the conditions of the rich, in important ways are maintained while the poor find a way to catch up, and all of it is done in a manner that is ecologically viable.

The poorest people in the world are not going to be able to enjoy the benefits of sustainable development without significant, large, continuing net resource transfers from the richest countries. Any idea that this is going to be done in any other way, merely through better governance or through structural

adjustment on the part of the poor countries, will not stand up to the evidence.

Basically, my interpretation of the last 20 years is that we took the view that all countries—all regions—could benefit from globalization if there was enough economic reform internally and a little bit of help here and there around the margins. Maybe that help was to get a pilot project going, or help for capital investment, or a little bit of debt relief along the way. But the overwhelming notion was that one does not need large transfers of income from rich to poor to make the development process work.

My claim is that without large transfers, development in large parts of the world would be impossible. For 30 or 40 countries, the net resource transfer required to achieve the goals that we have all jointly committed to would require 100 percent cancellation of debts plus a very substantial net resource transfer for a decade or two to come.

So debt sustainability has been a phony concept from the beginning. Not once since the debt crisis has erupted have we actually seriously asked what would it take to help a country meet a specific set of development targets. That's why the Millennium Development Goals are so important, because for the first time we are getting results-oriented rather than process-oriented.

That brings me to the second definition of sustainability: project sustainability. It is really the same story. In a health commission I recently chaired, with tremendous support from the World Bank, we arrived at a basic understanding that said: If you want to have a minimally acceptable health system in a poor country that provides for pretty good coverage—maybe for two-thirds of the population—that's going to cost 35 or 40 dollars per person per year.

How much can Malawi afford? Malawi is roughly at 180 dollars per capita right now. We are talking about 20 percent of Malawi's GNP for the most basic, bare bones, minimally acceptable system. Pretty plausible standard for a human society, yet this is absolutely, completely outside of the possibilities of a country at \$180 dollars per capita. So this is completely impossible to do out of one's own resources.

We need to understand that the poor are too poor to pay for their own health. What we are really talking about for health is a transfer of maybe 15 percent of developing countries' GNP

every year right now to the poorest countries to enable them to scale up a minimally, humanly acceptable health system. That includes recurrent costs. There is no way that these funds can be replaced by local funds for the next 15 to 20 years.

Now, we need to do that kind of analysis systematically for the millennium development goals. We need to do it for health in that context, although this is the kind of evidence that we have. We need to do it for hunger, which is a very complex and multifaceted problem—both urban and rural, both agricultural productivity and emergencies, humanitarian support and response to drought, and many other things. We need to do it for universal children's education, which is a goal by 2015. We need to do it for access to clean drinking water and sanitation. We need to do this seriously. My guess is that we are easily talking about the doubling of official development assistance as the Bank's own very preliminary work illustrated last fall in the run up to Monterrey. We are talking about an extra \$50 billion; \$25 billion is for health, and then you start adding in education, clean water, and so forth. It could be up to 75 or 100 billion dollars. This means scrapping the second idea of donor sustainability

This brings me to the last definition: sustainable development. After 20 years, in my view, we will have substantially broken the poverty trap. What we have to do is help to create a generation of healthy and educated children, and I believe healthy and educated children with parents alive. We could, with partnership, realism, and transparency, make a generation of investment in human beings to allow us not only to meet the specific goals of reducing infant mortality and having children in school, but actually create a base in which normal economic development can go forward.

How do we get to environmental sustainability as part of the development strategy? Well, the first point, I think, is obvious: without breaking the poverty trap of the poorest countries, we will not achieve environmental sustainability in large parts of the world.

My own view is that a tremendous amount of the local-scale biodiversity loss, watershed function, of deforestation, flooding, erosion of steep topographies, and so forth is driven by poverty populations moving into even more and more marginal lands. So the first place for environmental sustainability in my view is in the poor countries—not to blame the poor but to help them solve the poverty trap.

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There are three components to solving the poverty problem. First, ensuring that children have meals, health access, clean water, and so forth. This to me is the *sine qua non* of getting out of this trap. A second component for getting out of the trap is improving rural agricultural productivity. We need the green revolution for arid and semi-arid zones, which we haven't had. Third, I do believe that there is a case for investing in higher productivity in rural areas, but I think urban-led growth is also pro-poor-led growth. And we need a better urban-based strategy as well. We need to make these sprawling cities, which are destinations of last resort of semi-starved people, into livable environments that create jobs. We need an urban-based strategy as much as a rural-based strategy for the poor.

So first is breaking the poverty trap. Second is talking about population control policy a lot more boldly than we have in recent years. We need to keep invigorated population control policies—family planning, access to family planning services. Population pressures in the poorest countries are undermining the physical environment and the prospects for economic development, there's no doubt about it. We need to get fertility rates down. The good news is that it is happening, even in rural households with uneducated mothers. In my opinion, family planning policies have played a very large role in empowering mothers to get contraception, in getting more options to more poor households, and basically in speeding the demographic transition. And this is going to play a big role in success or failure.

The third part of environmental sustainability that I would strongly urge more of is the science of human ecology. What do I mean by the science of human ecology? I mean in doing development, taking seriously the interface of human society and the physical environment in which it is taking place. My colleagues in the macroeconomics profession are content to write thousands of papers on economic growth and development without mentioning issues of climate, without mentioning the differences between tropical and temperate zones, without any sense of life at 12,000 feet above sea level in the Andean altiplano or life in the steep slopes of the Himalayan foothills. There is no sense in most of the economic academic literature of the physical, ecological dimension of human society.

We live in a physical environment, and poor people, especially, live close to the earth. They die when there is drought. They suffer when the El Niño comes. They are vulnerable to extreme ecological, meteorological shocks. They live in fragile environ-

ments where the roads don't go. These are the things that as specialists in development we should have at our core. These are the very first things that we should know. What are the special challenges of living in the African savannah? What are the special challenges of trying to make development work in the altiplano? Why is it that almost all of the tropics are poor? That's not accidental. What are the special challenges? Why doesn't agriculture work in the Amazon? Not because of lack of cooperation, mind you—it's because the soils cannot hold the nutrients under current technologies, that's why.

Poor people are poor not by accident, but because development hasn't reached them in a lot of ways. It's also not because every one of the 49 sub-Saharan African countries happened to have miserable political leadership for the last 200 years, because they didn't. It's because the good political leadership couldn't solve the problems either. The countries were too vulnerable to shocks, deterioration of the environment, fragility of the soils, disease ecology, and the rest.

This is my third point. We need a new way to understand this, a little less economics and a little bit more physical science. Keep the dialogue, definitely—but stop thinking it's always institutions, institutions, institutions.

The fourth point, in line with that, is that we need to mobilize major scientific inputs to succeed in sustainability of the environment. Ecology itself as a science is brand new.

There is a tremendous amount we do not understand about sustainability. Again, it's not just a matter of cooperation or ending conflict or other things. We don't know enough yet about critical areas to get it right. It's knowable, but we have to invest in it.

The fifth area that I would mention in sustainability is not surprising—it is the social costing of critical inputs and outputs, particularly of carbon. We've just got to get to pricing carbon in this world through carbon taxes and through benefits for carbon sinks. Because without that, we will send the wrong signals throughout this century, which will continue to have a drastic impact on the environment.

One thing that I keep finding when I talk to scientists about this is how many really ingenious, fabulous schemes there are to actually solve this problem. I am a huge lover of technology and a believer in it. I think the scientific revolutions that we are living through right now give us fantastic hope for progress.

One group from MIT has some great ideas about fixing carbon to be the food bed for algae through special bio-reactors. The algae can be turned back into fuel; not fossil fuels, but carbon fuels to fire power plants. So basically it is a solar energy cell, not photovoltaics but rather photosynthesis. This could be a new way to generate energy from the sun through biomass. So that's one promising idea.

At the Earth Institute, Klaus Lackner has been working for many years on an ingenious scheme to fix carbon by adding carbon to highly plentiful magnesium ores that are a part of the earth's crust. If you take the right magnesium ores and you pass carbon dioxide over it, you get magnesium carbonate, which is a very thermodynamically stable compound. This can fix vast amounts of carbon. And then you can put it back down your mine. It looks like this is probably cost-effective. It is one of many approaches to mass fixation of carbon.

You need science for this, and for that you need incentives. Part of it is direct investments, but part of it is market incentives, and that's why pricing is so important. Not just because higher carbon prices or subsidies for carbon fixation will force us with our current technologies to adjust what we are doing on the margins, but will give huge incentives for these breakthroughs and get large-scale private scientific activity under way to solve these problems.

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*In July 2002, Jeffrey D. Sachs assumed a new position as director of the Columbia University Earth Institute. He was previously director of the Center for International Development and Galen L. Stone Professor of International Trade at Harvard University. In January 2002, Professor Sachs was appointed by UN Secretary General Kofi Annan as his special adviser on the Millennium Development Goals. During 2000-01, he was chairman of the Commission on Macroeconomics and Health of the World Health Organization. Sachs has been an economic adviser to governments in Latin America, Eastern Europe, the former Soviet Union, Asia, and Africa. He has been a consultant to the International Monetary Fund, World Bank, Organisation for Economic Co-operation and Development, and the United Nations Development Programme.*

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**E**xactly what is it that is supposed to be *sustained* in “sustainable” development? Two broad answers have been given:

First, *utility* should be sustained; that is, the utility of future generations is to be non-declining. The future should be at least as well off as the present. Utility here refers to average per capita utility of members of a generation.

Second, physical *throughput* should be sustained; that is, the entropic physical flow from nature's sources through the economy and back to nature's sinks, is to be non-declining. Throughput here refers to total throughput flow for the community over some time period.

For two reasons, I adopt the throughput definition and reject the utility definition. First, utility is non-measurable. Second, and more importantly, even if utility were measurable, it is still not something that we can bequeath to the future. We cannot bequeath utility or happiness to future generations. To define sustainability as a non-declining intergenerational bequest of something that can neither be measured nor bequeathed strikes me as a nonstarter. I hasten to add that I do not think economic theory can get along without the concept of utility. I just think that throughput is a better concept by which to de-

fine sustainability. The throughput approach defines sustainability in terms of something much more measurable and transferable across generations—the capacity to generate an entropic throughput from and back to nature.

Having defined “sustainable,” let us now tackle “development.” Since current economic theory lacks the concept of throughput, we tend to define development simply as growth in GDP, a value index that conflates the effects of changes in throughput and utility. The hope that the growth increment will go largely to the poor, or at least trickle down, is frequently expressed as a further condition of development. Yet any serious policy of redistribution of GDP from rich to poor is rejected as “class warfare” that is likely to slow GDP growth. Furthermore, any recomposition of GDP from private goods toward public goods (available to all, including the poor) is usually rejected as government interference in the free market—even though it is well known that the free market will not produce public goods. We are assured that a rising tide lifts all boats, that the benefits of growth will eventually trickle down to the poor. The key to development is still aggregate growth, and the key to aggregate growth is currently thought to be global economic integration—free trade and free capital mobility. Export-led development is considered the only option. Import substitution is no longer mentioned, except to be immediately dismissed as “discredited.”

Will this theory or ideology of “development as global growth” be successful? I doubt it, for two reasons, one having to do with environmental sustainability, the other with social equity.

First, ecological limits are rapidly converting “economic growth” into “uneconomic growth”—i.e., throughput growth that increases costs by more than it increases benefits, thus making us poorer, not richer. The macroeconomy grows into and encroaches upon the finite ecosystem, thereby incurring an opportunity cost of preempted natural capital and services. These opportunity costs (depletion, pollution, sacrificed ecosystem services) can be, and often are, worth more than the extra production benefits of the throughput growth that caused them. We cannot be absolutely sure because we measure only the benefits, not the costs. We do measure the regrettable defensive expenditures made necessary by the costs, but even those are added to GDP rather than subtracted.

Second, even if growth entailed no environmental costs, part of what we mean by poverty and welfare is a function of rela-

tive rather than absolute income, that is, of social conditions of distributive inequality. Growth cannot possibly increase everyone’s *relative* income. Insofar as poverty or welfare is a function of relative income, then growth becomes powerless to affect it.

While growth in rich countries might be uneconomic, growth in poor countries where GDP consists largely of food, clothing, and shelter, is still very likely to be economic. Food, clothing, and shelter are absolute needs, not self-canceling relative wants for which growth yields no welfare. There is much truth in this, even though poor countries too are quite capable of deluding themselves by counting natural capital consumption (depleting mines, wells, forests, fisheries, and topsoil) as if it were income. One might legitimately argue for limiting growth in wealthy countries, where it is becoming uneconomic, in order to concentrate resources on growth in poor countries, where it is still economic.

The current vision of globalization requires the rich to grow rapidly in order to provide markets in which the poor can sell their exports. It is thought that the only option poor countries have is to export to the rich, and to do that they have to accept foreign investment from corporations who know how to produce the high-quality stuff that the rich want. The resulting necessity of repaying these foreign loans reinforces the need to orient the economy toward exporting, and exposes the borrowing countries to the risks of volatile international capital flows, exchange rate changes, and unrepayable debts, as well as to the rigors of competing with powerful world-class firms. The whole global economy must grow for this policy to work, because unless the rich countries grow rapidly they will not have the surplus to invest in poor countries, nor the extra income with which to buy the exports of the poor countries.

## Principles and Policies for Sustainable Development

I am not advocating revolutionary expropriation of all private property in land and resources. If we could start from a blank slate, I would be tempted to keep land and minerals as public property. But for many environmental goods, previously free but increasingly scarce, we still do have a blank slate as far as ownership is concerned. We must bring increasingly scarce yet unowned environmental services under the discipline of the price system, because these are truly rival goods the use of which by one person imposes opportunity costs on others. The necessary price or scarcity rent that we collect on newly scarce

environmental public goods—such as atmospheric absorption capacity—should be used to alleviate poverty and finance the provision of other public goods.

The modern form of the Georgist insight is to tax the resources and services of nature—those scarce things left out of both the production function and GDP accounts—and to use these funds for fighting poverty and for financing public goods. Taxing away value that no one added, scarcity rents on nature's contribution, does not create resentment. In fact, failing to tax away the scarcity rents to nature and letting them accrue as unearned income to favored individuals has long been a primary source of resentment and social conflict.

Charging scarcity rents on the throughput of natural resources and redistributing these rents to public uses can be effected either by ecological tax reform, or by quantitative cap-and-trade systems initiated by a government auction of pollution or depletion quotas. In differing ways, each would limit throughput and expansion of the scale of the economy into the ecosystem, and also provide public revenue. The currently favored strategy might be called "efficiency first" in distinction to the "frugality first" principle embodied in both of the throughput-limiting mechanisms mentioned above.

"Efficiency first" sounds good, especially when referred to as "win-win" strategies. But the problem of "efficiency first" is with what comes second. An improvement in efficiency by itself is equivalent to having a larger supply of the factor whose efficiency increased. The price of that factor will decline. More uses for the now cheaper factor will be found. We will end up consuming more of the resource than before, albeit more efficiently. Scale continues to grow. A policy of "frugality first," however, induces efficiency as a secondary consequence; "efficiency first" does not induce frugality—it makes frugality

less necessary, nor does it give rise to a scarcity rent that can be redistributed

Reducing poverty is indeed the basic goal of development, as the World Bank now commendably proclaims. But it cannot be attained by growth for two reasons. First, because growth in GDP has begun to increase environmental and social costs faster than it increases production benefits. Such uneconomic growth makes us poorer, not richer. Second, because even truly economic growth cannot increase welfare once we are, at the margin, producing goods and services that satisfy mainly relative rather than absolute wants. If welfare is mainly a function of relative income, then aggregate growth is self-canceling in its effect on welfare. The obvious solution of restraining uneconomic growth for rich countries to give opportunity for further economic growth, at least temporarily, in poor countries, is ruled out by the ideology of globalization, which can only advocate global growth. We need to promote national and international policies that charge adequately for resource rents, in order to limit the scale of the macroeconomy relative to the ecosystem and to provide revenue for public purposes. These policies must be grounded in an economic theory that includes throughput among its most basic concepts. These efficient national policies need protection from the cost-externalizing, standards-lowering competition that is driving globalization. Protecting efficient national policies is not the same as protecting inefficient national industries

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— Indonesia



# Making Carbon Finance Work for Conservation and Sustainable Development

Reducing emissions of carbon dioxide and other greenhouse gases that affect climate change is one of the key challenges facing the international community. The Bank's Prototype Carbon Fund (PCF) provides a framework for action, learning, and research to demonstrate how greenhouse gas emission-reduction transactions can contribute to sustainable development, while lowering the costs of compliance with the Kyoto Protocol—the 1997 agreement to cut industrialized world emissions of greenhouse gases.

Established with contributions from governments and the private sector, the PCF is the first attempt to experiment with the creation of a market in emissions reductions under the Kyoto Protocol's "flexibility" mechanisms. Kyoto's Article 6 allows for the "joint implementation" of projects by industrialized countries, including those with economies in transition. Article 12 calls for similar project-based carbon offset trading between industrialized and developing countries under the Clean Development Mechanism (CDM).

PCF invests in cleaner technologies in developing countries and transition economies, thus reducing their greenhouse gas emissions. These emissions reductions will be independently verified and certified, and

then transferred to the Fund's contributors in the form of emissions reduction credits rather than cash. The primary focus is on renewable energy technologies—such as wind, small-hydro, and biomass energy technology—that become more profitable with financial support from the PCF.

The PCF began operations in April 2000. Six governments and 17 companies, all from industrialized countries, have contributed funds to the PCF, and have already approved projects with emissions reduction potential of more than \$100 million. PCF projects are all subject to independent validation and verification, and may be potentially certified to receive carbon credits under the rules of the Kyoto Protocol. In June 2002, Fund participants expanded their contributions to the PCF from \$145 million to \$180 million. These companies see the PCF as a powerful tool for learning how market-based mechanisms can help mitigate climate change.

One of the Fund's early projects is supporting an innovative fuel-substitution project in Brazil. The Plantar properties in the state of Minas Gerais will produce charcoal for pig iron smelting with new plantations of high-productivity eucalyptus stands. The project also produces biodiversity benefits by supporting areas of *cerrado* (savanna) forest, which

is predominant in the State of Minas Gerais. Brazil's *cerrado* ecosystem has recently been ranked as one of the 26 most important targets globally for biodiversity protection. The Plantar Project will allow recovery of the natural *cerrado* ecosystem on Plantar lands. This will occur as a result of fire suppression and the cessation of grazing on those degraded *cerrados*.

Under its governing articles, the PCF can only invest a maximum of 10 percent of its funds on activities focused on land use, land use change, and forestry (LULUCF). This mirrors developments under the Kyoto Protocol, where only reforestation and afforestation have been recognized as eligible activities for emissions trading with developing countries under the CDM, although a much wider range of LULUCF projects are potentially eligible for economies in transition under joint implementation.

This wider range of activities, from conservation to sequestration, also has a significant influence on the global carbon cycle. Many opportunities in these areas are likely to be found in the agricultural and forestry sectors. The BioCarbon Fund—a new fund currently in the design and marketing phase—will help improve our understanding of the linkages among climate

## CARBON EMISSIONS REDUCTIONS BEGINS AT HOME

The World Bank is seeking to reduce its own carbon footprint. In a first move to deal with its carbon emissions—estimated at 203,700 tCO<sub>2</sub> across the Bank and its field offices—the World Bank's Environmentally and Socially Sustainable Development (ESSD) vice presidency has committed almost \$100,000, to offset its carbon footprint for 2001. The money from these offsets will purchase emissions reductions in the Scolel Te project in Chiapas, Mexico, where small farmers in the poorest regions will be paid for increasing tree cover and solid carbon as a means of increasing fertility on their farms. The ESSD pilot phase will be followed by other areas of the Bank before the end of 2002. Bank staff have also responded at an individual level. In April 2002, during ESSD Week/Sustainable Development Month, more than 554 people took their personal carbon footprint, through a computer test created to determine their own carbon emissions—counting everything from the carbon dioxide that comes out of the tailpipe of their car, to how far they traveled by plane on their last vacation. More than 250 staff registered for the voluntary program—pledging to reduce their carbon footprint, first by changing their lifestyles to reduce their carbon output over time, then by paying to offset their remaining surplus emissions.

change, biodiversity conservation and management, and desertification and land degradation. Projects will provide information to the UN-FCCC parties as they make decisions about eligibility rules under the CDM in the first commitment period for emissions reductions from 2008 to 2012. The projects will also provide the parties with practice-based insights on activities they may wish to consider for subsequent commitment periods. The BioCarbon Fund will support projects in areas such as improved forest management, agroforestry, improved agricultural practices, the prevention of land degradation, watershed management, and wetland protection and restoration.

The Bank is also launching the Community Development Carbon Fund (CDCF), in collaboration with the International Emissions Trading Association (IETA), to ensure that carbon finance might enhance the income opportunities of the rural poor, especially communities in smaller, poorer countries and in small-island developing states. Projects may provide communities with either direct or indirect benefits. A community cooperative-based shade coffee project, for example, may directly benefit the livelihoods of the local community. Or, a wind energy facility located on tribal lands that generates electricity for the national grid may provide indirect benefits by using carbon finance to sup-

port a clean water or literacy project for the local community.

Both the BioCarbon Fund and the Community Development Carbon Fund will have a target size of \$100 million. The CDCF will be launched at the World Summit on Sustainable Development in August. The BioCarbon Fund will be launched at the Katoomba Forestry meeting in Tokyo in early November 2002.

*This article was prepared by Ken Newcombe, Manager of the Prototype Carbon Fund (PCF) Website — <<www.prototypecarbonfund.org>>.*



# n Environmentally Sustainable Approach to Water in Southern Africa

The water resources management challenge in Southern Africa is reaching crisis proportions, threatening the natural resource base, social and economic development, and poverty reduction in the region. This is a result of multiple and linked factors, including a limited endowment of freshwater, growing demand from increasing populations, low levels of resource development, climate variability, growing degradation of water resources, and the difficulties of managing numerous watersheds shared by several nations.

The crisis is potentially manageable, but not without concerted efforts on the part of water resources planners, managers and regulators, multi-sectoral users agencies, governments, international aid institutions, communities, and nongovernmental organizations. Many practical approaches are outlined in the forward-looking technical report by the Southern Africa Development Community (SADC) entitled *Defining and Mainstreaming Environmental Sustainability in Water Resources Management in Southern Africa*. The report will be launched at the World Summit on Sustainable Development in Johannesburg in August 2002. This discussion draws on the recommendations of the SADC report. (SADC covers

Angola, Botswana, Democratic Republic of Congo, Lesotho, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia, and Zimbabwe.)

## Dimensions of the Challenge

It is a commonly accepted measure that nations are experiencing "water stress" when availability falls below 1,700 cubic meters per person per year. As Figure 1 shows, water availability per person in Southern Africa is expected to drop dramatically by 2025; many nations are expected to fall below the water stress benchmark, and a few will be water-scarce.

The region faces a long list of challenges in the water resources area, including:

- Provision of basic water supplies and sanitation is inadequate in both rural and urban areas.
- Overall demand for water is growing rapidly as economies in the region develop and diversify away from subsistence agriculture toward commercial agriculture and manufacturing-based industries and continue to depend on water for power generation.
- Water resources in the region are subject to extreme variability, with significant social and economic consequences.

