

ANNEX A