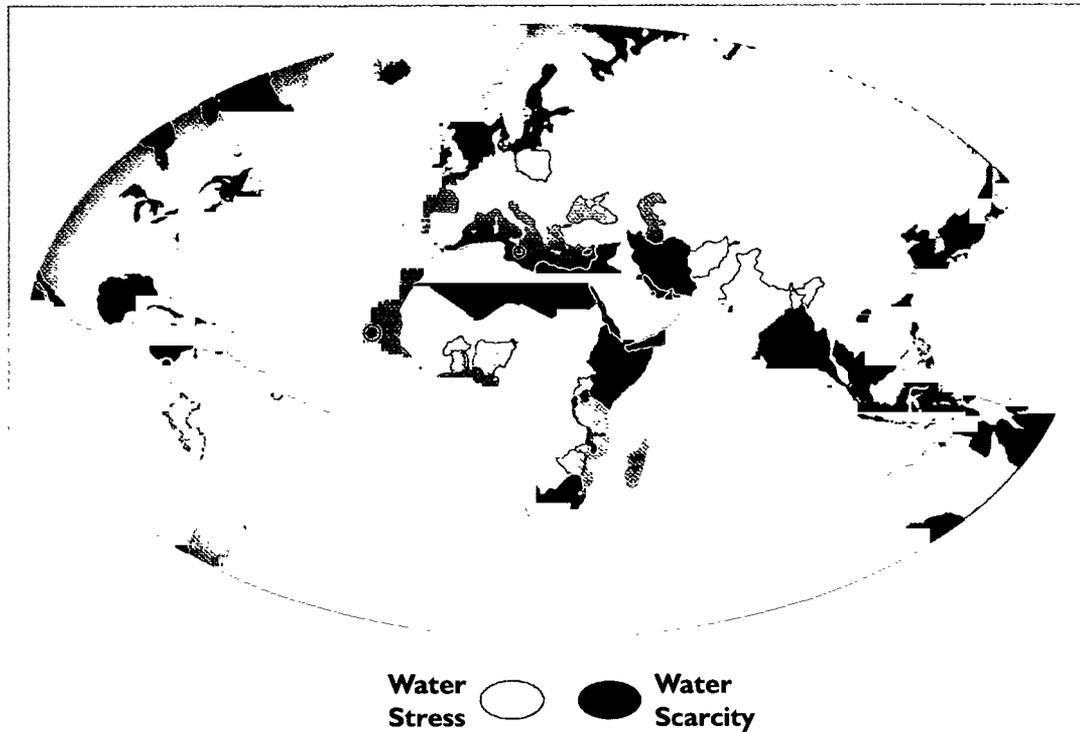
Droughts are endemic, floods are relatively frequent occurrences, and many rivers do not have year-round flow. Global climate change will only exacerbate these problems.

- Many of the major river basins in the region are shared between two or more countries, leading to uncertainties and tensions regarding water allocations, planning, development, and management.

In addition, water resources degradation (the main focus of the report) is a huge and growing challenge caused by:

- Pollution from point and nonpoint sources, making many water sources unfit for use without expensive pretreatment
- Over-abstraction and regulation of surface water resources, which has led to significant changes in the flow regimes and water quality of many rivers, resulting in negative impacts on aquatic biota and subsequent loss of ecological function and health
- Encroachment of human settlements onto floodplain areas and riparian zones, which is increasing vulnerability to floods and also causing loss of wetland habitat, with serious consequences for biodiversity conservation and subsistence agricultural and fishing communities

### Water stressed and water scarce countries — 2025 projections



- Degradation of watersheds due to poor land use practices, which is causing sedimentation of river channels, lakes, and reservoirs, changes in flow regimes that lead to alterations in hydrological and ecological processes, and loss of critical habitats for important aquatic species
- Invasive weeds, which are causing major water losses and imposing a huge cost on the operations and maintenance of water supply, agriculture and energy infrastructure, water quality, fisheries, navigation, and ecosystem health and functions.

Fisheries, an important source of protein in local diets and the mainstay of several economies, are declining due to over-exploitation, pollution of water

resources, invasive alien species and aquatic weeds, regulation of river flows, and encroachment of human settlements onto floodplain areas.

Further, the SADC review found that, though there have been some encouraging policy shifts recently, there are still fundamental weaknesses and shortcomings in water resources management in the region.

For example, water is utilized by many sectors, but water policies and legislation remain compartmentalized and fragmented, making implementation and enforcement difficult. Coordination among sectors is weak.

In addition, the integration of environmental sustainability criteria into decisionmaking

processes and policy remains superficial at best; the enforcement of environmental impact assessment regulations in water resources development projects is poor; community involvement in water resources management is generally still poor; the environmental and social costs and benefits of projects are not adequately integrated into the water resources project development and management process; institutional capacity in the region is weak; and data insufficiency is a critical weakness.

Finally, conflicts and tensions in the region, some of which are related to water issues, can potentially lead to uncertainty and weakness in water resource management, particularly transboundary water resources, and make coopera-

tion between countries difficult.

## A Conceptual Framework

The report draws many positive lessons from the SADC region. It recommends a conceptual framework for sustainable water resources management in the region that rests on three key principles.

**Principle 1. Recognizing the environment as the resource base.** Although there has been a tendency to think of water itself as the only commodity of value provided by water resources, in fact aquatic ecosystems provide a number of valuable goods and services.

**Principle 2. Recognizing the economic value of goods and services provided by water resources.** Traditional economic approaches, which have focused on the benefits provided by the use of water resources, have ignored the benefits of environmental management, the economic implications of degraded water resources and aquatic ecosystems, and the opportunity cost of environmentally damaging economic activities and management approaches. As a matter of course, both direct and indirect values should be included in cost-benefit analyses.

**Principle 3. Mainstreaming environmental sustainability criteria into water resources policy and management.** The environment continues to be



Outeniqua Pass, South Africa.

addressed narrowly. An important challenge is the development of clear criteria that define environmental quality goals or objectives, which can guide water resources planners and managers in their decisionmaking.

## Lessons Learned

The SADC report provides several important lessons for the region, including:

*Provide better information.* Sustainable water resources management is underpinned by good information. To integrate environmental sustainability issues into water resources planning, long-term monitoring programs are needed to collect information on water availability; present and future water uses and land uses; projected demands on water resources; macroeconomic

trends that affect demographics and hence water demand; the status of water resources, in terms of both biophysical factors and ecological health; and indicators of economic well-being, which allow assessment of the degree to which environmentally sustainable utilization of water resources is generating socioeconomic benefits for communities.

*Value all goods and services.* Policymakers and decisionmakers need to be made aware that water resources provide a range of goods and services apart from just water, and that the maintenance and utilization of these goods and services depend to a large extent on the protection and maintenance of healthy, functional aquatic ecosystems. Planners and water users need to identify and quantify the econom-

ic values of such goods and services.

*Maintain aquatic ecosystems.* Restoration and maintenance of the natural biodiversity of aquatic ecosystems is vitally important in ensuring that water resources retain their resilience and ability to recover from the pressures of utilization. Policy and regulatory frameworks and watershed management strategies must recognize the biodiversity of aquatic ecosystems as a key criterion in sustainable water resources management.

*Clarify the legal status of aquatic ecosystems.* The provision of sufficient water of adequate quality, delivered in as close to a natural flow regime as possible, underpins the protection of aquatic ecosystems, which in turn ensures the sustainability of water resources. In order for the water requirements of aquatic ecosystems to be assured, explicit and clear status should be afforded to these water requirements in water policy and law. Determinations of the water requirements of aquatic ecosystems should be based on the principle of maintaining an adequate level of natural ecological processes and functions to sustain the provision of the various goods and services that are valued or relied upon by communities.

*Consolidate policy and planning.* The linkages between land use and water resources should be explicitly recognized in policy and regulatory frameworks.

This may require that sectoral policies be reviewed, harmonized, and possibly consolidated in order to promote integrated management of land and water resources at a watershed level. The use of Strategic Environmental Assessment (SEA) approaches should be promoted and followed when planning and setting objectives for land and water resources management. Institutional structures and mechanisms may need to be concurrently reviewed and reformed in order to implement integrated watershed management strategies.

*Support user-group representation.* Water resources institutions such as river basin authorities must be representative of the multiple water user interests in the basin. Planning and decisionmaking processes related to development, allocation, and utilization of water resources must be broadened from a narrow technical exercise to also integrate effective participation of water user groups and communities impacted by such decisions. Community and user participation in planning and management decisionmaking is the only way to ensure that the distribution of costs and benefits of water resources development, allocation, and management is equitable.

*Encourage preventive management.* Preventive management is more cost-effective than rehabilitation or remediation. The long-term costs of rehabilitation of degraded water re-

sources usually far outweigh the short-term economic benefits of over-exploitation. The precautionary principle should be applied in decisions regarding development and allocation of water resources, or those regarding control and management of land-based activities that cause degradation of water resources. Preventive management strategies should include and promote demand-side management approaches over supply-side interventions.

*Control invasive species.* The control of invasive and nuisance species, particularly aquatic weeds, requires the development and implementation of holistic long-term strategies. Preventive management remains the most efficient way of dealing with the problem. Once invasives are present in a water resource, short-term controls such as mechanical and chemical methods must be balanced with longer-term controls such as biological controls and with long-term commitment to integrated control programs. Collaboration between neighboring countries and those sharing water resources is essential; control programs should be designed and implemented jointly by all affected countries.

*Incorporate environmental sustainability criteria.* Regulatory frameworks for water resources management should be strengthened, particularly related to the assessment and mitigation of environmental impacts on water resources.

Environmental sustainability criteria should be incorporated into regulatory frameworks, utilizing regulatory tools that are flexible; relatively simple to administer and enforce; tailored to suit southern African aquatic ecosystems; and based on the use of economic instruments—such as charges, incentives, and penalties—to promote self-regulation and encourage minimization of impacts on water resources.

*Mobilize capacity through knowledge sharing networks.* Expertise and capacity for sustainable water resources management is severely limited in southern Africa, especially in the public sector. This is a critical weakness, since it is primarily public sector organizations such as government agencies and river basin authorities that are responsible for the various aspects of water resources management. Communication between the different countries is often slow and ineffective, and sharing of knowledge between professionals and water resource managers at the operational level is frequently constrained due to bureaucratic processes. At the national and regional levels, innovative strategies are needed to overcome existing barriers to sharing of knowledge, experience, and expertise.

## Conclusion

Sustainable water resources management in Southern Africa can only be achieved by

striving for a reasonable balance between the short-term needs of people for social and economic development and the longer-term imperatives for protection of the natural resource base. If that balance is struck, water resources can continue to provide benefits to improve people's livelihoods and quality of life.

The SADC report is a vital contribution to the region's development agenda. It fills an important knowledge gap and shares best practices from within the region. It provides a framework for defining the complex and elusive concept of environmental sustainability in the water sector and mainstreaming that concept in operational terms in water resources policies and institutional reforms, and in the decisionmaking for water resources planning and development. It paves the way forward for developing sound, sensible, and sustainable water resources investments and management systems for meeting the region's priority goals.

*This article was prepared by Rafik Hirji of the Environment Department, (202) 458-1994, fax (202) 477-0565. Defining and Mainstreaming Environmental Sustainability in Water Resources Management in Southern Africa was prepared by SADC and its partners, including the World Conservation Union Regional Office for Southern Africa, the Southern African Research and Documentation Centre, India Musokotwane Environment Resource Centre for Southern Africa, the Environment Department and Africa Water Resources Management Initiative of the World Bank, and the Swedish International Development Cooperation Agency.*



# Working for a Better Future for Forests and Forest-Dependent People

The management, conservation, and sustainable development of forest ecosystems and their associated resources have been some of the more difficult challenges of the last several decades. Forests were the source of much concern and conflict at Rio, and have since continued to occupy a prominent place on the agenda of the international community. There have been many useful proposals for action, yet the world's forests continue to suffer unacceptably high rates of loss and degradation.

Up to 1.6 billion people depend in whole or in part on forests for their livelihoods. In addition, wood is the main household energy source for many of the world's poorest communities. Forests can also contribute substantially to economic growth and development. A study done for the Bank's Forest Policy Review indicated that as much as \$15 billion a year is lost from inappropriate forest regulation and illegal harvesting.

Forests also support as much as 90 percent of the world's terrestrial biodiversity and provide environmental services such as watershed and coastal protection that reduce human vulnerability to natural hazards such as drought, floods, and hurricanes. Some of these environmental services—such as carbon storage and biodiversity conservation—provide benefits of global value.

The World Bank has been a major source of financial assistance for forest conservation and development (see *Box*, below).

## New directions and opportunities

The conservation and wise use of forest ecosystems is a central pillar of World Bank assistance and is embodied in the Bank's new *Environment Strategy*. The Bank's proposed new Forest Strategy and Operational Policy on forests is fully consistent with the Environment Strategy, and will provide much more detailed guidance for all Bank-supported activities that involve or affect forests.

The Forest Strategy is the culmination of a 5-year process of detailed internal and external analysis, review, and consulta-

### THE SCALE OF BANK INVOLVEMENT

The Bank is the largest single source of development assistance finance for forest conservation and development. At present, some \$1.72 billion of World Bank lending is supporting 34 active forestry projects. In addition, another 94 Bank projects include forest conservation and management components worth a further \$1.79 billion. Over the last 10 years, Bank lending has also been complemented by 145 forest conservation projects supported by a further \$1.23 billion in grants from the Global Environment Facility.

tion. There was strong stakeholder support for the recommendations of the Bank's Operations Evaluations Department that the Bank expand its policy to explicitly cover interventions in all forest areas and refocus its strategy on poverty reduction, economic management, and good governance.

The proposed revisions to the Forest Strategy and its associated Operational Policy are aligned with these priorities and emerging Bank instruments in programmatic lending, including poverty reduction programs and credits. The new Strategy aligns the Bank's forest-related activities with the Bank's major institutional objectives by pursuing three equally important and interdependent goals:

- *Harnessing the potential to reduce poverty by creating security, empowerment, and opportunity for rural people—especially indigenous people and the rural poor—in the management and sustainable use of forests.*
- *Integrating forests into sustainable economic development by addressing the undervaluation, governance failures, and perverse incentives that commonly plague the sector. Support will focus on developing markets for a broader range of forest goods and services, encouraging improved*

governance and control of illegal activities, promoting active stakeholder involvement in forest management decision-making, and managing adverse cross-sectoral and macroeconomic impacts on forest ecosystems and their dependent people.

- *Protecting vital local and global environmental services and values by supporting the development of new markets for both local and global environmental services, assisting governments in strengthening policies and investments in conservation and protected areas, and ensuring that Bank-supported investments do no direct or indirect harm to critical forest conservation areas.*

The proposed new Strategy places particular emphasis on issues of governance and participation, including independent, performance-based certification of any commercial forest operations supported by Bank lending. Essential elements of acceptable certification processes encourage good governance in the forest sector by including stakeholders in the definition of management standards; balancing the ecological, economic, and equity dimensions of forest management; and developing independent and credible performance evaluation and reporting mechanisms.

## Approach to implementation

The proposals for implementation of the revised Strategy focus on a number of key areas. Bank interventions will build country ownership by supporting and building on national forest programs and related country-driven processes. They will give priority to rigorous economic and sector analysis through activities such as resource and market assessments, strategic environmental assessments, poverty assessments, and social analyses. The Bank's analytical work will be developed through multistakeholder planning and review processes that will help support the policy reforms required to achieve more open and transparent governance. This, in turn, will help to ensure that forest management and development is responsive to all stakeholder interests.

The Bank will seek to bring innovative blends of public and private investment to support the integrated management of the forest resource. The Bank will also extend its partnerships with communities, governments, and environmental organizations to support the identification and conservation of critical forest conservation areas and to monitor projects.

One of the most significant Bank partnerships in this area is the World Bank-WWF Alliance for Forest Conservation

and Sustainable Use. This alliance sought to catalyze meaningful progress in reversing the trends of continued forest loss and degradation by securing at least 50 million hectares of new protected forest areas by 2005, along with the improved management of another 50 million hectares of forest protected areas and 200 million hectares of production forest outside key protected areas. Substantial progress has been made in achieving these targets, but there is still an enormous amount of work that needs to be done to fully realize these goals.

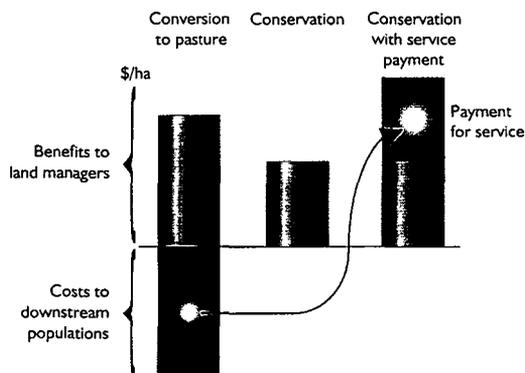
The proposed new Strategy will be considered by the Bank's Board of Directors in October. If adopted, it will provide a sound basis for strengthening and extending this strategic alliance to accelerate progress and ensure a better future for the world's forests and the world's forest-dependent people.

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# Market-Based Mechanisms for Conservation and Development

## THE SIMPLE LOGIC OF PAYMENTS FOR ENVIRONMENTAL SERVICES

As the figure shows, land users receive few benefits from forest conservation—often, less than the benefits they would receive from alternative land uses, such as conversion to pasture. But deforestation can impose costs on downstream populations, who no longer receive the benefits of ecological services such as water filtration. A payment by the downstream beneficiaries can help make conservation the more attractive option for land users. The payment must be more than the additional benefit to land users of the alternative land use (or they would not change their behavior) and less than the value of the benefit to downstream populations (or they would not be willing to pay for it).



**M**arket-based mechanisms offer many advantages over conventional approaches to conservation. They can mobilize new funding from consumers of environmental services, better match funding to the supply of services, and provide additional and diversified income for rural development.

For example, forests provide valuable hydrological services, including controlling the volume of water flows and protecting water quality, reducing sedimentation, preventing floods and landslides, conserving biodiversity, and storing carbon. These services are rarely paid for, however, and so are often lost. Market-based mechanisms seek to remedy this market failure, for example, by charging municipal and industrial users an additional fee on their water bills to pay upstream land users for investments in forest conservation (see *Box*, at left).

Recent studies have found almost 300 examples of such mechanisms worldwide, and the list is constantly growing. Helping countries find innovative solutions to such problems—which intersect with livelihood, vulnerability, and health issues—is a key element of the World Bank's Environment Strategy.

While interest in market-based approaches to conservation is growing throughout the world, relatively little information is available on how these ap-

proaches work in practice. Experience with market-based mechanisms is still young, and much remains to be learned. Though the principles are simple, putting them into practice is not. A review of numerous case studies of market-based mechanisms throughout the world suggests some broad initial lessons:

- **One size does not fit all.** No single mechanism is universally applicable. Even when mechanisms are similar, the details of their application are likely to differ substantially, in light of local technical, economic, and institutional conditions.
- **Identify the services being provided clearly.** Potential buyers are not interested in generic forest, water, or biodiversity services. Rather, they are interested in clean water, or in a reliable dry-season water supply, or in access to genetic information. Without a clear understanding of which specific services a given forest is providing, and to whom, developing market-based mechanisms is difficult.
- **Understand and document the links between ecosystems and services.** Just as important as identifying the services is understanding how these services are generated. Too often, mechanisms rely on conventional wisdom that forests provide services such as improved

water supply. Even when the conventional wisdom is right, it is often insufficiently precise to allow effective mechanisms to be designed. What kind of forest is most effective in improving water supplies, for example, and where should it be located? How compatible are other uses? Without answers to questions such as these, the mechanism is unlikely to work effectively.

- **Begin from the demand side, not the supply side.** By focusing on the demand for services and asking how best to meet it, it is more likely that an effective and sustainable mechanism will be developed. Without demand, there can be no market. Beginning from the supply side risks developing mechanisms that supply the wrong services, in the wrong places, or at prices that buyers are unwilling to pay. Supply-driven mechanisms are likely to have a higher mortality rate than demand-driven ones.
- **Monitor effectiveness.** Monitoring effectiveness is essential to documenting to buyers that they are getting what they are paying for, and to adjust the functioning of the mechanism should problems arise. At the same time, excessively burdensome monitoring requirements can discourage

potential suppliers without necessarily providing more reassurance to buyers. Finding the right balance of information and compliance costs is an on-going concern, as seen in the case of markets for certified timber and agricultural products.

- **Design flexible mechanisms.** Market-based mechanisms must also be sufficiently flexible to respond to changing demand and supply conditions and improvements in knowledge about how forests generate services. They should reward efforts to expand and improve service delivery and to reduce costs, while minimizing the incentives for destructive rent-seeking or free-riding.
- **Ensure the poor can participate.** Market-based mechanisms have great potential to provide additional income sources to rural land users, as well as reduced risk through diversification and other indirect benefits. However, realizing this potential often requires that particular efforts be made to ensure that the poor are not excluded, through efforts to secure land tenure of marginalized groups, support for cooperative institutions for bundling and bargaining, access to training and start-up capital, and of course the design of the market itself.

## WORLD BANK SUPPORT FOR THE PAYMENT FOR ENVIRONMENTAL SERVICES APPROACH

The World Bank is working with several countries to develop Payment for Environmental Services (PES) systems that could help substitute for the absence of markets and promote the maintenance of environmental services—especially in Central and South America, where the effects of Hurricane Mitch in 1998 underscored the dependence of the population, especially poor people, on environmental services and the protection provided by natural ecosystems. Bank-supported operational work on PES includes:

- *Costa Rica.* The Ecomarkets Project, which supports the country's PES program, includes a \$32.6 million loan from the World Bank to help the government ensure current levels of environmental service contracts and an \$8 million grant from the Global Environment Facility (GEF) to assist the program's conservation of biodiversity.
- *Colombia, Costa Rica, and Nicaragua.* The Regional Integrated Silvopastoral Ecosystem Management Project is piloting the use of PES as a means of encouraging a shift from unsustainable agricultural practices to sustainable silvopastoral practices.
- *Dominican Republic, Ecuador, and El Salvador.* Pilot PES programs are under preparation in these countries.
- *Mexico.* The World Bank is supporting a survey of land management practices in the *ejido* (communal land ownership) sector, which includes most of the country's remaining forest area and most of the rural poor. The goal is to help design a PES system and provide a baseline to monitor its implementation.

In addition, the World Bank Institute (WBI) has developed a training course on PES targeted to technical personnel in ministries, conservation agencies, and nongovernmental organizations involved in implementing PES programs. As of 2002, the course has been presented four times.

Carefully designed markets for ecosystem services can make an important contribution to both environmental improvement and rural development. While most initiatives are still in the early stages of development, they all provide useful lessons and inspiration for further innovation in this rapidly changing area, for the benefit of both ecosystems and people.

*This article was prepared by Stefano Pagiola (e-mail [spagiola@worldbank.org](mailto:spagiola@worldbank.org)) and Gunars Platais (e-mail [gplatais@worldbank.org](mailto:gplatais@worldbank.org)) of the World Bank's Environment Department (website: [www.worldbank.org/environmentaleconomics](http://www.worldbank.org/environmentaleconomics)). It is based on a review of market-based mechanisms for forest conservation co-sponsored by the World Bank Institute (WBI), the International Institute for Environment and Development (IIED), and the UK branch of the World Wildlife Fund (WWF-UK).*

For more information, see: Stefano Pagiola, Joshua Bishop, and Natasha Landell-Mills, eds 2002, *Selling Forest Environmental Services: Market-Based Mechanisms for Conservation and Development*. Earthscan, London.

# THE MILLENNIUM DEVELOPMENT GOALS AND THE ENVIRONMENT

## What are the Millennium Development Goals?

The Millennium Development Goals (MDGs)—developed from world conferences organized by the United Nations in the past decade, including the September 2000 UN Millennium Summit—have been commonly accepted as a framework for measuring development progress. The eight MDGs focus on achieving significant, measurable improvements in people's lives. They establish yardsticks for measuring results—not just for developing countries, but for the rich countries that help to fund development programs and for the multilateral institutions that help countries implement them.

### THE MILLENNIUM DEVELOPMENT GOALS

1. Eradicate extreme poverty and hunger
2. Achieve universal primary education
3. Promote gender equality and empower women
4. Reduce child mortality
5. Improve maternal health
6. Combat HIV/AIDS, malaria, and other diseases
7. Ensure environmental sustainability
8. Develop a global partnership for development.

### GOAL 7 — ENSURE

#### ENVIRONMENTAL SUSTAINABILITY

##### Targets:

- Integrate the principles of sustainable development into country policies and programs and reverse the loss of environmental resources
- Halve, by 2015, the proportion of people without sustainable access to safe drinking water
- Achieve, by 2020, a significant improvement in the lives of at least 100 million slum dwellers.

programs, policies, laws, and institutions. The Poverty Reduction Strategy process is an example of a promising tool to integrate the environment into policymaking.

Achieving the second target, which addresses the considerable health and economic costs of inadequate water supplies, could save 400,000 lives per year.

The third target—improving the lives of slum dwellers—will require numerous interventions, including improved housing, access to waste management services, access to cleaner fuels to reduce indoor air pollution, reduced urban air pollution, and access to safe transport services.

## The Environment

Goal 7 is dedicated to ensuring environmental sustainability. This goal recognizes that all too often the environment has been overlooked by policymakers as an important resource for growth and poverty alleviation.

Goal 7 includes three targets, which seek to capture the complex interaction among the environmental, social, and economic aspects of sustainable development.

The first target focuses on the integration of sustainable development principles into country

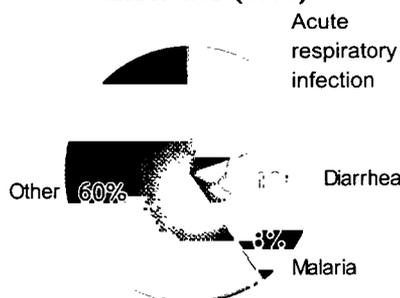
## Environment and the MDGs

In four key areas—livelihoods, health, vulnerability, and participation and empowerment—environmental management can help achieve the MDGs.

### Livelihoods

Goal 1—eradicating extreme poverty and hunger—is closely connected to the issue of livelihoods. For example, agricultural systems support the livelihoods of the vast majority of the rural poor; degradation of such systems is undermining present and future livelihood opportunities for many poor people.

Causes of deaths among children under five (1999)



Source: WHO.

In addition, the sustainable management of natural resources is important to sustain export revenues. The poorest countries are still heavily dependent on natural resource exports such as cocoa, coffee, sugar, and oil, gas, and minerals.

## Health

Goals 4, 5, and 6 all recognize the linkages between improvements in human health and poverty reduction. Premature death and illness due to major environmental health risks account for 20 percent of the disease burden in the developing world. This is comparable to the toll from malnutrition and larger than the burden from other preventable risk factors and groups of disease.

Environmental health issues are particularly important for achieving goal 4—reducing child mortality. Environmentally related diseases—most notably diarrhea, acute respiratory infections, and malaria—are leading causes of child mortality, accounting for some 40 percent of under-five mortality (see *Figure*, at left).

Malaria, which is explicitly mentioned in Goal 6, kills 1 million people per year, 90 percent of them in Africa. Malaria threatens an estimated 40 percent of the world's population—mostly those living in developing countries.

As a vector-borne disease, malaria is affected by a wide-range of environmental factors. Stagnant water supports mosquito populations, and the increase in temperature associated with climate change is expanding the area affected by malaria. Interventions—such as maintaining irrigation, drinking water, and sanitation infrastructure—will help reduce malaria.

## Vulnerability

Vulnerability to environmental change, encompassing both natural disasters and the more gradual processes of envi-

ronmental degradation, is a key dimension of poverty. Environmental shocks and stresses—including droughts, floods, and forest fires—can affect both short- and long-term poverty, making them highly relevant for attaining Goal 1. The rural poor often live and work in ecologically fragile areas, and the urban poor are more likely to live and work in areas with high exposure to environmental hazards. As a consequence, the poor suffer the greatest losses of income and assets, at least in relative terms, and are in the weakest position to cope and adapt.

## Participation and Empowerment

Goals 2 and 3 address the issue of participation and empowerment through education and gender equality. The burden of environmental degradation often falls disproportionately on women. This in turn affects opportunities open to them, including education.

Many hours devoted to gathering water and fuel often mean that women have less opportunity than men to participate in market-based work or earn income independently. For adolescent girls, who commonly share responsibility for household tasks, these activities often come at the expense of schooling. Investments in environmental infrastructure can empower women to participate in other activities, whether income generation or community affairs, and facilitate increased education for girls.

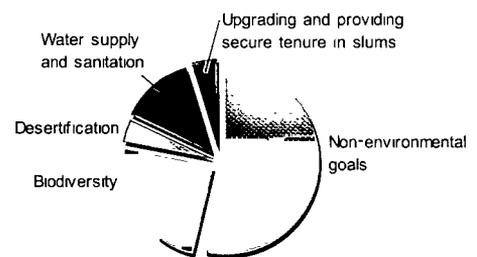
The burden of environmental health also falls disproportionately on women. Acute respiratory infections, the leading contributor to the global burden of disease, are more common in women. In developing countries, these are largely associated with exposure to indoor air pollution from cooking and heating with traditional fuels. Improving access to modern fuels would reduce the gender gap related to environmental health.

## Investment Implications

Reaching the environment goal will demand a wide range of measures. Some of these measures require financial expenditures—such as the cost of building sanitation infrastructure.

The World Bank's Environment Department has calculated that additional aid of \$35 billion per year over 15 years is required to achieve Goal 7. This represents a 4.5 percent increase in current levels of net ODA flows (for all development purposes) from DAC countries.

### Additional aid needed to meet the MDGs: \$65–85 billion



*A significant share of additional aid to developing countries needs to be directed to environmental issues if sustainability is to be ensured.*

The Bank estimates that \$30 to \$50 billion would be needed for the other MDGs, bringing the total for all eight goals to \$65 to \$85 billion.

Achieving goal 7 and the other goals will involve more than money. To ensure progress toward sustainability, the policy context is as important as the availability of funds.

If environmental sustainability is not ensured, the achievements for the rest of the goals may be short-lived. Environmental actions may be among the most cost-effective ways of achieving many of the other goals.

*This article was prepared by Katherine Bolt of the Environment Department's Policy and Economics Team, (202) 473-7108, fax (202) 522-1735.*

# IMPLEMENTING THE ENVIRONMENT STRATEGY — REFOCUSING OUR ACTIVITIES AND PRIORITIES

**A**fter two years of stocktaking, research, and broad consultations, *Making Sustainable Commitments*, the World Bank's new Environment Strategy, is now being implemented. The Strategy has re-focused the Bank's activities to areas where it can be most effective in supporting sustainable development by enhancing the quality of people's lives, improving the quality of growth, and protecting the quality of the global commons. Implementing the Strategy requires adjusting and realigning the Bank's priorities, tools, activities, and institutional incentives. The following highlights key elements of this adjustment.

## Mainstreaming environment

The Strategy emphasized the imperative to mainstream environment into policy dialogues, country assistance strategies, poverty reduction programs, lending and non-lending programs, and partnerships. Analytical and advisory assistance and learning programs play a key role in supporting good environmental management and stewardship in client countries, as well as in facilitating the mainstreaming of environmental considerations into the Bank's activities.

Since the adoption of the Strategy, the Bank has made significant progress in several areas. For example, the Bank has:

- Initiated *research to explore poverty-environment linkages* in order to help equip our client countries with existing knowledge on poverty-environment links and assist them with analytical activities in this area, particularly in the context of the preparation of Poverty Reduction Strategy Papers (PRSPs), which are now required for all IDA countries. In Cambodia, Laos, and Vietnam, a new research program is exploring the linkages between natural resource management and poverty. In order to help build local capacity to mainstream environment into PRSP processes, several national and regional workshops have been organized in Abuja, Nigeria; Johannesburg, South Africa; Nairobi, Kenya; and Tirana, Albania. An initial review of 40 PRSPs indicate that their coverage of environmental issues is still low, but there are good practices emerging; examples include PRSPs for Bolivia, Honduras, Mozambique, and Nicaragua.
- Launched initiatives to apply *strategic environmental analyses* more systematically. Country-level and sectoral analyses explore key environmental challenges, their linkages with development objectives and policy changes, and the institutional capacity of countries to address their priorities. Such analyses have been launched, for example, in the Indian states of Andhra Pradesh, Karnataka, and Uttar Pradesh, as well as in Egypt and Tunisia. In addition, sectoral environmental analyses—such as energy-environment reviews—have been conducted in numerous countries, including recently in Bulgaria, Mexico, Macedonia, Sri Lanka, and Turkey. A review has indicated a steady improvement in the integration of environment into the Bank's Country Assistance Strategies (CAS), which is often a direct result of strategic analyses prepared before the CAS.
- Provided *technical assistance, knowledge, and learning programs* to support policy innovations such as payments for ecological services in countries such as Costa Rica and

El Salvador; developed indicators and programs to meet the Millennium Development Goals; facilitated the positive environmental outcome of privatization in countries such as Bulgaria; and addressed complex cross-sectoral issues such as urban air quality management in Latin America and the Caribbean, East Asia and the Pacific, and South Asia. (For a more detailed description of the learning activities supported by WBI, see page 62.)

same operations (see *Figure*, below). The new system allows a better tracking of environmental lending and mainstreaming in various sectors. According to preliminary data at the end of fiscal 2002, projects with environmental and natural resource management objectives and components represent 14 percent (\$14 billion) of the total Bank portfolio of \$100 billion.

Two categories—pollution management and environmental health, and water resources management—accounted for more than half of environmental objectives, while land management, environmental policies and institutions, climate change, biodiversity protection, and others accounted for the remainder (see *Figure*, top of page 32). In terms of regional distribution, 43 percent of environmental objectives and components were found in East Asia and Pacific region projects. The Latin America and Caribbean and South Asia regions followed, each with 16 percent of all environmental themes.

In fiscal 2002, the World Bank approved 42 projects with environmental and natural resource management objectives, amounting to \$869 million. Examples include the Forest Conservation and Management Project (\$31.3 million) in Tanzania, which initiates an integrated biodiversity conservation strategy for the Eastern Arc Mountains, thus strengthening the country's capacity to coordinate forest biodiversity conservation interventions.

The Bank also helps client countries address regional and global environmental objectives through two global financing mechanisms—the Global Environment Facility (GEF) and the Multilateral Fund for the Implementation of the Montreal Protocol (MFMP). A sizable portfolio of GEF and MFMP projects directly address global environmental concerns such as biodiversity loss, climate change, international waters, ozone depletion, and land degradation.

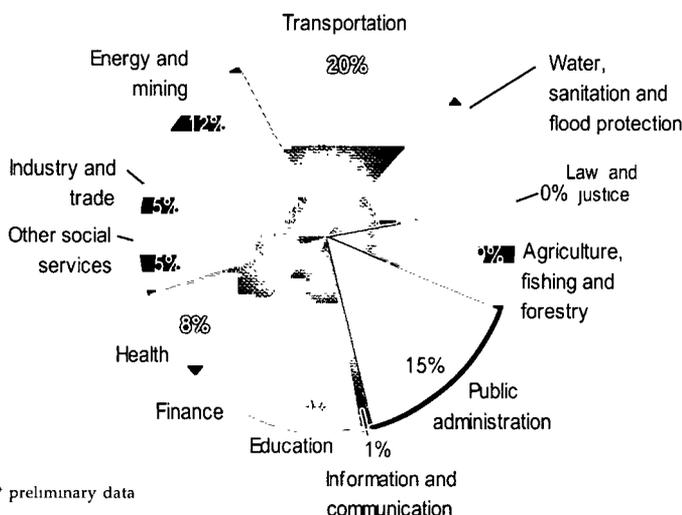
In fiscal 2002, the Bank approved 21 full-size GEF projects with GEF co-financing

## A new look at the environment portfolio

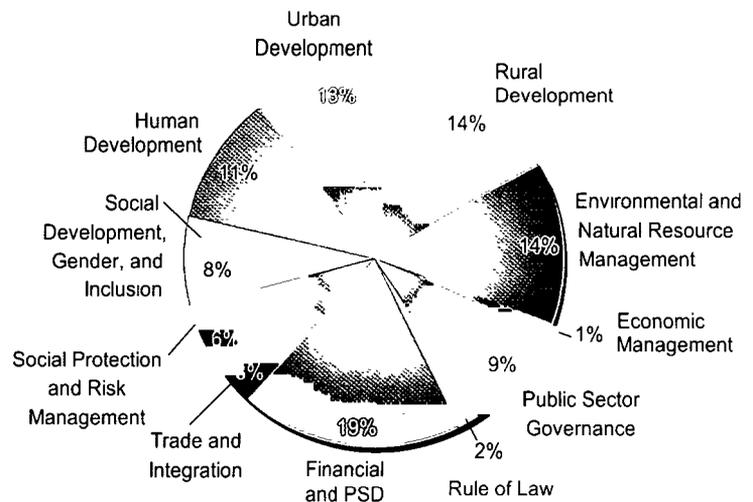
At the core of the World Bank's assistance to client countries is its lending portfolio. In order to better reflect the complexity of its operations, the Bank has introduced a new system of classifying its portfolio. Under this new system, each operation can have up to five sectoral assignments and five thematic objectives. The sectoral and thematic assignments are two dimensions of the

**World Bank Project Portfolio by Sector and Theme, end of fiscal 2002\*\***

Total Portfolio by Sectoral Distribution

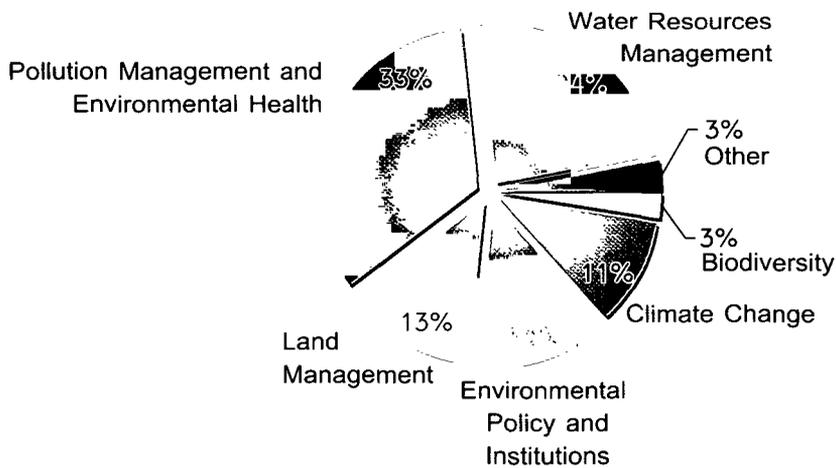


Total Portfolio by Thematic Distribution



\*\* preliminary data

**Composition of World Bank's environment and natural resources management portfolio, end fiscal 2002, (\$14 billion)\*\***



of \$225 million. Examples include the Partnership for Natural Ecosystem Management (PAGEN) Project in Burkina Faso; the Wetlands Restoration and Pollution Reduction Project in Bulgaria; and the Solar Thermal Power Project in India. In addition, 10 new medium-sized projects (GEF grants up to \$1 million) were approved, including the Biodiversity Conservation in the Lower Dniester Delta Ecosystem Project in Moldova. Under the MFMP, the grant agreement of the Thailand Building Chiller Replacement project, approved at \$5 million, became effective in fiscal 2002. This project assists Thailand in improving energy efficiency and reducing greenhouse gas emissions in the building chiller sector, and reducing consumption of ozone-depleting substances.

## The continuing improvement of our safeguard system

Safeguard policies—which are designed to prevent and mitigate undue harm to

people and their environment—are a cornerstone of sound business, and central to the World Bank's support of sustainable development. Since the mid-1970s, environmental assessment procedures and other environmental and social safeguard policies have been systematically applied to Bank projects to avoid and mitigate the potential adverse effects of the Bank's investment portfolio on the environment and vulnerable populations. Nevertheless, as the Strategy pointed out, there is a need for continuing improvement and adjustment of our policies and practices to reflect emerging good practices, lessons learned, and changing lending profiles. The following are key highlights of progress made:

- The new operational policy on involuntary resettlement was adopted in December 2001. In addition, extensive external consultations have been conducted on the indigenous peoples and physical cultural resources policies to inform the draft policies to be presented to the Bank's Board of Directors in the coming year. The new public

disclosure policy, effective since January 1, 2002, has increased the transparency of the work on safeguard policies. According to the policy, category A and B environmental assessment reports, as well as Resettlement Action Plans and Indigenous Peoples Action Plans, are now available to the public in client countries and at the World Bank InfoShop before appraisal of Bank-funded projects. These policy revisions have been part of a broader effort to strengthen safeguard policy implementation, and to convert existing directives into a format that allows a clearer distinction between mandatory policies and procedures and desirable good practices.

- The integrated safeguard system and compliance tracking system have been established and mainstreamed into Bank operations. Safeguard policies have been integrated into project supervision reports, and coordination and consistency across Regions has been improved through the establishment of a multi-departmental team (Safeguard Management And Review Team—SMART). An internal audit of the safeguard system has confirmed that the new system is operational.
- Safeguards risk assessment exercises have been completed by all Regions. These exercises have helped develop appropriate project risk management strategies and resulted in allocation of adequate resources to proactively address safeguard issues.
- There were continuing efforts in fiscal 2002 at harmonization of Envi-



# MAKING SUSTAINABLE COMMITMENTS

## AN ENVIRONMENT STRATEGY FOR THE WORLD BANK

**F**or the first time, the World Bank is consolidating its approach to environmental protection into a single document. The goal of the Bank's forthcoming *Environment Strategy* is to promote environmental improvements as a fundamental element of development and poverty reduction strategies and actions.

# Building a Foundation: Stocktaking, Research, and Consultation

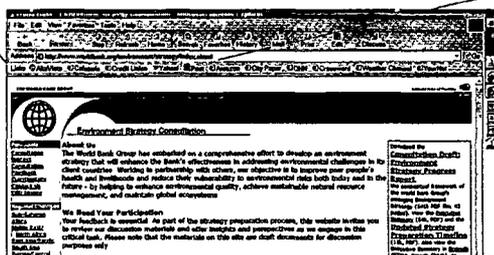
*Making Sustainable Commitments* is the culmination of a two-year effort involving extensive stocktaking, research, consultation, and feedback.

The Bank prepared numerous background papers on the linkages between the environment and issues such as poverty, health, and natural resources management:

- ◆ Internally, the Operations Evaluation Department and the Strategy team reviewed the Bank's experience and record in the environmental area over the past few decades to draw lessons for the Strategy.
- ◆ Each operational Bank Region prepared a Regional Environment Strategy. These reports were instrumental in identifying areas of unique concern to each Region, as well as underlying themes that are common to all Regions.
- ◆ Between May 2000 and May 2001, over 30 formal and informal meetings or working sessions took place in Sub-Saharan Africa, Latin America, the Middle East and North Africa, South Asia, East Asia, Europe, Japan, and North America (see map).
- ◆ Background documents, a discussion draft, and detailed reports on the consultation meetings and outcomes are available at the Strategy Consultation Website (see figure).



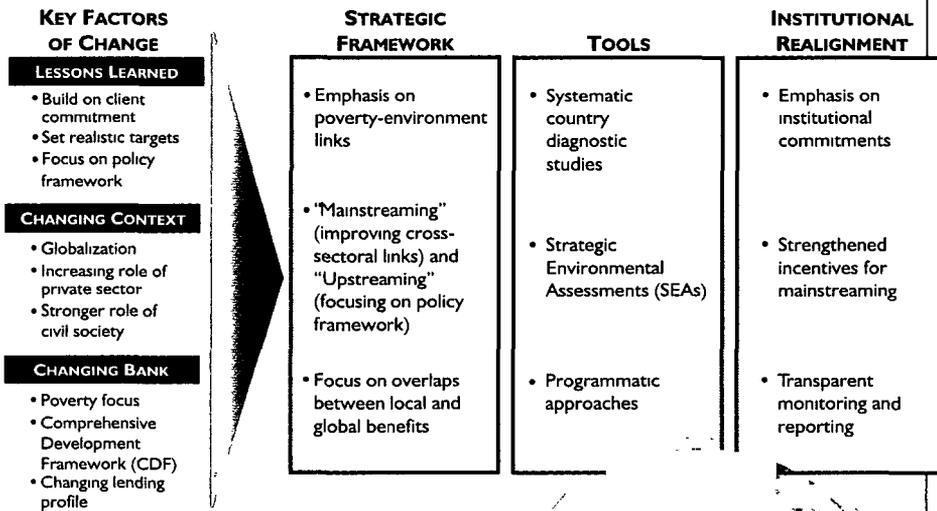
Address @ <http://www.worldbank.org/environment/strategy/index.shtml>



- ◆ The initial draft of the Environment Strategy went through an intensive review process, which is now concluding. The final Strategy will be discussed by the Bank's Board of Directors, and published soon afterwards. Check the Strategy website for publication news.

# WHAT'S NEW IN THE ENVIRONMENT STRATEGY

The Environment Strategy builds upon ongoing efforts and programs. It considers lessons from the past, responds to a changing global context and changing Bank, and deepens our commitment to sustainable development. The new elements of the strategy include a strengthened emphasis on poverty-environment linkages and local environmental concerns; increased focus on tools that help integrate environment into sectoral decisions and policies, and efforts to improve institutional incentives.



# **E**Environment Strategy Background Papers

*Donor Survey of Environmental Aid Effectiveness*

*Health and Environment*

*Mainstreaming Environment in Country Assistance Strategies*

*Natural Resources Management*

*Poverty and Environment*

*Reducing Vulnerability to Environmental Variability*

*Sourcebook on Poverty, Environment, and Natural Resources (for  
the Poverty Reduction Strategy Papers)*

*Urban Air Quality Management: The Transport-Environment-Energy Nexus*

*Urban Environmental Priorities*

*Environmental Indicators Relevant to Poverty Reduction*

These papers are available at the Environment Strategy website.

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**The Environment Strategy web site:**  
**<http://www.worldbank.org/environment/strategy>**

**The ESSD Advisory Service:**  
**Email: [eadvisor@worldbank.org](mailto:eadvisor@worldbank.org)**  
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*All images: World Bank*

Printed on recycled paper using soy inks.

ronmental Assessment principles among Multilateral Development Banks (MDBs).

In fiscal 2002, of the 229 new Bank projects, 18 were classified as Category A, which requires a full environmental assessment. This represents 13 percent—\$2.5 billion—of all new projects in terms of lending amount. An additional 83 projects, 24 percent of all new projects, worth \$4.7 billion, were classified as Category B and required a simpler environmental analysis. Further, there were 14 Financial Intermediary (Category F) projects approved in fiscal 2002, representing 5 percent of all new project lending, or \$1 billion.

## Institutional changes

The Strategy recognized the need for institutional realignment, including changing incentives, reallocating resources, improving our skills, and building effective partnerships. The following illustrate some of the steps taken in this direction.

*Green Awards.* The Environment Department has launched the Green Awards to acknowledge colleagues across the Bank who have pioneered environmental mainstreaming. These awards have been effective in building alliances and gaining support for the implementation of the Strategy (see *Box*, at right).

*Mainstreaming Fund.* In order to support the implementation of the Strategy, the Bank's management approved a Mainstreaming Fund for Environment (MFE), which has played a catalytic role in launching several of the activities described above and facilitating cross-sectoral coordination.

*Staff learning.* Staff learning and training has been an essential part of institutional

### WINNERS OF THE 2002 GREEN AWARDS

Three country directors and five project teams won the 2002 Green Awards, which this year recognized efforts to mainstream the Environment Strategy.

The country director awards went to:

- Orsalia Kalantzopoulos, Country Director for the Caribbean, for her leadership and commitment to promoting the environmental dimension of sustainable development, both internally and with client countries.
- Joseph Saba, the Middle East and North Africa Region's Director for the Mashrek Region, for his contributions in mainstreaming environment in Iran's Country Assistance Strategy and the National Environmental Action Plan for Syria, as well as for environmental projects in the West Bank and Gaza, Jordan, Lebanon, and Iran.
- Luca Barbone, Country Director for Belarus and Ukraine, for pioneering economic and sector work on environmental expenditure reviews in the ECA Region, and for contributing to the inclusion of environmental concerns in the Belarus Country Assistance Strategy.

Awards also were given to five project teams: the Mozambique Poverty Reduction Strategy Paper; Tunisia Northwest Mountainous Areas and Forestry Development Project; China Wai Gao Qiao Thermal Power Plant Project; Costa Rica Ecomarkets Project; and India Mumbay Urban Transport Study and Project.

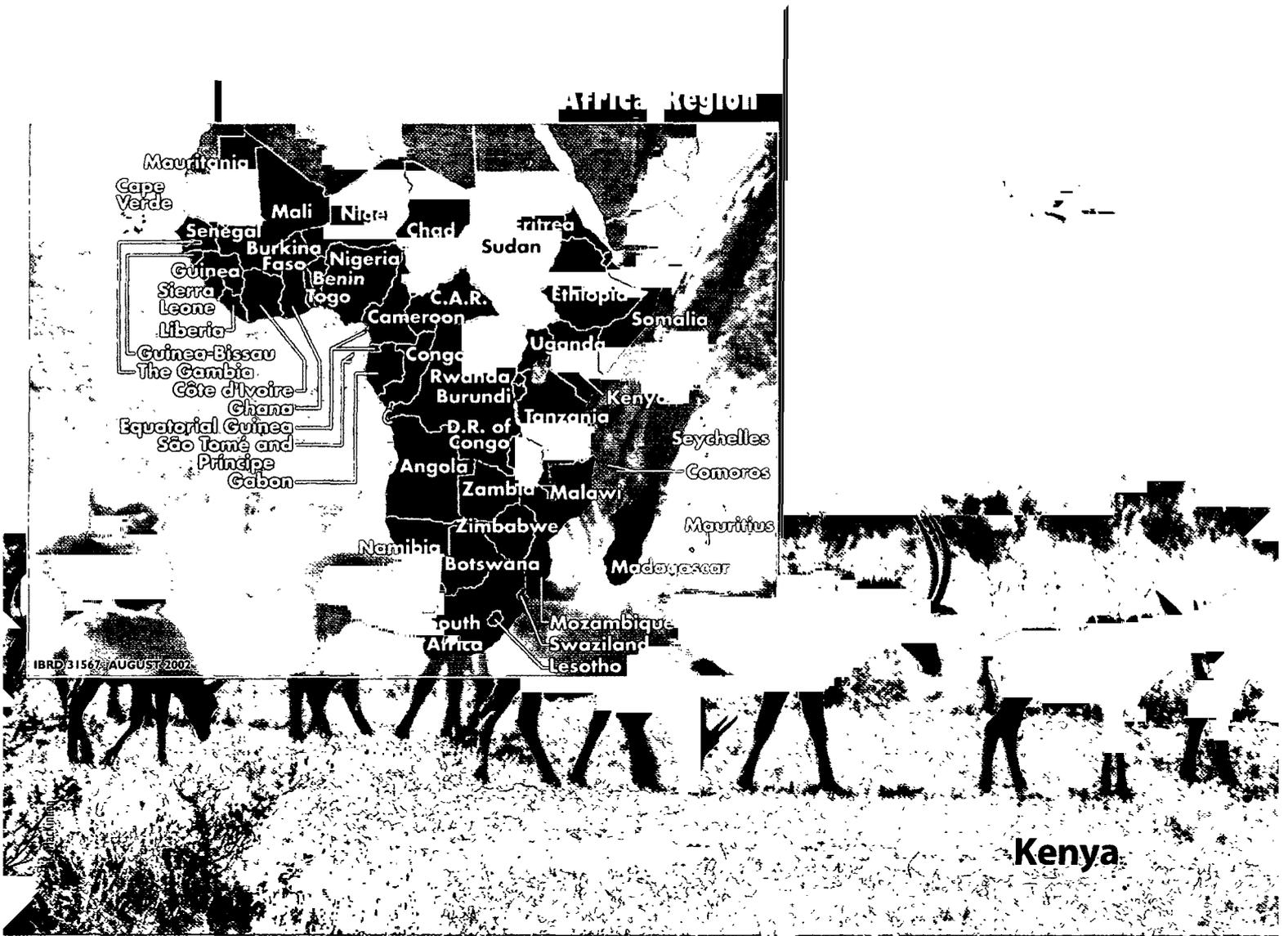
realignment. A comprehensive training program has been implemented for Bank staff with a special focus on safeguard training, which was provided to nearly 1,000 staff members. Through these programs, the knowledge of Bank staff of safeguard policies and their application has significantly improved. In addition, a new training program on poverty-environment linkages has been successfully launched.

*Partnerships.* With the participation of several key development partners, a new Poverty-Environment Partnership has been formed to facilitate a better understanding of poverty-environment linkages, support the mainstreaming of environment into poverty reduction strategies, and build on synergies among the partners' programs.

*Coordination and monitoring.* A dedicated Strategy implementation team has been established in the Environment Department. Strategy coordinators—appointed in the Regional environment units to oversee and monitor the implementation of the Environment Strategy—provide ongoing strategic directions and report on progress.

Strategy implementation—and the necessary adjustment in the Bank's programs—is a gradual process, and requires a concerted effort with our clients and development partners. We have made progress, but large challenges lie ahead.

*This article was prepared by Magda Lovei (202) 473-3986, and Anjali Acharya (202) 458-5298, of the Environment Department.*



In Africa, the World Bank's mission to fight poverty is closely intertwined with environmental protection and natural resources. African livelihoods and national economies rely heavily on agriculture and natural resource utilization. The rural poor are the most affected by inadequate access to natural resources and resource degradation, and have few alternatives to compensate for these losses. Rapid urbanization also is putting enormous stress on environmental systems and resources, and contributing to high rates of environmentally related diseases.

The Bank's support in Africa is guided by the Africa Region Environment Strategy, which emphasizes the need to maintain the environmental goods and services and the ecological systems that are fundamental to sustainable development in both rural and urban areas. The strategy targets the aspects of environmental management and degradation that most affect the poor: management of natural resources for livelihoods and energy, including land and soil, water, and biological re-

sources; environmental conditions affecting health; and vulnerability to environmental disasters and extreme events, including the impact of climate change.

## Integrated ecosystem management

Natural resource management in the Africa Region increasingly builds on an integrated ecosystem management approach. In many cases an ecosystem approach provides opportunities for cross-border cooperation. Examples of initiatives with a strong cross-border element include the Mali, Lake Malawi, and Lake Chad projects, as well as the Mozambique Transfrontier Conservation Areas Project and the recently approved South Africa/Lesotho Maloti-Drakensberg Project.

In Mali, as in much of the Sahel, the degradation of ecosystems and near disappearance of wildlife are linked to increas-

ing livestock numbers, poor management of grazing resources, cultivation of marginal lands, and unregulated hunting. In part, these forces prosper because of a lack of incentives, knowledge, and capacity to pursue more environmentally sustainable alternatives. In 1993, the government instituted decentralization reforms that call for empowering communities to manage land resources. In most cases, the land is shared by several communities, requiring cooperation and coordination. The WB/GEF-financed project supports a holistic approach that includes participatory diagnosis focusing on the causes, rather than the symptoms, of ecosystem degradation, and assisting resource users to develop solutions in the form of communal development plans. The diagnosis extends into Burkina Faso and the Niger delta, reflecting the cross-border nature of both the resources and the people. Following the diagnostic and planning phases, the project will support local projects and ventures for conserving biodiversity—particularly grasses—in these communal areas.

Lake Malawi, which is shared by Malawi, Tanzania, and Mozambique, is both a global biodiversity priority—particularly for its huge variety of endemic fish, including over 800 cichlid species—and a vital local economic resource. Over 95 percent of the lake's fish catch in Malawi is landed by small-scale and artisanal fishing communities within two kilometers of the shoreline. But the lake is in trouble. The fish catch has declined by 40 percent since the early 1990s, and an unprecedented lake-wide fish kill occurred in September–November 1999. With support from GEF and the Southern Africa Development Community, the Lake Malawi Biodiversity Conservation Project determined that the lake ecosystem was in grave danger of permanent deterioration through eutrophication of its upper water layers; that siltation was causing severe impacts on near-shore fish populations; and that

the great majority of the eutrophication and siltation originated from erosive agricultural practices in the catchment, particularly from certain steep escarpments in Malawi and through river courses in Tanzania. The Lake Malawi Ecosystem Management Program will build on this information to maintain and restore the lake ecosystem. Its components include integrated watershed management, fisheries management, mobilization of social and institutional capital, and a regional program to enhance cooperation among the three riparian countries. Local communities will participate in monitoring the progress and impacts of the program.

## Biodiversity conservation

Biodiversity conservation is an essential element of ecosystem management, both in terms of its global significance and the contribution it makes to local livelihoods and economies. Support for protected areas (PAs) continues to be an important element within the biodiversity conservation portfolio, with an emphasis on integrating protected areas with surrounding land uses and ensuring the representativeness, coherence, and sustainability of entire national PA networks.

In Côte d'Ivoire, for example, protected areas are threatened by poaching and agricultural encroachment. Ensuring protection is difficult for several reasons, including limited government expertise and resources, low wildlife densities, and poor tourism infrastructure. The World Bank and other donors are assisting the government to implement its conservation strategy, which is based on the principles that protected areas are public resources that require public funding. At the same time, the protection of protected areas requires an "enterprise-oriented" style of management characterized by the

ability to make and implement timely decisions, set high performance standards for staff and management, and mobilize funds. The government office established to coordinate management of the PA network will collaborate with a wide range of partners, including private contractors, community enterprises, NGOs, community associations, and private tour and safari operators. While tourism and safari hunting are expected to generate some revenues, this will not be sufficient to sustain conservation of the PA network. Continued support from the government and other sources will be required. A GEF grant is supporting the establishment of an endowment fund aimed at providing reliable financing for core expenditures over the long term.

In Madagascar, an autonomous agency with the status of an NGO has been established to manage the national network of protected areas. The National Association for the Management of Protected Areas (ANGAP) is progressively taking direct management responsibility for protected areas that were initially established by other entities, sometimes in the context of integrated conservation and development projects. The World Bank-financed Environment Program (EP2) is supporting ANGAP's long-term vision and management plan. This includes direct investments in the management of about 40 protected areas, as well as supporting decentralized management, improved financial management, and monitoring and evaluation systems. For the third phase, the government is working with donors and international NGOs to formulate a long-term financing plan that will combine income from various sources with strong performance monitoring and cost control.

## Water resources

Freshwater is a vital and increasingly scarce resource in much of Africa, with

water shortages, pollution, watershed degradation, and invasive aquatic weeds threatening human health, agricultural and livestock productivity, and water-based natural ecosystems and biodiversity. The Africa Region Water Resources Management Strategy recommends an integrated, cross-sectoral, catchment-area approach to water resources management. It identifies five priority areas: household water security; catchment area and wetland protection (environmental stewardship); food security; water quality and human health; and intra-national and international cooperation and conflict resolution. To support the implementation of this strategy, the Bank has supported the Southern African Development Community in the preparation of a regional technical report on environmental sustainability in water resources management in southern Africa (see article on page 20 of this issue).

In Kenya, for example, the Bank is supporting water management reforms. Kenya is a chronically water-scarce country with a freshwater endowment of only 647 cubic meters per capita per year, far below the benchmark of 1,700 cubic meters per person that indicates water stress. Water is scarce simply because of the limited natural endowment, climate variability, the growing needs of increasing populations, low levels of water supply

and resource development, poor governance of water resources, and serious degradation of water resources. The main factors contributing to water resources degradation are weak water apportionment and allocation systems; severe and widespread catchment degradation; increasing pollution from municipal, industrial, mining and agricultural sources; uncontrolled use and development of groundwater; and invasive weeds.

The Kenyan government has made a commitment to improving the management and protection of water resources to ensure equitable allocation for domestic and public use, industry, agriculture, energy, livestock, wildlife, tourism, and other uses. The government has begun a process of reforming the water sector, including the development of an autonomous institutional framework that will be solely responsible for the management of water resources. The reforms are based on the globally accepted principles of decentralization, participation, and sustainability of water resources.

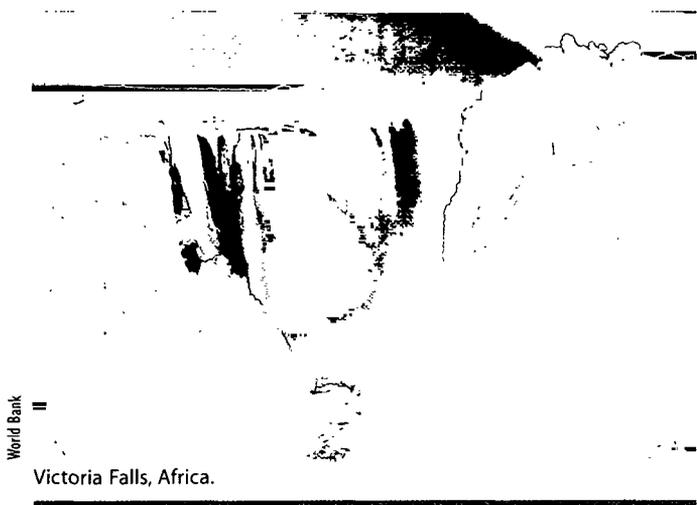
## Urbanization in coastal areas

While the great majority of Africans still live in rural areas, Africa has the fastest urbanization rate in the world. The urban population has grown twice as fast as the population of the region as a whole, increasing from 90 million to 150 million people since 1980. There are now 18 African cities with populations of over 1 million. Urban growth has mainly been concentrated in coastal areas, including the “megapolis” of over 50 million people living along

500 kilometers of coastline from Accra to the Niger Delta. This rapid and often unplanned growth puts enormous stress on environmental systems and resources. One result is that Africans continue to suffer from the world’s highest rates of environmentally related diseases, particularly those associated with a lack of access to safe water and sanitation.

In Mauritania, for example, the share of the population living in urban areas increased from 4 percent in 1962 to 61 percent in 2001, with more than half of the urban population concentrated in the city of Nouakchott. About 35 percent of the urban population is impoverished, residing in substandard squatter settlements without any kind of basic infrastructure or services. The city is lacking urban management skills to face growing service delivery needs such as solid waste management. A new 10-year Urban Development Program (UDP) is focusing on slum upgrading, including improvement in the quantity and quality of water supplied to slum areas, on-site sanitation and fecal sludge treatment, and solid waste collection; land development to prevent emergence of new slums; economic and environmental infrastructure and services for 14 cities; and capacity building in the relevant municipal and national authorities to monitor and manage the environmental and social impacts of the program. A Land Acquisition and Resettlement Action Plan (LARAP), prepared in consultation with stakeholders, includes a process for relocation and compensation measures. An Environmental Monitoring Plan will be executed by the municipal authority under the guidance and supervision of the national services in charge of environmental assessment.

The Africa Region’s Integrated Coastal Management Strategy—*Marine and Coastal Environment of Sub-Saharan Africa: Strategic Directions for Sustainable Development*—outlines an agenda to guide investment in the coastal and marine areas of Sub-Saharan Africa.



World Bank

Victoria Falls, Africa.

## Energy

The Bank's lending for energy in Africa is increasingly shifting from small-scale rural household energy interventions to comprehensive sector reform support programs.

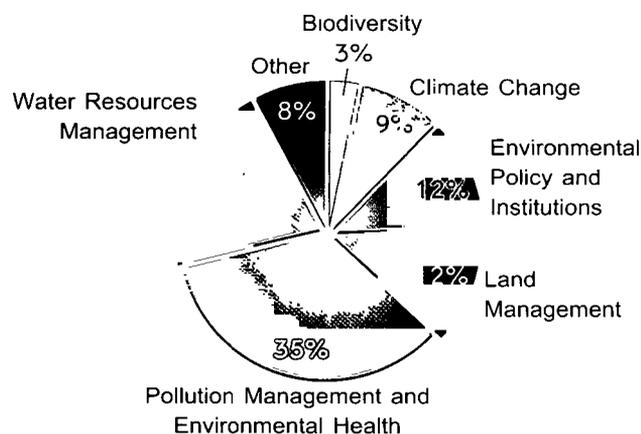
One important building block is the Renewable Energy Strategy for the Africa Region (RESAR). Under the GEF Strategic Partnership of 1999, the Bank committed to expanding support for renewable energy. The Bank's Environment Strategy also emphasizes the need to create synergies between environmental and economic objectives in GEF-financed initiatives, including those in the area of climate change. The RESAR outlines objectives and approaches for supporting decentralized rural electrification and for accelerating rural transformation and development by improving access to electricity and promoting commercially oriented small-scale renewable energy development.

## Partnerships

The Bank's Environment Strategy stresses the need for the Bank to develop and promote strategic partnerships.

For example, the multi-country Lake Chad Basin Commission (LCBC) has received support from a GEF project for cooperative management of this transboundary lake and its surrounding watershed. Through this program, the four member countries are collectively designating 2.5 million hectares of internationally important wetlands. Chad and Niger have already prepared and submitted their shoreline designations and initial management plans to the Ramsar Convention on Wet-

## THE ENVIRONMENT PORTFOLIO IN AFRICA



At the end of June 2002, the active portfolio of environmental lending for World Bank projects in the Africa Region (excluding GEF) amounted to \$1.3 billion. Over half of the lending in the Region is in the pollution management and water resources management categories. In fiscal 2002, seven new World Bank projects with environmental objectives were approved; environmental lending totaled \$146 million.

lands, and Nigeria and Cameroon are in the process of doing so. The Worldwide Fund for Nature (WWF) and the Ramsar Convention Bureau provide technical assistance to guide the transboundary management plan and execution of the micro-grant program. This program provides a framework for cooperation among the governments of Cameroon, Chad, Niger, and Nigeria, the Lake Chad Basin Commission, WWF, GEF, the United Nations Development Programme (UNDP), and the World Bank.

Other important partnership programs in the Africa Region during fiscal 2002 include the Nile Basin Initiative and the African Stockpiles Program (see *Box* on the Africa Stockpiles Program, at left).

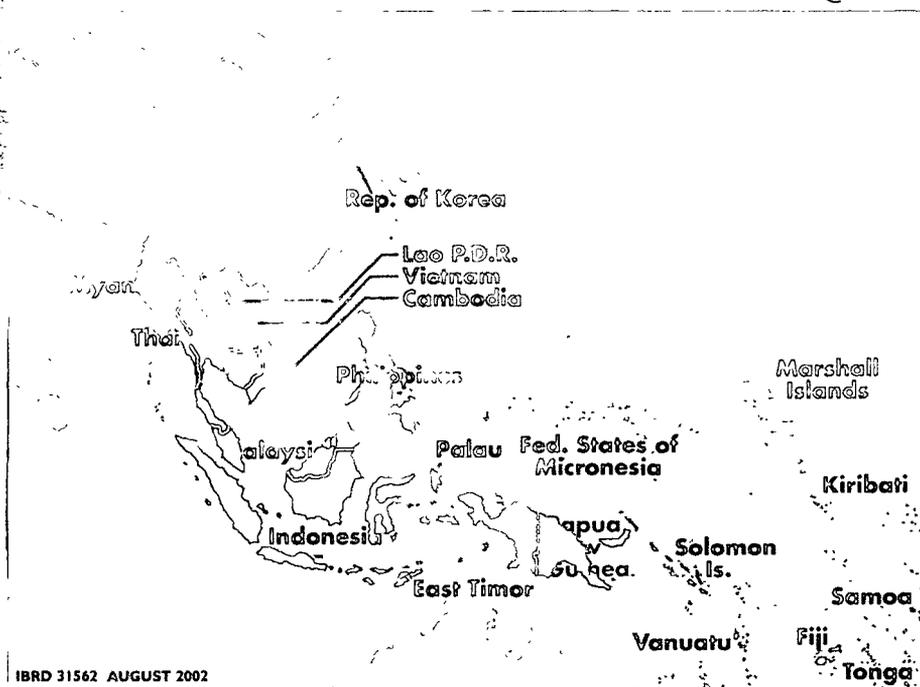
## THE AFRICA STOCKPILES PROGRAM

The Stockholm Convention on Persistent Organic Pollutants (POPs) provided the basis for a major effort to tackle the long-standing and worsening problem of stockpiles of obsolete pesticides in Africa. With an estimated 50,000 tons of stored chemicals—in some locations up to 30 percent of them containing POPs—plus substantial quantities of contaminated soils, these pesticides constitute the region's most critical chemical management problem. Much of the material is stored in densely populated areas under extremely unsafe conditions, often with deteriorating and leaking packaging. Mostly poor and ill-informed populations are exposed to hazardous ground and surface water pollution, contaminated soils and containers, and airborne exposure. In Mali, where the problem is particularly acute, thousands of tons of obsolete pesticides have been dumped in the open in unprotected areas. In some areas, wells and boreholes have had to be closed, further aggravating water shortages. In Africa as a whole, thousands of pesticide-related poisonings are recorded each year, many resulting in death.

The Africa Stockpiles Program (ASP) is a multi-partner, multi-phased regional program that aims to eliminate all stocks of obsolete pesticides in Africa over the next 15 years. The ASP is currently under preparation by a group of NGOs—WWF, the Pesticides Action Network (PAN-UK and PAN-Africa), UN Agencies (FAO, UNIDO, UNEP, Basel Secretariat), regional organizations (UN-ECA, OAU), industry (CropLife International), and the World Bank. Financial support is being provided by the GEF—in its role as the interim financial mechanism of the Stockholm Convention—the Canadian Government, and other partners. The estimated cost of the total program, targeted to start in mid-2003, is \$250 million.

*This article was prepared by Agi Kiss of the Environment and Social Development Unit of the Africa Region, (202) 458-7180, fax (202) 473-8185 AFR website —*  
 <<<http://wbln0018.worldbank.org/afr/afr nsf>>>.

## East Asia and Pacific Region



Mongolia

East Asia's economic success over the last few decades has not guaranteed uniform reductions in poverty across countries. In fact, gains and achievements have been unevenly distributed, with large portions of the East Asian population remaining poor. In addition, environmental conditions are generally worsening, further jeopardizing the prospects for continued growth in the region. The World Bank estimates that the region's costs from environmental degradation range from 4 to 8 percent of annual GDP, with the poor suffering most from the consequences of environmental problems.

For East Asian countries to strike a balance between quality and quantity of growth, they need to achieve political and economic stability; deepen political awareness regarding the importance of the environment and their commitment to pursue environmental sustainability; and establish an effective administrative and regulatory framework to achieve lasting poverty

alleviation and sound environmental protection and management.

Over the past year, the Environment and Social Development Unit (EASES) of the East Asia and the Pacific Region has been supporting client countries in their quest for balance among economic, environmental, and social development objectives by developing and implementing policies and programs that distribute the gains of development in a more equitable manner and build on an emerging global consensus that natural resources and other environmental assets must be managed sustainably.

### Portfolio overview

In fiscal 2002, EASES has mainstreamed environmental concerns into the operations of other operational units, Country Assistance Strategies (CAS), Poverty Reduction Strategy Papers (PRSP), Public Expenditure Reviews (PER), and in other

economic and sector strategies. Nevertheless, in some areas the environment unit continued to manage projects and studies to fill existing gaps in the regional program and to make the best use of skills and expertise resident in EASES and not available elsewhere.

## Safeguards

To reduce and manage adverse risks of projects, the EASES Safeguard Review Team (SRT) ensures that environmental and social risks are systematically evaluated in Bank decisionmaking. In addition, SRT helps identify opportunities for promoting environmental and social benefits and provides a process for full disclosure and meaningful stakeholder consultation. In fiscal 2002, SRT reviewed a total of 65 projects. Of these, 14 were category A projects, which are likely to have significant adverse environmental impacts and require the borrower to prepare an environmental impact assessment, and 27 were category B, which may have potentially adverse environmental impacts and normally require an environmental assessment that is narrower in scope than a Category A project. There were 18 projects in China, 9 in Indonesia, and 8 in both Vietnam and the Philippines. The review team provided extensive support for project preparation and supervision, and continued working with the World Bank Institute to develop and strengthen safeguard training materials.

## Sector work

EASES launched a two-phase study to investigate the complex relationship between environment and poverty. The first phase of the Poverty-Environment Nexus (PEN) study considered how environmental change may relate to the various dimensions of poverty. It attempted to clarify specific aspects of this relationship, and constructed indicators for measuring poverty-environment linkages in Cambo-

## THE EAP EXPERIENCE WITH COMMUNITY DRIVEN DEVELOPMENT

Community Driven Development (CDD) emphasizes giving control over decisions and resources to community groups, often working in partnership with other groups and institutions such as civil society, local and higher-level governments, the private sector, and donors. Working through inclusive and accountable local groups, CDD is seeking to both improve the lives and well-being of all community members, as well as to improve communications and governance within and among communities and with outside institutions.

CDD emphasizes both policy dialogue and operational mainstreaming. For example, at the policy level in Indonesia, a dialogue regarding decentralization is continuing with the government. In the Philippines, the government has expressed interest in developing CDD projects. In the mainstreaming area, the Rural Infrastructure Demobilization/Reintegration LIL in Cambodia, the Northern Mountains Poverty Project in Vietnam, and the Kalahi Comprehensive Integrated Delivery of Social Services Project in the Philippines all seek to mainstream community driven development.

An important example of CDD is the second Kecamatan Development Project (KDP) in Indonesia, which is a continuation of a longer-term participatory program for poverty alleviation that includes two village infrastructure projects and the first KDP. KDP provides unearmarked block grants for poor subdistricts (kecamatan) to support a bottom-up, participatory planning process. The KDP projects are intended to support participatory planning and development management in villages; support a broad-based construction program of social and economic infrastructure; and strengthen local formal and informal institutions by making them more inclusive, accountable, and effective at meeting villagers' self-identified development needs. Results from the first project show that community-managed projects can produce high-quality, low-cost infrastructure provided that information is complete and accessible, that communities retain control over planning decisions, and that a strong facilitation process is in place to promote direct negotiation of conflicting interests.

KDP's basic design is deceptively simple. Its core elements are a fast system of direct cash transfers from a special account to subdistricts, where village representatives hold collective bank accounts; a tiered system of technical and social facilitators; open project menus; a process for technical review of subproject proposals that excludes any higher level review or modification; support for village management of procurement, financial management, and project implementation; and full transparency through a program of disclosure and independent civil society monitoring. During the first year, subprojects implemented in 3,650 villages in 501 kecamatan benefited 1.5 million people. By the third year of the project, over 1,000 kecamatan—out of a total of 4,000 in the country—were involved.

dia, Lao PDR, and Vietnam. The second phase of the PEN Study will maintain the focus on the same three countries, deepening the analysis and further elaborating the relationship between environment and poverty. The findings of the study will be mainstreamed into country-specific Poverty Reduction Strategy Papers (PRSPs).

In fiscal 2002, the *Environment Monitor* series has been strengthened and expanded. These reports provide a snapshot

of key environmental conditions and trends. They also aim to engage and inform stakeholders on key environmental changes. In fiscal 2002, work began on the first issue of the Cambodia *Environment Monitor*. In addition, EASES published the first issues of the *Environment Monitor* for Indonesia, Mongolia, Papua New Guinea and Vietnam, and the third issues for the Philippines and Thailand. The first issues provide an overview of key environmental trends; the 2002 issues for Phil-

ippines and Thailand focused on the problem of air pollution.

As part of the *China Environmental Sector Technical Assistance* program, an assessment of the possible environmental effects of China's accession to the World Trade Organization was completed. The Bank is also supporting an evaluation of the administrative and management capacity of China's environmental protection agency.

The effort to integrate environmental issues into CASs (China and Thailand), PRSPs (Cambodia and Mongolia), and other formal and informal sector activities has also continued over the past year. For the first time in the EAP region, reports such as the *Indonesia Development Review* and *Mongolia Public Expenditure Review* have included chapters on the environment.

## Natural Resources Management

In forestry, EASES is continuing to support the Indonesia Forestry Policy Dialogue by coordinating the donors in their dialogue with the government and preparing selected analyses to update and fill gaps in the analytical underpinnings for the policy reform program. In land policy and use, the Bank is helping the Government of Indonesia (GoI) design a Land Policy Reform Agenda by mobilizing resources; assisting GoI to identify priority issues and organize a national forum for in-depth discussions; and ensuring adequate public consultation for consensus building.

To conserve biodiversity, EASES is assisting its clients through a variety of approaches. It manages major GEF projects in China and Cambodia. Medium-sized projects are focusing on ecosystem approaches to limestone landscapes in Viet-

nam; a five-year targeted research project on the interactions between permafrost melt, biodiversity loss, and herding patterns in northern Mongolia; and a media-based initiative on forests in Indonesia. The Bank's Biodiversity and Environmental Assessment Toolkit has appeared this year in Vietnamese, Chinese, and Indonesian editions.

## GEF and MP

As a multilateral institution, the Bank is one of the implementing agencies of the Global Environment Facility (GEF). By accessing GEF resources to cover the incremental costs of additional actions on global issues, the Bank helps its member countries conserve and sustainably use biological diversity, reduce emissions of greenhouse gases, manage shared water bodies, and reduce emissions of ozone-depleting substances. In fiscal 2002,

EASES developed five new full-size GEF operations. However, despite this achievement, the Region fell significantly short of the GEF Council and Board delivery targets. The region was able to achieve only three of an intended six GEF Council presentations, and only three of eight Board approvals. The collapse of the Thailand program, which was mainly caused by government inaction, accounted for two of the Council and Board shortfalls. In medium-sized projects, three of an intended four submissions were delivered.

In China, many policies and regulations to phase out ozone-depleting substances (ODSs) are either already in place or under consideration. China remains on track to meet its ODS obligations as scheduled. Under the China ODS III Project, one new sub-project (household refrigeration) was approved. Under the China ODS IV

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### THE EAST ASIA CLEAN AIR INITIATIVE

The Clean Air Initiative (CAI) advances innovative ways to improve air quality in cities by sharing knowledge and experiences through partnerships in selected regions of the world. The CAI brings together a range of cross-cutting expertise in urban development, transport, energy reform, environmental management, and environmental health. Since its inception in February 2001, the CAI for Asian Cities has developed and successfully concluded many activities.

A bimonthly newsletter provides regular updates on CAI activities. The CAI website has been revamped. It now includes new features such as online discussion groups and a list serve to facilitate and widen the exchange of information between international and regional partners and specialists on air quality management and related topics. Regional workshops were organized on two-stroke engines, scrappage schemes, inspection and maintenance programs, fuel quality, transport management, and indoor air pollution. The workshop discussions are also available on the CAI web. New activities on regional harmonization of fuel standards and switching to four-stroke engines are currently under preparation.

A regional network of Asian and international training institutes has been established to help coordinate activities and support the delivery of capacity enhancement activities in the region. One of the main activities is a video and web-based urban air quality management distance learning course, which is currently being finalized by the World Bank Institute with contributions from Asian specialists and Bank experts.

There are ongoing discussions to merge the CAI network with the Air Pollution for Megacities in Asia (APMA) Project—organized by UNEP in collaboration with the World Health Organization, the Stockholm Environment Institute, and the Korea Environment Institute—to strengthen CAI-Asia's capacity to implement activities based on the strengths of each of its partners and avoid duplication of effort among donor agencies.

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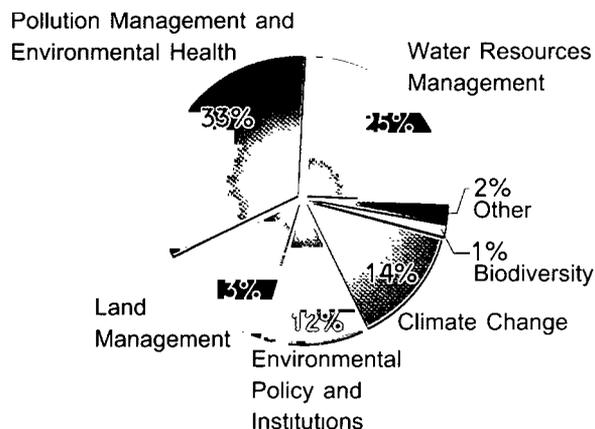
Project, two new sector plans—foam and commercial refrigeration—were initiated for a total commitment of \$278.8 million. In the Philippines, there are ongoing discussions with the government on the preparation of a National CFC Phaseout Plan. In Indonesia, sector plans for aerosol and foam have been launched.

## Environmental partnerships

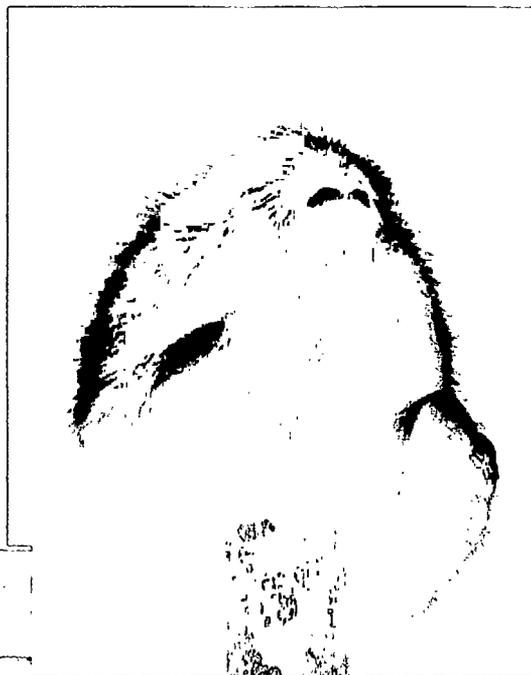
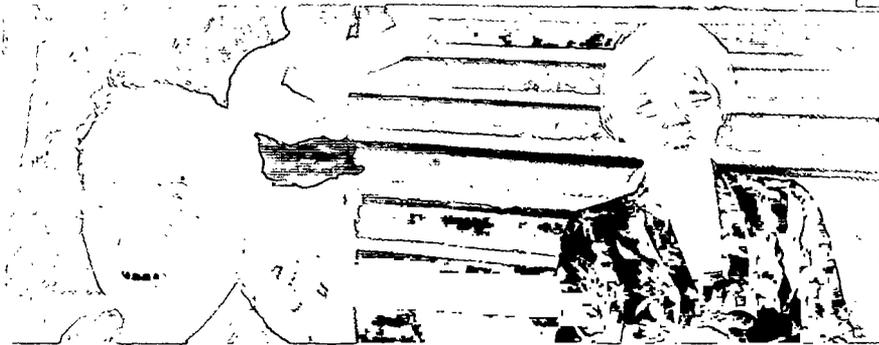
Over the past year, formal and informal environmental partnerships have proven to be an effective tool to work with client countries to address environmental problems. Several forestry activities are under way as part of the World Bank/WWF Forest Alliance, while the World Bank-Nature Council-Birdlife International partnership focuses on major biodiversity concerns. The World Bank-Korea Knowl-

edge Partnership is designed to share Korea's environmental experience with other countries in the region. Currently focusing on industrial pollution abatement and environmental management, this partnership could expand to cover other issues of importance in the region. In Thailand, the Country Development Partnership for Environment has also achieved progress both with the government, other donors, civil society, and NGOs. Finally, EASES is working with the major faiths in the region, producing books and other materials to show the strong links between religious faiths and environmental stewardship.

## THE EAP REGIONAL ENVIRONMENT PORTFOLIO



The active portfolio of World Bank environmental lending in the East Asia and Pacific Region (excluding GEF) is \$5.9 billion. Pollution management, water resources management, and land management account for nearly three-fourths of environmental lending in the Region. In fiscal 2002, six new World Bank projects were approved with total environmental lending amounting to \$102.5 million.



This article was prepared by Giovanna Dore, (202) 473-2934, fax (202) 522-1666, and Surhid Gautam of the East Asia and Pacific Region, with inputs from the EASES Environment Team. EAP website — <<<http://wbln0018.worldbank.org/eap/eap.nsf>>>.

## Europe and Central Asia Region



Tajikistan

After 10 years, the experience of transition countries in Europe and Central Asia demonstrates that while initial conditions are critical, decisive and sustained reforms are key to the recovery of growth. Recovery is also related to the development and strengthening of legal and regulatory institutions.

These findings also hold true for the environmental sector. Countries where growth has resumed have also developed strong capacity to manage the environment and now rely largely on private sector financing to fund environmental investments. Where substantial progress in restructuring industry and realigning the public and private sectors to better fit a market-based economy has occurred, pollution intensity has been reduced as industry modernizes, incorporates pollution abatement techniques, or shifts to less-polluting sectors. Where past liabilities are addressed, foreign investors are more willing to participate in the privatization and modernization of polluting industries.

Other structural reforms that help the environment include promoting incentives for more efficient energy use; reforming municipal water, sewerage, and district heating utilities by eliminating subsidies; improving collection and cost recovery by introducing metering; privatizing consumer and industrial sectors; promoting free trade and reducing agricultural subsidies; and improving natural resource management. Land reform and clarification of property rights also helps the environment, since owners often take more care to ensure the sustainability of their property. Also essential is a transparent legal and regulatory framework to support environmental management and monitoring activities as well as commitment to more seriously involve the public and civil society in environmental decisionmaking.

Within ECA, the Baltic and Central and Southeastern Europe countries are better able to manage environmental issues than countries where the reform process has been sharply interrupted or where the institutional and regulatory framework

is still developing, such as Albania, Bosnia and Herzegovina, FYR Macedonia, and Romania. The Western Newly Independent States (NIS) also have made less progress than some of the Central and East European countries. Central Asia and the Caucasus are among the slowest reformers and include three of the poorest ECA countries.

In comparison with many other parts of the world, pressures on the environment and natural resources are not critical, except in Central Asia. In this arid region, the most serious problem is the availability of water to support energy, irrigation, and drinking requirements. The poor condition of irrigation infrastructure and bad agricultural practices have led to salinization of soils, threatening livelihoods and contributing to land degradation. In many ECA countries access to clean water and sanitation is endangered by the deteriorating financial condition of municipal water and wastewater utilities, but basic access is high in cities. Adequate environmental legislative frameworks are in place, if poorly administered, and with the general decline in population and economic activity, air pollution has been significantly reduced. Environmental liabilities stemming from the Soviet era remain an issue in highly polluting industries. The Caucasus face coastal and land degradation issues. Oil-rich Azerbaijan and Kazakhstan are concerned with oil drilling, pipeline construction, and oil spill prevention and clean-up. Natural resource management and preservation of coastal ecosystems are important issues in some countries. In Russia, which has 22 percent of the world's forests and accounts for 17 percent of total greenhouse gas emissions of Annex 1 countries to the United Nations Framework Convention on Climate Change, forest management and carbon reduction issues are particularly important.

## Strategic priorities and actions

ECA's environment strategy is shaped by the region's overall priorities: (a) facilitating EU accession for the fast-reforming countries; (b) reversing poverty and reviving growth in the NIS; (c) helping to bring about peace and prosperity in the Balkans; and (d) fostering cooperation on regional and global environmental issues.

World Bank activities in the environment sector in fiscal 2002 vary considerably by country. For the EU accession countries and faster reformers, ECA has provided analytical work to assess the costs of meeting EU environmental standards; encouraged policies to strengthen governmental monitoring of compliance with environmental regulations; and assessed the nature and adequacy of environmental expenditures. In less reform-oriented countries, ECA has supported processes to identify the most urgent environmental problems and projects needed for the rehabilitation of services critical to the population's health and livelihoods. All aim to improve quality of life, quality of growth, and the global commons.

Efforts to enhance livelihoods of the poor include projects that support sustainable natural resource management, particularly forests and water; protect people's health from environmental risks and pollution; or reduce people's vulnerability to environmental risks. Ongoing projects promote access to safe drinking water and sanitation, mitigate health threats from toxic substances, support conversion to less polluting heating fuels, promote more efficient heating, improve traffic management, and reduce power emissions. Projects to assist in the recovery from floods and earthquakes also include measures to mitigate against further natural disasters.

Where growth has resumed, ECA is promoting policies to help ensure that it is sustainable. This includes working with governments to better integrate the environment into macro and sector policies, strengthen legal and regulatory frameworks, and help address environmental liability in the context of privatization. In those countries where growth has not recovered, ECA is supporting projects to prevent further declines and lay the basis for recovery in municipal services, natural resources, agriculture and energy.

To improve the quality of the global commons, the ECA Region has supported projects to promote better forest management, reduce greenhouse gas emissions through energy reforms, address transboundary environmental problems within regional seas, and protect corridors of unique biodiversity.

## Project lending

In fiscal year 2002, many new projects were approved—primarily in rural development, municipal infrastructure, transport, or energy—that are not primarily environmental but provide significant environmental benefits. For example, the energy and infrastructure sector in the ECA Region has over 15 environment-related water supply and sewage projects under implementation, and about 10 more under preparation. Energy efficiency is supported by at least 10 active projects, with around another 5 under preparation.

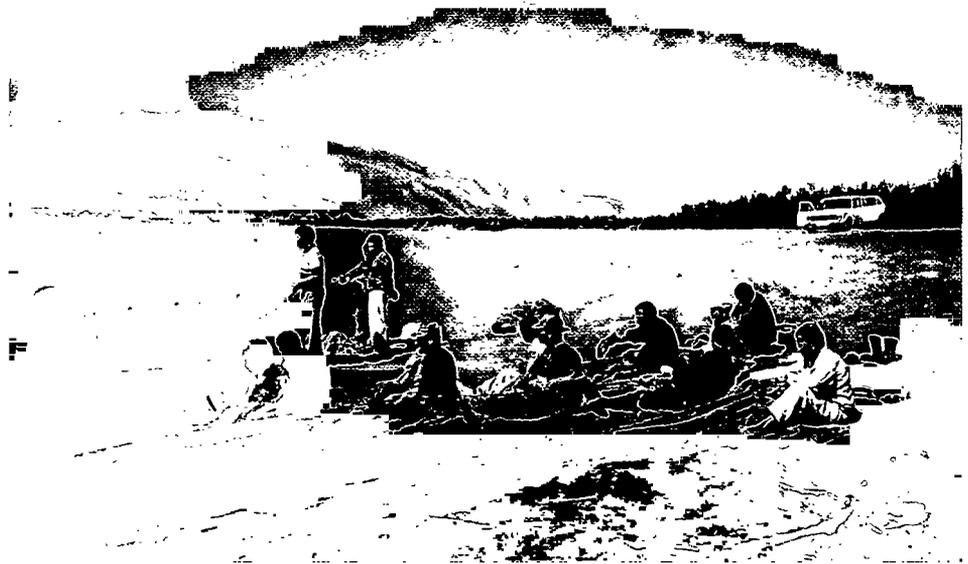
Projects with primarily environmental objectives include those supporting better water resource or forest management, protection of biodiversity, improved rural environmental practices, solid waste management, remediation of hotspots, nutrient reduction of seas and groundwater, and climate change.

*Bank-GEF Lending.* The Bank manages a portfolio of Global Environment Facility

(GEF) trust fund grants in 21 ECA countries in the GEF focal areas of biodiversity, climate change, international waters, and ozone depletion. In fiscal 2002, the Bank managed 24 full-sized (\$231.27 million), 5 medium-sized (\$4.1 million), and 4 enabling activity (\$1.2 million) projects. Of these grants, five were approved in fiscal year 2002, totaling about \$30 million.

For example:

- The Pilot Fishery Development Project in Albania will improve the operation and management of fishing ports, introduce an effective institutional framework for community-driven co-management of marine resources, and restore the country's capacity to manage its aquaculture.
- The Armenia Natural Resources Project, a GEF/IDA co-financed project, supports an integrated approach to land management in the mountain, forest, and grassland ecosystems of the Southern Caucasus (see photo at right).
- The Bulgaria Wetlands Restoration Project, under the GEF-sponsored Strategic Partnership for Nutrient Reduction in the Black Sea and Danube Basin, will restore priority wetlands in the Danube River Basin, establish a comprehensive monitoring system for water quality and ecosystem health, support protected areas management planning, and strengthen capacity to protect and manage biodiversity and natural resources. (see World Bank Black Sea and Danube River website: <<<http://www.worldbank.org/blacksea-danube>>>.)
- The new GEF Croatia Karst Ecosystem Conservation Project will protect and enhance unique mountain, forest, and aquatic karst ecosystems that host regionally and globally important biodiversity. The project will support improvements in



The Armenia Natural Resources Project, a GEF/IDA co-financed project, supports an integrated approach to land management in the mountain, forest, and grassland ecosystems of the Southern Caucasus

- protected area management for five national and nature parks.
- The Syr Darya Control and Northern Aral Sea Project in Kazakhstan will rehabilitate the northern part of the sea by building a dike across the channel to connect with the larger part of the sea. The project will help stabilize the level of the sea, slow the desiccation of lakes and wetlands in the river delta, re-introduce sustainable fisheries, and support increased agricultural production for the local population.
- The Romania Agricultural Pollution Reduction Project, also part of the Black Sea/Danube partnership, aims to increase the use of environmentally friendly agricultural practices to reduce phosphorous and nitrogen pollution entering the river and sea. (see website: <<<http://www.worldbank.org/blacksea-danube>>>.)
- The GEF-funded Azov-Black Sea Corridor Biodiversity Conservation Project in Ukraine will conserve biodiversity by strengthening the protected areas network and mainstreaming biodiversity conservation into adjacent agricultural landscapes.
- The World Bank continues to provide assistance to the Caspian Environment Program (CEP) with the implementation of a new small grants program. The first round of grants will support wastewater treatment, water supply, cement and concrete waste recycling, brackish water culturing of sturgeon, and wind and solar energy projects in the Caspian region (see CEP website for more information: <<<http://www.caspianenvironment.org/>>>).

## Analytical and advisory work

In addition to project lending, the ECA Region of the Bank has also undertaken a number of studies to understand the links between environment and poverty, the costs of environmental requirements for EU accession, and legislative frameworks and institutional capacity for environmental protection.

*Analyzing poverty-environment links.* Efforts were made to ensure that environmental issues were included in the Poverty Reduction Strategy Papers

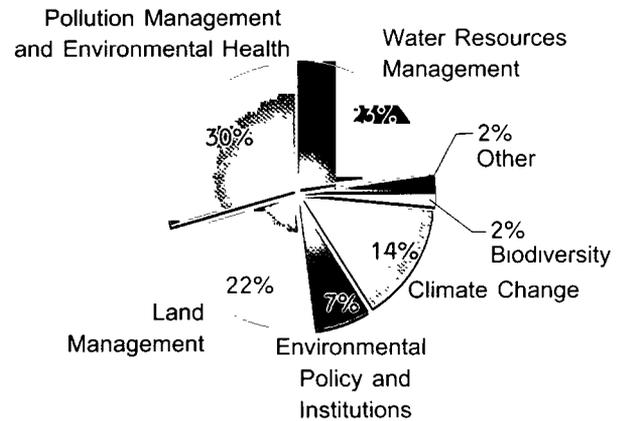
(PRSPs) produced in the past year for Albania, Armenia, Azerbaijan, Bosnia and Herzegovina, Georgia, the Kyrgyz Republic, and the Former Republic of Yugoslavia.

*Studies of environmental expenditures and priorities.* Several studies focused on environmental financing in client countries, including a review of the effectiveness of public expenditures on the environment in Ukraine and several others on the costs of meeting environmental requirements for EU accession. Reviews of the state of the environment in Belarus and Yugoslavia helped prioritize their most pressing environmental issues.

*Legislative framework for environmental protection.* A study assessing environmental assessment (EA) legislation compares national EA systems in 28 ECA countries with those of the World Bank and EU, and recommends ways to improve the EA regulatory framework. (See <<[\[www.worldbank.org/eca/environment\]\(http://www.worldbank.org/eca/environment\)>> under “environmental impact assessment” for findings by country\). Another study examined the effectiveness of EA in Russia and recommended that greater screening and scoping of projects be introduced to prevent unnecessary EAs.](http://</a></p>
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*Supporting institutional capacity building for environmental protection.* Institutional development fund grants have been used to increase environmental legal and regulatory capacity in Albania, Belarus, Uzbekistan, Slovenia, and Croatia. The Bank also oversaw preparation of National Environmental Action Plans (NEAPs) in Croatia and Turkmenistan,

## THE ECA REGIONAL PORTFOLIO



At the end of June 2002, World Bank environmental lending in the ECA Region (excluding GEF) totaled \$1.7 billion. Most of the environmental lending in the Region is in three categories: pollution management, land management, and water resources management (see Figure). In fiscal 2002, eight new projects with environmental components were approved with total environmental lending of \$131 million.

and is now assisting Tajikistan to obtain funding for a NEAP.

## Looking forward...

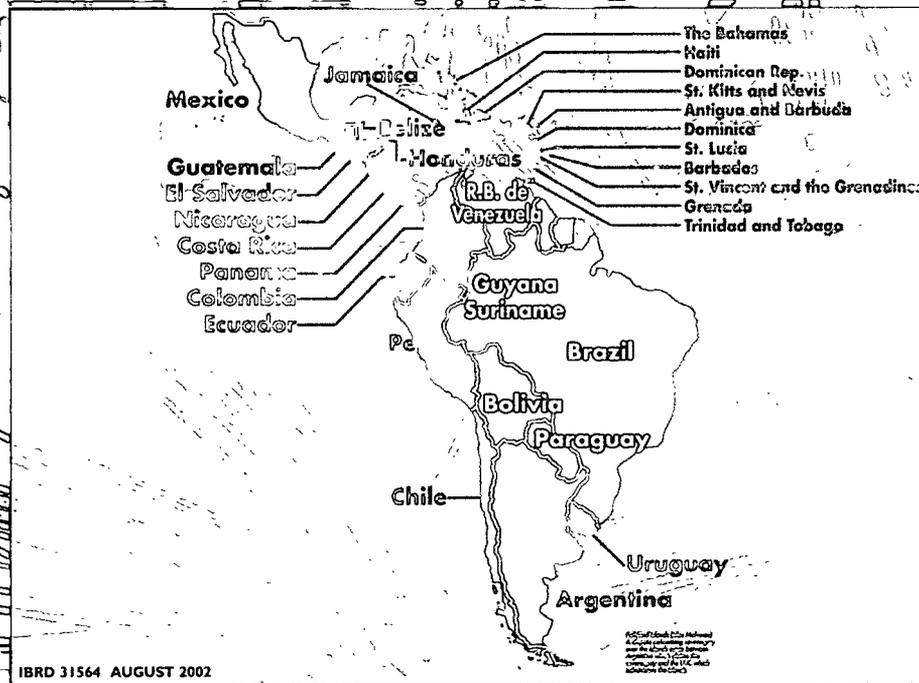
Over the next year, we will work with clients to further mainstream environmental concerns. A major goal in this regard is to produce analytical studies for the “Environment for Europe” Ministerial Conference to be held in Kiev in May 2003. Among these will be a study that attempts to link national plans with environmental Millennium Development Goals (MDGs).



**Nura River Clean-up Project.** This synthetic rubber plant in Kazakhstan is no longer in operation, but its legacy is a serious environmental threat to the population. A mercury byproduct of the plant's production was emitted into the Nura River Basin for years, contaminating the river's water. A project is under preparation to clean up mercury pollution in and adjacent to the river.

*This article was prepared by Jane Holt and Kimberly Heuckroth of Europe and Central Asia's Environmentally and Socially Sustainable Development Unit, (202) 473-6946. More information about environmental activities in Europe and Central Asia can be obtained at <<<http://www.worldbank.org/eca/environment>>>.*

## Latin America and Caribbean Region



IBRD 31564 AUGUST 2002

Bolivia

The Latin America and Caribbean region faces difficult environmental and resource problems in both its rural and urban areas. In rural areas, forest reserves are being depleted and soil degradation is accelerating. In urban areas, poor air quality and inadequate access to clean water, sewage treatment, and solid waste collection directly impact the quality of life and health of the 75 percent of Latin Americans who live in cities. In both rural and urban areas, these burdens fall most heavily on the poor.

To respond to these growing challenges, the Latin America and Caribbean Regional Office (LCR) in March 2001 approved its first explicit strategy in support of environmental improvements in the region. The strategy focuses on aligning environmental concerns with other sectoral strategies—such as rural, urban, transport, and energy—and addressing the region's critical problems, including urban-industrial pollution, mismanagement of natural resources, threats to biodiversity, and climate change.

LCR's Environment Strategy Implementation Working Group has been focusing on indicator development and key country macroeconomic products to be developed in 2002–03. The group is developing an indicator framework that will use the Millennium Development Goals (MDGs) to track implementation of the strategy and progress in mainstreaming environmental concerns into development projects. This framework will provide a results-based measurement of progress.

Efforts to mainstream environmental concerns are occurring in both individual projects, such as the Costa Rica Ecomarkets Project (see *Box* on Costa Rica Ecomarkets Project, at top of next page), and in core country diagnostic work. In the preparation of the Peru Country Assistance Strategy (CAS), for example, a background paper analyzing the country's major environmental issues within a broad macroeconomic context led to proposals to carry out an environmental health analysis examining poverty and environmental health linkages.

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## **COSTA RICA ECOMARKETS PROJECT — MAINSTREAMING ENVIRONMENT IN THE CONTEXT OF LAND, WATER, AND FOREST RESOURCES MANAGEMENT**

The Costa Rica Ecomarkets Project is one of the first Bank projects to support client country institutions in putting in place arrangements involving payments for ecological services. The program promotes payments from individuals and firms who benefit from environmental services to the landowners whose natural capital produces such services—including environmentally friendly land-use decisions relating to carbon management, biodiversity conservation, and provision of hydrological services.

Since project preparation was initiated in 1998, participation of indigenous groups in the project's forest conservation program has risen from 2 percent to nearly 14 percent of the total area contracted. Participation of women landowners and women's organizations has increased from less than 5 percent to nearly 9 percent of total land area contracted.

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The Region's work on environment is also increasingly undertaken in close association with projects in other sectors—including education and health, infrastructure, and rural development. For example, two GEF medium-sized projects to promote sustainable coffee production in Mexico and El Salvador link biodiversity conservation with agricultural activities (see *Box on Shade-Grown coffee*, below). The Montreal Protocol (MP) program works in close association with industrial and commercial operations that utilize ozone-depleting substances in their processes. The program currently finances activities in Argentina,

Chile, Ecuador, Mexico, and Uruguay (see *Box on Uruguay*, bottom right).

### **Projects approved in fiscal 2002**

In fiscal 2002, the Region approved \$177 million in new loans and grants in support of environmental projects encompassing land conservation, water resource management, biodiversity protection, strengthening of environmental institutions, pollution management, and sustainable tourism. Some examples of approved projects follow. Projects provid-

ing assistance to more than one country are presented in the section on regional initiatives.

*Brazil Santa Catarina Natural Resources Management and Rural Poverty Reduction.* The project, approved in April 2002 and supported by a \$62.8 million loan, aims to reduce rural poverty in the state of Santa Catarina while improving the management of natural resources. Poor rural families' incomes and livelihoods will be improved through (a) support for the government's efforts to integrate environmental and social sustainability into development and poverty reduction strategies; (b) enhanced local governance and community participation in decisionmaking; (c) reduced land degradation and better protection of the state's natural resources; and (d) improvements in income-generating opportunities and living conditions for the rural poor.

*Honduras Sustainable Coastal Tourism.* In July 2002, the Bank approved a \$5 million International Development Association (IDA) credit to promote sustainable tourism along Honduras's north coast and offshore bay islands. Based on the results of a national dialogue on sustainable tourism, the project will develop a national strategy for coastal tourism that takes into account social and environmental concerns, such as land security and HIV/AIDS, as well as conservation of the marine environment. The IDA credit will increase environmental planning resources to the Honduran Institute of Tourism, provide technical assistance to coastal municipalities, and finance technical assistance and training to the private sector and community organizations. The north coast of Honduras includes the southern tip of the Mesoamerican Barrier Reef System, the world's second longest coral barrier reef.

*Consolidation of the Protected Areas System in Mexico.* A \$16.1 million GEF grant was

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## **SHADE-GROWN COFFEE — PROMOTING BIODIVERSITY CONSERVATION AND LIVELIHOODS**

The World Bank and the GEF have both been interested in shade-grown coffee because of its potential to simultaneously address local development issues and broader environmental issues. Two GEF medium-size projects in Mexico and El Salvador have supported local efforts to adopt sustainable agricultural practices in the production of shade-grown coffee and biodiversity-friendly activities that increase local participation in the benefits of conservation. In Mexico, the El Triunfo Project has demonstrated that innovative and sustainable market mechanisms allow poor communities to improve their livelihoods through increased incomes from coffee production while also protecting biodiversity.

The Bank is carrying out analytical studies to examine whether these experiences could be mainstreamed into other Bank lending activities in these two countries as well as in Colombia. In addition, a new Clean Development Mechanism project is being prepared—Marketing Sequestered Carbon from Mexican Hillside Shade Coffee—that will support the implementation of a carbon sequestration market based on land-use carbon from shade and organic coffee systems in the uplands of Mexico.

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## URUGUAY MONTREAL PROTOCOL PROJECT

Completed in June 2002, the Uruguay Montreal Protocol Project supported the government's program to reduce ozone-depleting substances (ODS) consumption by about 30 to 40 percent below 1992 consumption levels through the provision of technical assistance and technology conversion. In 1992, Uruguay's consumption of chlorofluorocarbons (CFCs) was 305 tons. By 2001, CFC consumption was reduced to 106 tons, representing a 76 percent reduction and far exceeding its objective. The project achieved its goals using only 21 percent of the anticipated \$4 million budget. Other factors also helped speed the phaseout, including a new local regulatory framework, the natural tendency of the market, and a strong dissemination campaign organized by the government.

approved by the Bank in February 2002 to support the conservation and sustainable use of biodiversity in Mexico through the consolidation of the National System of Protected Areas (SINAP). The project objectives are to (a) conserve globally important biodiversity in selected areas of SINAP; (b) promote the eco-

nomie, social, and environmental sustainability of productive activities in selected protected areas; (c) promote social co-responsibility for conservation; and (d) promote the inclusion of biodiversity conservation and sustainable use criteria in development projects and other practices affecting selected protected areas. The project will extend the protected areas program initiated with GEF funding in 1992 by adding four new protected areas to the program. Eight additional areas will be incrementally added to the current project, with GEF financing anticipated to increase to \$31.1 million after these areas enter the program.

*Initial Assistance to Colombia to Meet its Obligations Under the Stockholm Convention on Persistent Organic Pollutants (POPs).* In June 2002, the GEF Council approved a \$500,000 grant to Colombia to support development of a strategy for handling POPs. An additional \$230,000 will be provided by the Canadian Trust Fund for POPs. The objectives of the project are to (a) develop a National Implementation Plan; (b) promote institutional strengthening; and (c) conduct pilot testing of technologies for soil decontamination.

*GEF Medium-Sized Projects.* Four medium-sized projects (MSPs) also were approved in fiscal 2002, including one in Guatemala (Community Management of the Bio Itza Reserve), one in Mexico (Private Land Conservation Mechanisms), one in Chile (Santiago Foothills Mountain Ecosystem Conservation), and one in Ecuador (Biodiversity Conservation in Pastaza).

## Projects under preparation

A sample of the projects proposed for fiscal 2003 are highlighted below. These include projects that focus on (a) improving health through air-quality related transport operations; (b) improving livelihoods through enhanced natural resource management; (c) promoting an appropriate enabling environment, mainly through cross-sectoral policy reform operations; and (d) promoting equitable solutions to regional and global environmental challenges.

*Mexico Programmatic Environment Structural Adjustment Loan.* The proposed \$202 million loan will support the first stage of the government's medium-term, outcome-based program to promote sustainable development. The objective is to balance socioeconomic development with environmental protection and improvement. The program will focus on (a) mainstreaming of environmental concerns in key sectoral development agendas; and (b) improving the effectiveness and efficiency of local environmental management processes in Mexico.

*Brazil Amazon Region Protected Areas.* The program aims to expand and consolidate protected areas in the Amazon region. Brazil currently has approximately 12.5 million hectares of tropical forest under strict protection in the Amazon region. The proposed project, to be carried out



M. Yan Hwang/loop

Ecuador — Indigenous and Afro-Ecuadorian Peoples Development Project.

in four years, would be the first phase of a 10-year program. The specific objectives of the program under its first phase are to (a) create 18 million hectares of new protected areas; (b) consolidate seven million hectares of existing "strict protection" protected areas; (c) establish and operate an endowment fund for protected areas; and (d) establish a biodiversity monitoring and evaluation system at the protected area and regional levels. Project costs, estimated at \$68.1 million, would be financed through a partnership among KfW, the World Wildlife Fund, the Brazilian Government, and the GEF.

*Mexico Air Quality and Urban Transport.* This project, with support from a \$70 million loan and \$5.8 million GEF grant, would help develop policies and measures that will promote a long-term shift toward more efficient and less polluting transport in Mexico City, supporting the city's Air Quality Management Plan for 2002–10.

## Regional initiatives and projects

Given the need to better address cross-frontier issues as well as to promote information sharing and the exchange of experience, the Region has been increasingly involved in projects and programs that have a regional dimension.

*Caribbean Mainstreaming Adaptation to Climate Change (MACC).* The proposed Caribbean MACC project aims to integrate climate change and variability into sectoral agendas such as tourism, agriculture, fisheries, and infrastructure. MACC will build capacity in the participating countries to develop strategies and measures for adaptation to climate change.

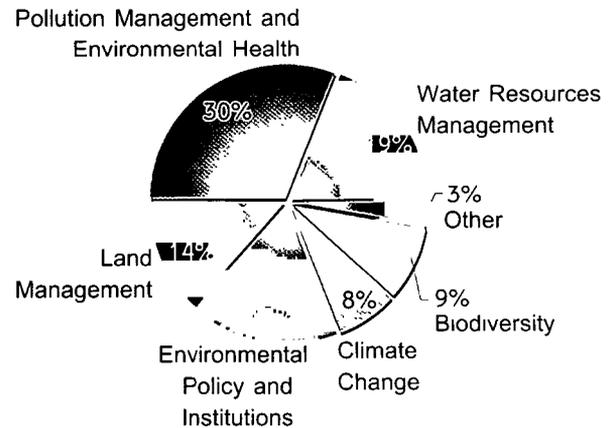
*The Clean Air Initiative in Latin American Cities.* In fiscal 2002, the CAI partnership supported the development of an emis-

sions inventory for fixed sources in Buenos Aires; an emissions inventory for mobile sources in Lima; a clean technologies and fuels information pool; and the preparation of an air quality management toolkit developed in coordination with the US EPA. In addition, the Region continued to support the Clean Air Website, which is managed by the World Bank Institute (WBI).

*Environmental Protection and Sustainable Development of the Guarani Aquifer System.* This recently approved project—GEF's first transboundary aquifer project—will support Argentina, Brazil, Paraguay, and Uruguay in jointly developing and implementing a common institutional and technical framework for managing and preserving the Guarani Aquifer System.

*Mesoamerican Barrier Reef.* The Mesoamerican Barrier Reef System, which extends from the southern half of the Yucatan Peninsula to the bay islands of Honduras, is the second longest barrier reef system in the world. In addition to protecting coastal landscapes and maintaining coastal water quality, over 1 million people living in coastal zones adjacent to the reefs benefit from employment opportunities such as fishing and tourism. To conserve areas threatened by biodiversity loss, an \$11 million GEF grant is providing technical assistance and training to both the public sector and nongovernmental organizations responsible for the planning, management, and monitoring of marine areas. To promote environmental sustainability in the fishing and tourism industries, incentive-based policies are being studied and introduced.

## THE LCR REGIONAL PORTFOLIO

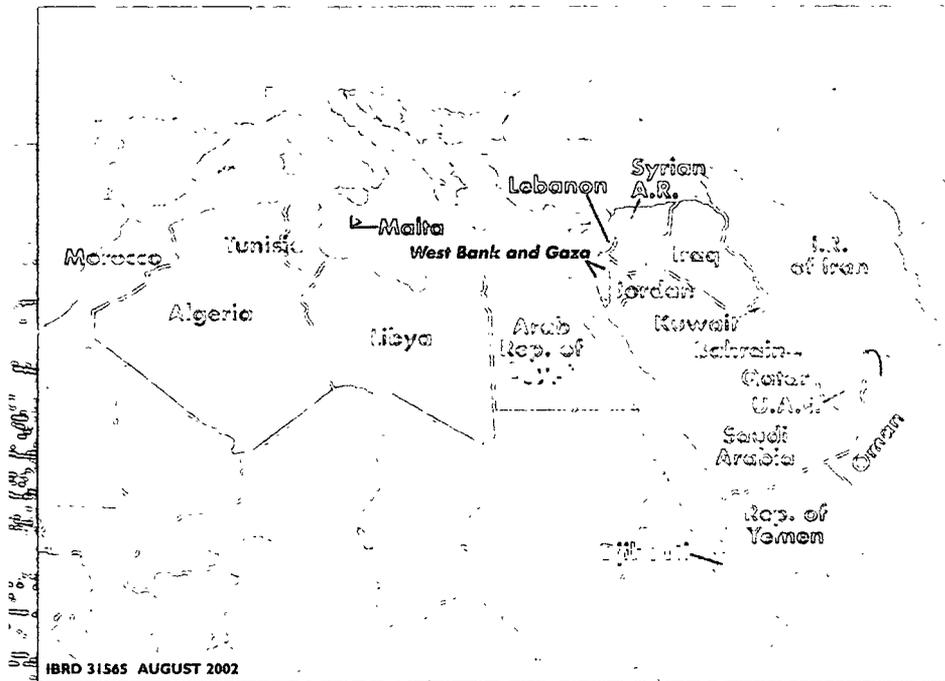


At the end of June 2002, total World Bank environmental lending in the LCR Region (excluding GEF) amounted to \$2.2 billion. About half the total is in the pollution management and water resources management categories. In fiscal 2002, 12 new World Bank projects with environmental objectives—totaling \$177 in environmental lending—were approved.

*Regional Integrated Silvopastoral Approaches to Ecosystem Management.* The objective of this recently approved pilot project is to demonstrate and measure the effects of the introduction of payment systems for environmental services to farmers adopting environmentally friendly technologies in degraded pasture systems in Colombia, Costa Rica, and Nicaragua.

*This article was prepared by Angela Armstrong of the Latin America and Caribbean Regional Office Environment Family, (202) 458-0975, fax (202) 522-3132. LCR website — <<http://wbi0018.worldbank.org/external/lac/lac.nsf>>.*

## Middle East and North Africa Region



## Lebanon

Despite significant and steady improvements over the past decade, future generations in the Middle East and North Africa Region (MNA) will continue to face serious environmental challenges, including declining per capita water resources, the loss of arable land, pollution-related health problems, and weak environmental institutions and legal frameworks.

For example, water is in short supply and the situation is getting worse. Annual renewable water resources per capita are expected to fall from 1997 levels of 1,045 cubic meters per year to 740 m<sup>3</sup>/yr by 2015. Despite growing urban populations, an average of 88 percent of MNA's water resources are allocated to the agriculture sector, with only 7 percent going toward domestic consumption. Water scarcity is aggravated by increased degradation of water quality, which primarily affects the region's poor.

The region also is threatened by the loss of arable land and increased coastal degradation, which are caused principally by unsustainable agricultural practices and unmanaged competition for land and marine resources. Permanent cropland, currently less than 6 percent of the total land area, is shrinking due to serious land degradation and recurrent droughts.

Pollution-related health problems, particularly in urban and industrial centers, represent another challenge. The causes include open municipal waste dumps; the use of leaded gasoline in an aging and poorly maintained vehicle fleet; the inefficient use of fossil fuels for power generation; and particulate and sulfur oxide emissions from industry.

Finally, weak environmental institutions and legal frameworks prevent countries from adequately addressing environmental challenges like the three described above.

## The MNA environment strategy

The World Bank is working with MNA clients to address these challenges through a comprehensive Environment Strategy that was approved by the Bank in 1995 and then updated in July 2001 as part of the Bank's overall Environment Strategy. The basic thrust of the MNA Strategy is to mainstream environmental issues into policies, programs, and projects. The strategy is focused on four areas:

- *Enhancing the quality and effectiveness of countries' environmental and social assessment processes for all development actions, not just Bank projects.* In the past year, for example, Morocco was completing work on its Environmental Impact Assessment (EIA) Decree; Syria enacted an Environment Protection Law, which includes the requirement for EIA preparation; evaluations of Environmental Assessment systems were completed in nine MNA countries; Lebanon conducted 18 awareness seminars on Environmental Assessment; Egypt was completing an Environment and Energy Review (EER) that includes a Sectoral Environment Assessment (SEA) for the energy sector; and Jordan initiated a strategic environment assessment in the water sector.
- *Demonstrating the economic importance of a clean environment by undertaking studies to assess the cost of environmental degradation, as well as analytical work on identifying linkages between environment and trade, and environment and poverty reduction.* In the past year, Algeria completed its National Environmental Action Plan (NEAP); Yemen prepared a background report on poverty and environment and integrated it into the Yemen PRSP; studies on the cost of environmental degradation were

completed for Algeria, Egypt, and Tunisia; and two policy notes were prepared on trade, environment, and competitiveness, and on the impact of proposed cadmium content regulations on the fertilizer industries in southern Mediterranean countries.

- *Integrating environmental components into targeted sectoral investment projects, as well as global environmental areas such as the protection of biodiversity and the reduction of greenhouse gases.* In the past year, water quality and water re-use components were included in the Beka'a Region Water and Wastewater Project in Lebanon; the GEF-supported Tunisia Protected Areas Management Project was approved; environmental liability requirements were incorporated in the Third Economic Competitiveness Adjustment Loan for Tunisia; a solid waste management study was conducted for all countries; a Decision Note on solid waste management in Algeria was prepared; and draft standard bidding documents—including environmental performance requirements—were prepared for solid waste management projects.
- *Developing "Monitoring and Evaluation" (M&E) systems, as well as indicators to measure progress at the project/program and strategy/policy levels.* Environmental Country Profiles for MNA countries, which will capture indicators through a live database and highlight major topics of operational relevance, are coming soon to the worldwide web. Look for their links on the MNA Environment website <<[www.worldbank.org](http://www.worldbank.org)>>. They will allow external browsers to quickly find links to information, including major environmental challenges facing the country; key environmental indicators and statistics; legal and institutional frame-

works; and other material on international environmental conventions and project funding.

## Non-lending services

As demonstrated above, MNA non-lending services are also fostering environmental mainstreaming through cross-sectoral coordination and communication as well as strengthening mainstreaming efforts between the ministries of environment and sector ministries and private and public sector entities. For example:

- Studies on the cost of environmental degradation, which were financed by the Mediterranean Environmental Technical Assistance Program (METAP), will enable the Ministries of Environment in every country to present their priorities in a form and substance understood by Ministries of Finance and Economy.
- To enable the chambers of commerce, industries, and Ministries of Trade to understand the effect of environment regulations on trade, MNA is financing a rapid assessment on the potential effects on output, exports, and imports of compliance with more stringent environmental standards across several economic sectors in six countries.
- To strengthen cooperation between the Ministry of Environment and Ministries of Water Resources and Irrigation, MNA has launched a joint thematic review on water quality issues in Bank-financed projects in Egypt, as well as a strategic environmental assessment for the water sector in Yemen.
- To assist the Bank and its clients focus on progress that can be measured on the ground, a country environmental analysis is being prepared in Tunisia and Egypt.

## Regional partnerships

MNA continues to work closely with a number of regional programs in order to promote partnership with and among the MNA countries and foster the mainstreaming of environmental issues on a regional level.

The Mediterranean Environmental Technical Assistance Program (METAP), which assists in project preparation and capacity building in selected regional environmental management activities, is an instrument for implementing the MNA Environment Strategy. METAP serves 15 Mediterranean countries and is sponsored by the World Bank, the European Commission, the European Investment Bank, UNDP, the Swiss Development Cooperation, and The Government of Finland. METAP beneficiaries in the MNA region are Algeria, Egypt, Jordan, Lebanon, Libya, Morocco, Syria, Tunisia, and West Bank and Gaza.

The MNA Regional Water Initiative (RWI) is designed to address critical water issues in MNA and assist the countries in the process of water sector reform. Work is under way on groundwater and aquifer management, public-private partnerships for irrigation water management, and on water, food security, and agricultural policies. These activities are being carried out under a partnership program with the Secretariat of the 3rd World Water Forum, which will be held in Japan in March 2003.

The Regional Dry Lands Management Project is another effort to bring together countries to exchange information and undertake research on dry lands. It continues to develop field activities and elicit donor support for developing solutions for natural resource degradation. As part of the Middle East peace process, this program links scientists and planners—from Egypt, Israel, Jordan, Tunisia, and the

West Bank and Gaza—so they can share experience and expertise in desert land management.

The Gulf of Aqaba Environmental Action Plan, which closed on June 30, 2002, succeeded in equipping the Aqaba region with a strong Environmental Commission with regulatory authority and producing and legalizing essential environmental regulations, including enforcement of environmental assessments. In addition, this project has been an instrumental contributor to the environmental peace process initiative that links Egypt, Jordan, and Israel in collaborative mechanisms to strengthen capacity to protect marine biodiversity and the coastal zone.

The Red Sea and Gulf of Aden Environmental Strategic Action Program (SAP) is a partnership of the littoral states—Djibouti, Egypt, Jordan, Saudi Arabia, Somalia, Sudan, and Yemen—and international agencies. It aims to preserve the fragile Red Sea/Gulf of Aden environment by preventing pollution and unplanned coastal development. The program is implemented by the Regional Organization for the Conservation of the Environment of the Red Sea and Gulf of Aden (PERSGA) and supported by a \$19 million GEF project jointly executed by the World Bank, UNDP, and UNEP through PERSGA.

## Looking ahead

Looking ahead, the challenge is to build on the progress made over the past seven years by ensuring that the results of activities and projects undertaken reflect, in both preparation and implementation, the environmental priorities of the MNA countries through the application of the MNA Environment Strategy. In fiscal 2003, key lending activities will include:

- In Iran, an institutional strengthening and capacity building project for the

Department of Environment (see *Box* on Iranian capacity building, below)

- In Tunisia, the Northwest Mountainous Areas & Forestry Develop-

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## IRANIAN INSTITUTIONAL CAPACITY BUILDING

Iran's rapid growth over the last few years has resulted in worsening environmental problems that are seriously affecting public health and well-being. Major cities such as Tehran, Mashhad, Isfahan, Tabriz, and Ahwas, which contain nearly 60 percent of the population, face ambient air concentrations that exceed World Health Organization (WHO) guidelines and range from 40 percent to 340 percent over maximum allowable limits. Industries in the country emit more than 450,000 tons per year of sulfur dioxide and 100,000 t/year of total suspended particulates (TSP). Air pollution is causing respiratory and allergic ailments in an estimated 20 percent of the population, especially children. Water quality is deteriorating due to the disposal of untreated sewage, industrial effluents, and agricultural runoff. Cities generate about 15 million tons of municipal solid waste annually, but urban areas lack appropriate sanitary landfills. Industries in Iran produce about 100,000 t/year of hazardous waste, but there are no controlled hazardous waste disposal facilities in the country.

The Government of Iran is already addressing the environmental problems facing the country. It has requested World Bank assistance to supplement these efforts by strengthening the capacity of the Department of Environment (DOE), the lead agency responsible for environmental protection in the country. The World Bank-supported Environmental Management Support Project (EMSP) represents the first phase of a long-term effort by the government to improve environmental management in the country. Its main objective is to enhance the capacity of the Department of Environment (DOE) and other related agencies to plan, monitor, and enforce environmental regulations and action plans.

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## TUNISIA DEVELOPMENT PROJECT

The **Tunisia NW Mountainous Areas & Forestry Development Project** addresses the important problems of rural poverty and natural resource degradation. By using a participatory approach, it will strengthen farmers' planning and implementation capacity, and improve the responsiveness of rural service agencies to farmers' needs. The project will support development of a participatory approach to watershed rehabilitation in about 50 micro-catchments in the Governorates of Beja, El Kef, Siliiana, Jendouba, and Bizerte over a six-year period. Treatments—including improved range management, improved fodder production, soil and conservation works—will be selected and implemented with the participation of the local population. The project will also provide such basic infrastructure as feeder roads, potable water, health centers, and schools.

ment Project addresses the important problems of rural poverty and natural resource degradation (see *Box on Tunisia Development Project*, above)

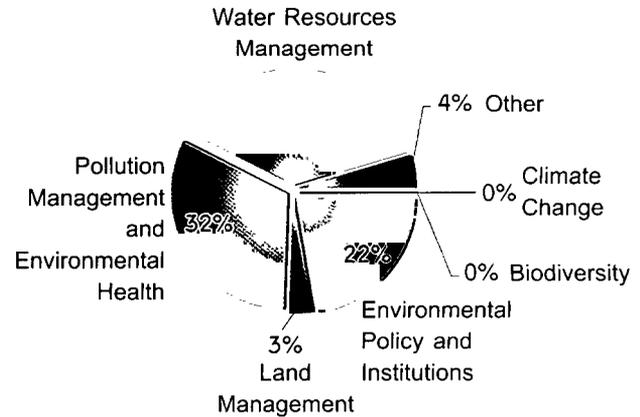
- In Egypt, the Second Matrouh Natural Resources Management Project includes a GEF component on protecting natural habitats

- In both Algeria and Iran, solid waste management operations are being designed that build on the lessons learned and avoid pitfalls experienced in similar projects in the West Bank and Lebanon.

Key non-lending services will include:

- In Tunisia and Egypt, completing the country environment analyses
- In five MNA countries, completing studies on the cost of environmental degradation and organizing a regional conference to discuss the results and recommendations
- In Jordan, completing a strategic environment assessment (SEA) in the water sector, and initiating a similar assessment in Yemen
- In Egypt, initiating an environment-poverty linkage activity
- In Morocco, initiating a country environment analysis

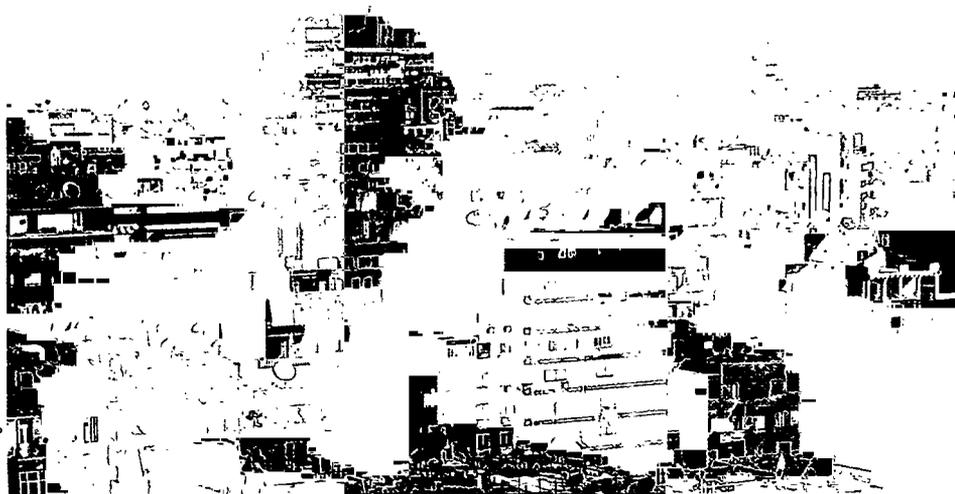
## THE MNA REGIONAL PORTFOLIO



At the end of June 2002, World Bank environmental lending in the Middle East and North Africa Region (excluding GEF) totaled \$591 million. The bulk of the lending is in the water resources management and pollution management categories. In fiscal 2002, two new projects with environmental objectives were approved, with environmental lending totaling \$21 million.

- Starting implementation of a regional solid waste capacity building project financed by the European Commission
- Preparing a series of policy notes on the impact of environmental regulations on trade and competitiveness
- Continuing the regional EA training program, with special focus on environment safeguards and on the implementation of the environment management plans in Bank-financed projects.

For a complete copy of the MNA Environment Strategy as well as up to date information on environment activities in the MNA Countries, please visit the World Bank's MNA and Environment websites <<[www.worldbank.org](http://www.worldbank.org)>>.

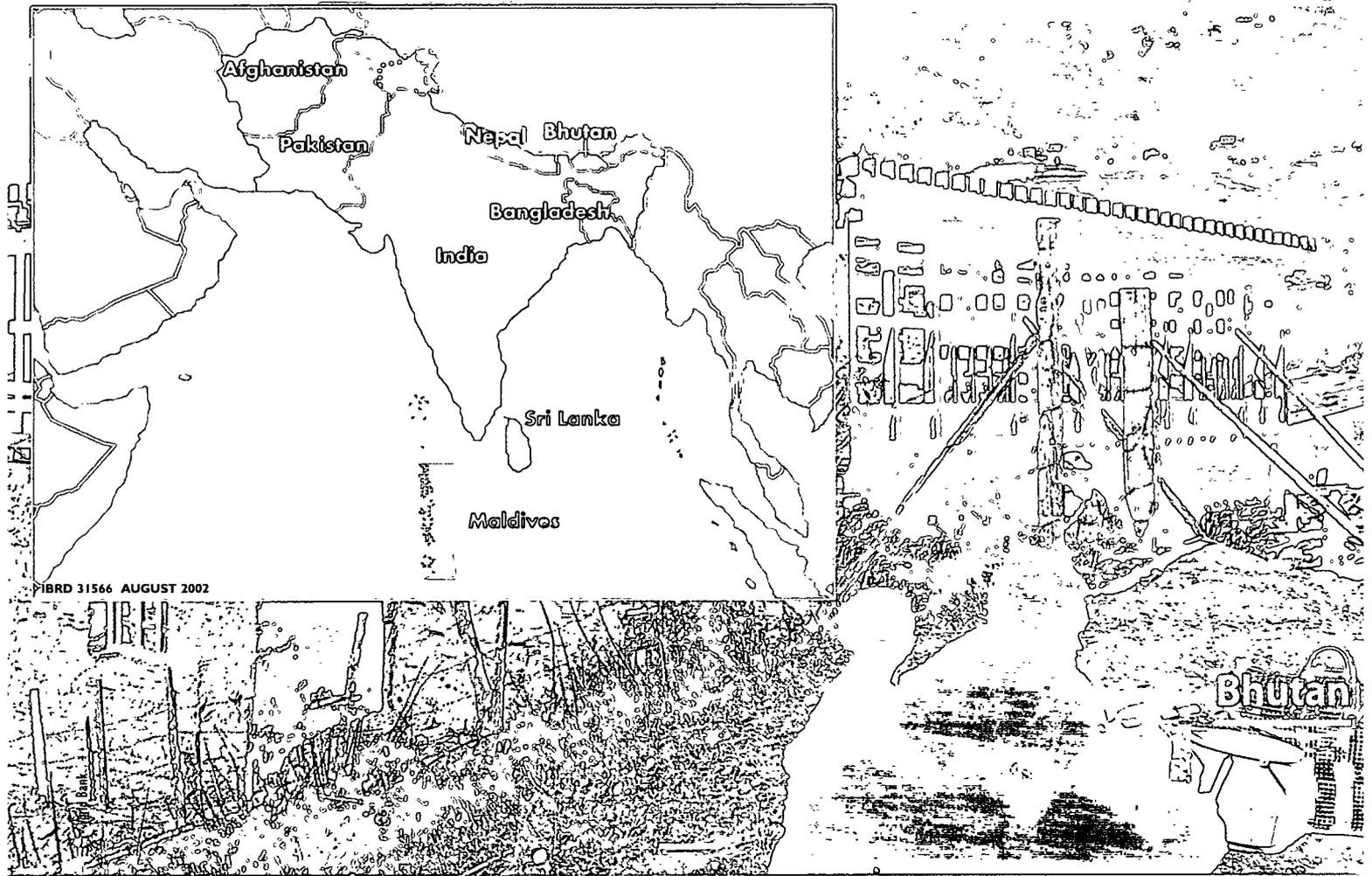


Cairo, Egypt.

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*MNA website — <<<http://tobl0018.worldbank.org/mna/mena.nsf>>>.*

## South Asia Region



IBRD 31566 AUGUST 2002

Achieving the global Millennium Development Goals will not be possible without significant progress in human, economic, and infrastructure development in South Asia. India alone accounts for about 23 percent of the world's annual deaths of children under 5, and meeting the global target of reducing infant and child mortality by two-thirds by 2015 will require significant progress in this region. This in turn will require tangible progress in dealing with difficult water, sanitation, indoor air, and urban air pollution issues. Since nearly a fifth of the overall burden of disease in South Asia is rooted in environmental issues, the challenge is immense, but critically important for the countries and the people of the region.

### A cross-cutting approach

Experience since Rio has clearly shown that the road to a better environment is not always through interventions that are purely environmental in nature. This is particularly critical in

South Asia, where most environmental problems are rooted in poverty itself, and compounded by complex governance, cultural, and political issues. Every government intervention, whether an investment project or policy measure, must balance not only the competing demands for resources, but also the environmental and sustainability aspects—a challenge the region is beginning to accept.

In the Bank's work in the region, environmental and social management approaches can and do often become "integration agents." For example, consider rural water supply and sanitation. While provision of potable water to the region's rural areas remains an important development objective, other aspects must be considered in rendering rural water supplies sustainable. For most of the region, this means, first, the development of capacity to deal with water quality issues—particularly as several countries are dealing with widespread arsenic contamination, and major parts of India and Pakistan have high levels of fluoride. Furthermore, sustainability of

supplies often depends on the capacity of local communities to maintain the infrastructure and to handle social issues associated with managing a shared resource. Community forestry projects also raise fundamental resource management issues that cannot be solved without full and careful resolution of social issues at the local level.

The notion that dealing with environmental issues slows down development is also quickly losing credence, even in the most urgent situations. A case in point is the Bank's recent efforts in Afghanistan, where environmental issues have been fully integrated into the emergency recovery programs developed to assist the reconstruction of a shattered country (see *Box*, below on Afghanistan). This follows in the steps of an environmental management framework that was developed to better integrate environmental planning parameters into the Bank-supported reconstruction work in the Indian state of Gujarat that followed the devastating earthquake in January 2001. In effect,

there is increasing recognition of the importance of the sustainability aspects of project design, even in the difficult circumstances of reconstruction. Why? Because the long-run benefits of improved standards are becoming more clear.

The region is making significant strides in capturing environmental outcomes through sectoral interventions, above and beyond the "do-no-harm" requirement of the Bank's environmental and social safeguard policies. The magnitude of the environmental challenge itself is possibly the most important determinant of strategy: change has to be pursued through early interventions—upstreaming—and through integration into other projects—mainstreaming. There are numerous examples where mainstreaming environmental management is evident, such as the emerging strategies being developed for dealing with the pervasive issue of indoor air pollution (see *Box* on India, at right). Another is the strategic environmental analysis being done in selected Indian states in the context of World Bank

## INDOOR AIR POLLUTION — FIGHTING A SIGNIFICANT HEALTH THREAT TO WOMEN AND CHILDREN IN INDIA

India currently bears the largest burden of indoor air pollution-related health problems in the world, due mainly to the fact that 75 percent of its households use wood, dung, crop residues, or a combination of biomass-based fuels for cooking. When used in simple household stoves, these fuels emit considerable amounts of airborne pollutants, exposing those nearby to much higher concentrations of harmful particulate matter than in the ambient air of most polluted cities. Acute respiratory infections in children are strongly associated with this exposure. Not surprisingly, women who cook on biomass stoves for many years exhibit a higher prevalence of chronic lung disease, pregnancy-related problems, and cataracts. As a result, an estimated 500,000 women and children, mostly from poor rural families, die in India each year, accounting for 25 percent of indoor air pollution-related deaths worldwide.

A recent Bank study—*India: Household Energy, Air Pollution and Health*—found that the transition from traditional biomass fuels to modern fuels, such as kerosene and LPG, would have a significant impact on lowering exposure for all household members. Improved biomass stoves—and cleaner biomass-based fuels—will continue to be an important option for reducing exposure in the short and medium term. Health benefits can be further enhanced with simple housing improvements, such as a separate kitchen and better ventilation. Last, but not least, improving the status of women and empowering them to make choices about the type of stoves and fuels they use can be a particularly effective intervention.

adjustment lending, sectoral reforms, and accelerated growth.

A third example is the phaseout of lead from gasoline. Many South Asian nations are moving toward banning the use of lead in gasoline. Bangladesh and India

## REBUILDING AFGHANISTAN

War, political instability, and weakly implemented resource management policies have taken their toll on Afghanistan's natural resource base. Recent fighting has only accelerated historic trends in environmental degradation, particularly deforestation, overuse of land resources, and the related problems of erosion and desertification. Afghanistan has historically been prone to a variety of natural disasters, including droughts, floods, landslides and earthquakes, and the accelerating environmental degradation has increased their magnitudes and impacts on the people. With the return of peace, millions of refugees are expected to resettle in Afghanistan, particularly in urban areas, thus exacerbating pressures on the environment and the natural resource base. Health problems associated with poor water, lack of sanitation, and poor solid waste management, are expected to worsen.

As donors work to help rebuild Afghanistan, these environmental concerns are starting to be addressed as well—particularly in urban areas. Even while recognizing the urgency of reconstruction efforts, and the uncertain security situation, an Environmental and Social Safeguards Framework has been developed for the initial reconstruction operations. Some operations, such as the Community Empowerment and Public Works, Infrastructure and Education Projects, are already under implementation. The Framework is designed to ensure due diligence in managing potential environmental and social risks, by providing general guidelines and specific procedures to be integrated into the implementation of World Bank-financed emergency reconstruction operations.

have already banned lead in gasoline totally. Nepal, which imports gasoline from India, is consequently lead-free, and Pakistan has adopted a plan to eliminate lead in gasoline in the near future. This response has been prompted by the emerging epidemiological evidence demonstrating the adverse health impacts of lead, even at exposure levels previously considered safe. The latest success story is in Sri Lanka, which recently decided to move the official target date for gasoline lead elimination from 2010 to 2002.

## On the global environment front

Pursuing global environmental objectives—using strategies that also bring local and regional benefits—has been at the core of the region's operational strategy for some time. A number of the Bank's sectoral strategies also capture global environmental benefits by default, such as Bank-wide initiatives on power sector reform, energy efficiency, and renewable

energy. Across South Asia, the reform and efficiency dialogue is a significant part of the energy sector strategy. In addition, regional activities and programs on urban air pollution, clean fuels, and even indoor air pollution all capture significant global environmental benefits, while leading to direct local benefits as well. These types of interventions will continue to receive significant attention over the coming years, especially as they also contribute to progress in meeting the region's Millennium Development Goals.

More targeted and issue-specific global efforts complement sector-level interventions. Experience under the Montreal Protocol has confirmed the importance of establishing solid partnerships, while at the same time retaining program flexibility. In India, the Bank and the Ministry of Environment and Forests have been working together for almost 10 years, and considerable progress has been achieved (see *Box* on CFC phaseout at right).

In the region, opportunities for more effective mainstreaming of the global en-

## CFC PHASEOUT IN INDIA — A 10-YEAR PARTNERSHIP STILL GOING STRONG

Over nearly a decade, the Bank and India's Ministry of Environment and Forests (MoEF) have built the second largest program in the developing world for the phaseout of ozone-depleting substances (ODS). To date, grants from the Multilateral Fund for the Implementation of the Montreal Protocol (MLF) amount to well over \$100 million. India has made significant progress in establishing a national program of information dissemination, technical assistance, and investment projects that eliminate the use of ODS. India is also meeting its Montreal Protocol obligations by reducing its use of chlorofluorocarbons—CFCs, the most important family of ODS—below its allowable ceiling. The next important milestone for India will be in 2005, when its consumption of CFCs will have to be half of its baseline consumption, and consumption of carbon tetrachloride—CTC, another important ODS—will have to be reduced by 85 percent.

The Bank is assisting MoEF in the preparation of a series of sector strategies that target the remaining large areas of ODS consumption in the country. The recently completed *Sector Strategy for the Phaseout of CFCs in the Chiller Sector* is the first. Sector strategies for ODS use as chemical processing agents and CTC production sectors are currently under preparation. These strategies are intended to assist India in formulating programs for those sectors still using ODS.

This partnership has yielded significant achievements, including the phaseout of over 4,000 tons of ODS by the end of 2001, a 20 percent reduction in CFC production, and progress toward meeting the 2010 target for CFC production closure.



An Indian from the state of Arunachal Pradesh crosses into Bhutan to attend a Buddhist festival. The fuel on his back is for his campfire.

vironmental agenda remain significant. The impacts of climate change and opportunities for climate change adaptation strategies are only beginning to be understood. Work on climate change in South Asia is rapidly expanding, both in terms

of flexible instruments available under the Kyoto Protocol, and in the context of adaptations designed to reduce local vulnerability to natural disasters. There are further opportunities under the recently adopted Stockholm Convention on Persistent Organic Pollutants, also known as POPs. The implications of this new international convention on agriculture, health, and industry need to be understood, and used as the basis for a toxic chemical agenda in South Asia.

## From here to there: Building programs and partnerships

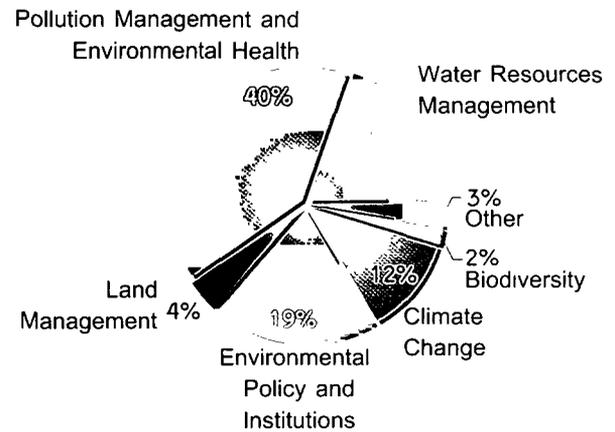
While the challenges are significant, the road to a better environment is increasingly better understood. A few of the priorities for the coming year include:

- Deepening the environmental management policy dialogue in India at the state level—particularly in Uttar Pradesh, Andhra Pradesh, and Karnataka—by sharpening the strategic focus of environment-related work, particularly in line with health and livelihood-related MDGs. In addition to carrying out strategic

environmental analyses in each state, the Bank is supporting Uttar Pradesh's pilot testing of economic instruments for pollution control, and Karnataka's streamlining of the environmental regulatory process.

- Ongoing work on environmental health, including on refining and implementing the strategies for reducing indoor air pollution. One effort will be in the area of improving access of the urban poor to modern fuels. Others will be in continuing work on urban air pollution (see the website <<<http://www.worldbank.org/sarurbanair>>>), and in careful design and monitoring of rural water supply and sanitation projects to maximize both health and environmental benefits.

## THE SOUTH ASIA REGIONAL PORTFOLIO



At the end of June 2002, World Bank environmental lending in the South Asia Region (excluding GEF) totaled \$2.3 billion. Most of the lending is in pollution management, environmental policies and institutions, and water resources management. In fiscal 2002, seven new World Bank projects with environmental objectives were approved, with total environmental lending of \$291 million.

- Finalizing the national environment strategy for Pakistan, which will provide a new focus on water resources and drought management-related issues—perhaps the most urgent sectoral issue in Pakistan today (see *Box* on Pakistan, at left).
- Working more closely with India on disaster management issues—drawing on an opportunity for capturing lessons of experience, and evolving new regional global strategies to reduce vulnerability.
- Expanding the Bank-supported community forestry program in India in Andhra Pradesh, Madhya Pradesh, and some new states as well.
- Increasing opportunities for more effective mainstreaming of the global environmental agenda, particularly on climate change.

## PAKISTAN ENVIRONMENTAL SUSTAINABILITY — MOVING TO A CROSS-SECTORAL SHARED VISION

Effective work on environmental issues often involves little in the way of traditional environmental data, environmental issues, or even environmental institutions. For example, one of the key long-term sustainability issues in Pakistan is the sustainability of natural resources and its implications for the poor. Water scarcity, especially in times of drought, is an important environmental issue, although not under the mandate of traditional environmental institutions. An understanding of these issues and a search for medium- and long-term solutions requires an integrated water resources management framework and a focus on policies in agriculture, irrigation, rural development, and energy.

Bank-supported research is making use of the latest remote sensing and GIS techniques to detect trends in soil moisture, water consumption, and crop yields. This data, in conjunction with reported data and stakeholder viewpoints from villages, is being used to determine agricultural coping strategies. This work will lay the foundation for a future process of multi-sectoral and multi-provincial stakeholder involvement to determine how increasing the productivity of water and land can improve the livelihoods of Pakistan's poor.

*This article was prepared by Carter Brandon of the South Asia Environment Sector Unit, (202) 458-2752, fax (202) 522-1664. SAR website — <<<http://wbln1018.worldbank.org/sar/sa.nsf>>>.*



# PROMOTING SUSTAINABLE PRIVATE INVESTMENT

**T**he World Bank Group is increasingly focused on supporting sustainable private sector development. As its private sector arm, the International Finance Corporation (IFC) plays an important role in fostering sustainable development in emerging markets through its investments and advisory services. Since 1956, IFC has shown that good investment returns are compatible with creating employment, a healthy environment, and an improved quality of life in developing countries.

Working with business partners and financial institutions, IFC invests in sustainable private enterprises in regions and sectors underserved by investment from private sources. IFC sets high standards for environmental and social performance and corporate governance and brings its expertise to project transactions to help its partners achieve the best financial, environmental, social, and governance outcomes. In addition to its primary role as a lender and direct investor, IFC at times uses concessional financing to develop innovative business models and dem-

onstration projects with broader environmental and social benefits.

## IFC and sustainability — A renewed corporate priority

IFC has for some time made it a priority to prevent its investment projects from doing harm to the environment or people. Its investment activities are governed by a host of environmental and social safeguard policies and guidelines modeled on those of the World Bank, but adjusted to reflect IFC's private sector focus. IFC's Environment and Social Development Department is staffed with 30 specialists dedicated to appraising and monitoring projects to assure compliance with these safeguards. The department and its "do no harm" responsibilities have been in place and evolving since 1989.

The importance of ensuring responsible development through safeguards and a "do no harm" approach has not diminished with time. At the same time, the world is changing, and public response to that



**INTERNATIONAL FINANCE CORPORATION**  
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change is altering the landscape for business. Public understanding of environmental, social, and governance issues is growing, driven by press reports, activism, and global communications. This new awareness is driving changes in consumer behavior and investment trends, as well as increasing the pressure for business to play a positive role in sustainable development. With these global shifts in mind, IFC has chosen to expand its attention to matters of environment, social development, and governance issues beyond the boundaries of its “do no harm” or compliance measures. IFC is seeking to signal to its investment partners that striving for business value and “doing good” for the environment or society need not be contradictory pursuits.

*The Business Case for Sustainability.* While “business as usual” is no longer an option for IFC or its clients, a growing body of evidence holds that, in many situations, improved environmental, social, and governance performance leads to better financial returns. Improved sustainability performance can provide a variety of business benefits, such as increased revenues, cost savings, risk reduction, access to capital, or enhanced brand value and other intangibles. This is the business case for sustainability—it is at the heart of IFC’s new approach.

To date, most of the firms that have responded to today’s competitive environment are from more developed economies. Developing-country firms risk being left behind in this new area, missing opportunities and finding themselves at a competitive disadvantage in an increasingly global market. IFC seeks to address this imbalance. With its global reach and capacity to transfer best practice, IFC is well-positioned to help clients see the risks and opportunities.

To this end, IFC has created a business case database that contains over 400 specific examples showing how firms have benefited financially from improved environmental, social, or corporate governance performance. The database seeks to aggregate this company-specific data so that it becomes possible to see both industry and circumstance-specific evidence and to create comparators or potential models. Emerging lessons include the following:

- Firms across many sectors are already gaining a competitive advantage from sustainability
- The business case can work in emerging markets, including frontier countries
- Sustainability can work in both new and existing projects.

Together with the Sustainability Framework and other resources, the database forms an

on-line sustainability toolkit designed to assist IFC investment teams in helping clients identify potential opportunities to add value and improve their bottom line. *Developing Value: The Business Case for Sustainability in Emerging Markets* was published in July 2002 in collaboration with Sustainability, a U.K.-based strategy consultancy, and the Ethos Institute of Brazil.

*Sustainability Framework.* While IFC and many of its clients have a solid track record of achievements in adding value or doing good, they have not been systematically measured, analyzed, or given adequate credit, in part because they are more difficult to identify and articulate. Through internal and targeted external consultation, IFC developed a Sustainability Framework to define more precisely what “doing good” means from an environmental, social, or governance perspective, while maintaining its existing high standards of “doing no harm”.

“Doing good” can occur in a number of different areas. IFC’s Sustainability Framework organized these elements into eight broad categories:

1. Environmental management and social development commitment and capacity
2. Corporate governance
3. Accountability and transparency

4. Process eco-efficiency and environmental footprint
5. Environmental performance of the product or service
6. Local economic growth and partnerships
7. Community development
8. Health, safety, and welfare of the labor force.

Beneficial high impact in each of these areas is more than a simple yes-or-no issue. For each of the eight categories in its Sustainability Framework, IFC has established four levels of performance. Level One indicates basic compliance with IFC minimum requirements and national law. Level Four indicates that company or the project is a global leader in that area, while Levels Two and Three capture performance levels between these two extremes.

IFC’s ability to influence environmental, social, and governance dimensions of a project will depend on the specific circumstances of that project. In some frontier markets, meeting IFC minimum standards may be all that can realistically be achieved; to attempt more could be inappropriate or counterproductive. While there is no IFC policy requirement for any IFC project to achieve a Level Two or above, the framework will allow due credit to be given to investments and project teams that make sustainable outcomes a priority.

IFC's *Environmental and Social Specialists*. Through their close interactions with the IFC investment department and clients, IFC's environment and social development specialists deliver quality assurance services for IFC, environmental and social risk management for project companies, and training in environmental and social risk management for financial institutions. They provide know-how and guidance on international best practices (see *Box*, below on CES) to help project companies and financial institutions in emerging markets move beyond compliance with IFC minimum requirements as well as applicable legal requirements. Con-

sistent with IFC's commitment to sustainable development, the goal of the environment and social development specialists is to direct their expertise to help the investment departments and their clients identify and capitalize on opportunities to address the environmental and social impacts of projects, and to improve project outcomes on the ground consistent with the vision of the Sustainability Framework.

## New markets and opportunities

As IFC helps clients become aware of opportunities to

achieve sustainability, it is also actively seeking ways to accelerate market acceptance of technologies, products, and operating practices that benefit the environment. The Environmental Finance Group within the Environmental and Social Development Department is acting as a catalyst to identify, develop, and structure innovative projects with environmental benefits and to mainstream those investments within IFC and the private sector.

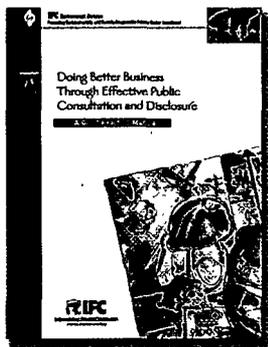
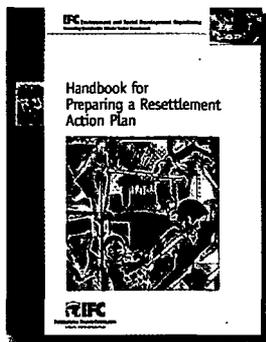
In supporting projects with environmental benefits, IFC turns first to its own investment resources. Where appro-

priate, limited concessional funding may be available from the Global Environment Facility (GEF) and other sources. GEF funding supports projects that contribute to global environmental objectives like conservation of biodiversity and mitigation of climate change. In addition, IFC is interested in supporting projects that address local environmental issues such as water supply, solid waste management, pollution abatement services, and sustainable use of resources.

IFC is also actively seeking projects that can reduce greenhouse (GHG) emissions under the Kyoto Protocol. A key ini-

## CES GOOD PRACTICE MATERIALS —

### RECENT ADDITIONS



Adding to IFC's well-received good practice guidance materials on public consultation and community development, CES this year produced the following publications, which are available at <<[www.ifc.org/enviro/](http://www.ifc.org/enviro/)>>. Select publications will also be available through the World Bank's InfoShop.

*Handbook for Preparing a Resettlement Action Plan.* A good practice guide to designing and implementing resettlement action plans for IFC clients and private sector companies. Based on the collective experience of IFC staff in applying the involuntary resettlement policy to IFC investments, the handbook explains the resettlement planning process and includes practical tools such as implementation checklists, sample surveys, and monitoring frameworks.

*CES Good Practice Note: Addressing Child Labor in the Workplace and Supply Chain.* The first in a new CES publication series, this good practice note offers a unique private sector perspective on the topic of harmful child labor. It seeks to share corporate learning and experiences by providing companies with a range of basic good practice approaches that other businesses have successfully applied in addressing harmful child labor in their own workplaces and those of their vendors and suppliers.

*CES Good Practice Note: HIV/AIDS in the Workplace.* An introduction to the issue of HIV/AIDS in a business context. This publication looks at the impact of the epidemic on the private sector, assesses the costs to companies, and provides a menu of program options—from awareness raising and policy development to prevention, care, and treatment programs—for businesses interested in implementing HIV/AIDS initiatives to support their employees and the communities in which they work and live (available September 2002).

## IFC'S NEW ENVIRONMENTAL FACILITIES



**Corporate Citizenship Facility.** This facility allows IFC to work with its project sponsors and other emerging-market businesses to demonstrate the benefits of a progressive approach to corporate citizenship. It provides knowledge and resources to influence change and enhance benefits for industry and civil society—in cases where this function lies outside the sphere or capacity of any individual project sponsor.

**Sustainable Financial Markets Facility.** This facility focuses on environmentally and socially responsible lending and investment through IFC's financial intermediaries and in the emerging-markets financial sector at large. It aims to increase the sustainable development impact of IFC's intermediated financing, enhance the competitiveness of the local financial services industry, and promote more environmentally and socially responsible investment.



**Environmental Opportunities Facility.** This facility provides catalytic development funding and flexible investment financing for innovative projects that address local environmental issues. By moving projects toward commercial viability, the facility "pushes the market" toward adopting new business models and technologies that address the most immediate environmental problems of those living in developing countries, especially the poor.



tiative in this effort is the IFC-Netherlands Carbon Facility (INCaF), which will purchase project-based GHG emission reductions under the Clean Development Mechanism (CDM) for the benefit of the Government of the Netherlands.

*Enhancing Sustainability: IFC's New Environmental Facilities.* Recognizing the demand for IFC's services to enhance environmental and social impacts of projects, IFC has just established three new facilities that will support increased environmental and social sustainability by the private sector in emerging markets (see *Box*, at top of this page). The demand for these facilities grew out of

IFC's efforts over the last decade in the environmental and social area. Rather than responding to these challenges in an ad hoc manner, IFC now hopes these facilities will accelerate the adoption of more sustainable practices by private companies in a more strategic

and systematic manner. The total funding requirements for the three facilities over five years are estimated at \$55 million.

### ADDITIONAL INFORMATION

IFC's environmental and social policies, guidelines, procedures, and good practice materials, as well as information on the business groups of the Environment & Social Development Department, can be found at <http://www.ifc.org/enviro/>

For further information on IFC's annual report, please contact Sujani Eli, Corporate Relations at (202) 458-0933 or by e-mail at [seli@ifc.org](mailto:seli@ifc.org)

Additional information on the activities of IFC's Environment & Social Development Department or its publications, can be acquired by sending an email to: [enviro@ifc.org](mailto:enviro@ifc.org).

### "Investing in a Sustainable Private Sector"—IFC's first sustainability report

This year, for the first time, IFC's annual report will include a chapter on sustainability. It highlights the business case for sustainable business practices, includes examples of projects illustrating the main sustainability issues, and contains additional information about IFC's emerging roles and activities. It will be available in the fall of 2002.

*This article was prepared by IFC's Environment & Social Development Department, Gavin Murray, Director*



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# FUTURE DIRECTIONS FOR LEARNING AND SUSTAINABLE DEVELOPMENT

## SUSTAINABLE DEVELOPMENT LEARNING ACTIVITIES

WBI's Sustainable Development program delivered more than 100 learning activities and programs in fiscal 2002. Topics included environmental management, improving air quality (through the Clean Air Initiative partnerships program), climate change, environmental economics, environmental governance, natural resources management, market creation for biodiversity, conflict resolution for natural resources management, water policy and management, rural poverty and development, and a range of activities (including workshops, courses, e-discussions, and global dialogues) in preparation for the Johannesburg 2002 Summit. The Sustainable Development program is geared toward policymakers, parliamentarians, practitioners, academics, researchers, journalists, and nongovernmental organizations. For more information, visit the website at: <<[www.worldbank.org/wbi/sustainabledevelopment/](http://www.worldbank.org/wbi/sustainabledevelopment/)>>.

**T**he World Bank Institute's (WBI) mission is to "create learning opportunities for countries, Bank staff and clients, and people committed to poverty reduction and sustainable development."

WBI supports the Bank's learning and knowledge agenda with clients and Bank staff worldwide through capacity building and by providing learning programs and policy advice. WBI is helping to improve the Bank's operational quality and effectiveness; to share knowledge with clients and partners; and to enhance the capacity of clients to access and make effective use of knowledge and information.

## Partnerships

In collaboration with partners, WBI currently delivers more than 550 learning programs annually, reaching over 45,000 participants from 150 countries in all major regions of the world. These activities range from face-to-face activities using traditional media such as print materials, to distance learning programs that rely on Internet tools and videoconferencing to bring together participants from different cities, countries, or regions (see *Box*, at left). WBI is also offering an array of learning and training events for the 2002 Johannesburg Summit (see *Box*, top of next page).

WBI actively supports the creation of knowledge networks and learning partnerships as part of its commitment to building long-term collaborative relationships in the public and private sectors and with civil society. WBI has developed more than 200 learning partnerships. It works closely with local institutions to help them build in-country capacity and help clients achieve their own poverty reduction and sustainable development objectives.

## Lessons learned

The scope and focus of the World Bank Institute continues to evolve. Its approach to learning has moved away from short-term technical cooperation, one-time skills development, and one-way knowledge transfer toward results-oriented, continuous learning, and two-way communication with clients and partners.

WBI Vice President Frannie A. Leautier notes: "The learning process means benefiting from the lessons of success and failures as well as from the lessons of others. Knowledge builds capacity, and capacity building leads to growth, security, and empowerment of the poor. We have found that the best way to build capacity is by creating an enabling environment in which local knowledge is allowed to flourish and contribute to global knowledge;

## JOHANNESBURG SUMMIT 2002 LEARNING ACTIVITIES

As part of the World Bank's preparations for the Johannesburg Summit 2002, the World Bank Institute (WBI) is offering an array of learning and training events, including:

- **The Global Dialogues on Sustainable Development** (October 2001–June 2002) brought together leading experts to discuss topics that are high on the Johannesburg Summit 2002 agenda. Specialists from developing countries engaged in the discussions through video-conferencing. Topics included food security, financing for sustainable development, corporate responsibility, and environmental governance. The Dialogues website provides links to background materials, the on-line discussion, and videos of the Dialogues. Visit the website at: [www.worldbank.org/wbi/sustainabledevelopment/globaldialogues/](http://www.worldbank.org/wbi/sustainabledevelopment/globaldialogues/)
- **Collaboration with GLOBE** (Global Legislators for a Balanced Economy), an informal group of parliamentarians from around the world, on *Towards the World Summit on Sustainable Development: Parliamentarians Take Action*, which is mobilizing parliamentarians, raising awareness about Johannesburg 2002, and enabling participants to take an active role in the preparatory process.
- **Special training programs, courses, and policy services** on a range of Summit-related topics such as poverty, environment, and development linkages; sustainable rural development; sustainable water management and water sector reform; and environmental governance.

where people learn from one another as they also innovate on their own; and where global and local knowledge inform action and influence change. The ability of a society to problem-solve and innovate is key to sustainable development. That is what a process of learning ensures."

### Future challenges

The Institute will continue to work toward:

- Increasing the scope and reach of the Knowledge Bank through more traditional means such as face-
- Raising awareness and building skills for policy reform through policy

to-face learning programs, as well as by tapping the power of the Internet and websites; expanding the use of distance learning, especially through the Global Development Learning Network; and providing more web-based learning opportunities and courses available by CD-Rom to those who have computer access but lack reliable or affordable Internet connectivity.

seminars, global dialogues, and moderated electronic discussions.

- Ongoing development of knowledge and skills through formal courses, electronic-based learning, communities of practice, and action learning in which participants follow-up using what they have learned to make real changes in their countries.
- Building institutional capacity through training of trainers, joint course delivery with partners,

and joint research with partners.

- Developing and providing new and innovative services such as B-SPAN, an Internet-based broadcasting station launched by WBI in 1999 that broadcasts World Bank seminars, workshops, and conferences on sustainable development and poverty reduction for free to anyone with Internet access (<<[www.worldbank.org/wbi/B-SPAN](http://www.worldbank.org/wbi/B-SPAN)>>).

At the local and country level, WBI's close collaboration with partners helps to ensure that programs are grounded in local cultural and social conditions. At the global level, the Institute will continue to help bridge the digital divide by helping to extend the reach of knowledge and learning through global electronic knowledge networks, distance learning initiatives, and other innovations designed to reach increasing numbers of people with the aim of reducing poverty and making development more sustainable.

*This article was prepared by Michele de Nevers (202) 473-8607, and Bonnie Bradford (202) 458-0316 of the World Bank Institute's Environment and Natural Resources Division (WBIEN) fax: (202) 676-0977 or 676-0978.*

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Website: <<[www.worldbank.org/wbi/sustainabledevelopment](http://www.worldbank.org/wbi/sustainabledevelopment)>>*

# **A Selection of World Bank Group Environmental Publications**

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The following publications may be obtained by sending an email message to [eadvisor@worldbank.org](mailto:eadvisor@worldbank.org), or by phoning the **ESSD Advisory Service** at (202) 522-3773.

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Also available in Chinese, French, Russian, and Spanish.  
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Spring 2002

### ***The Little Green Data Book 2002***

World Bank  
April 2002

### ***Country Assistance Strategies and the Environment: A Brief***

Priya Shyamsundar, Kirk Hamilton, Lisa Segnestam,  
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November 2001

### ***Third Environmental Assessment Review (FY96-2000)***

Kenneth L. Green and Alison Raphael  
May 2002

### ***The Environment and the Millenium Development Goals***

World Bank  
June 2002

### ***The Environmental Implications of Privatization: Lessons for Developing Countries***

Magda Lovei and Bradford S. Gentry  
World Bank Discussion Paper no. 426  
2002 (ISBN 0-8213-5006-4)

## **Environment Strategy Papers**

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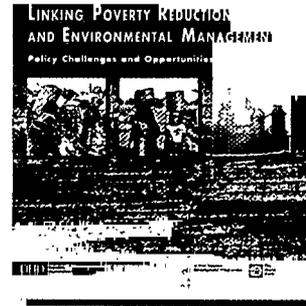
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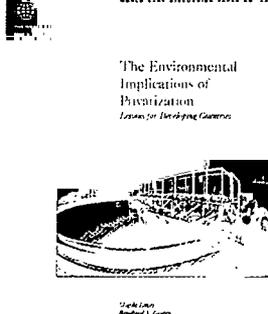
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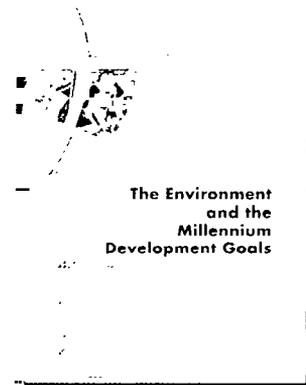
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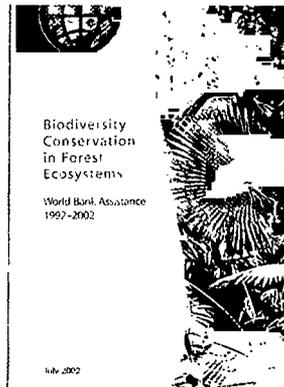
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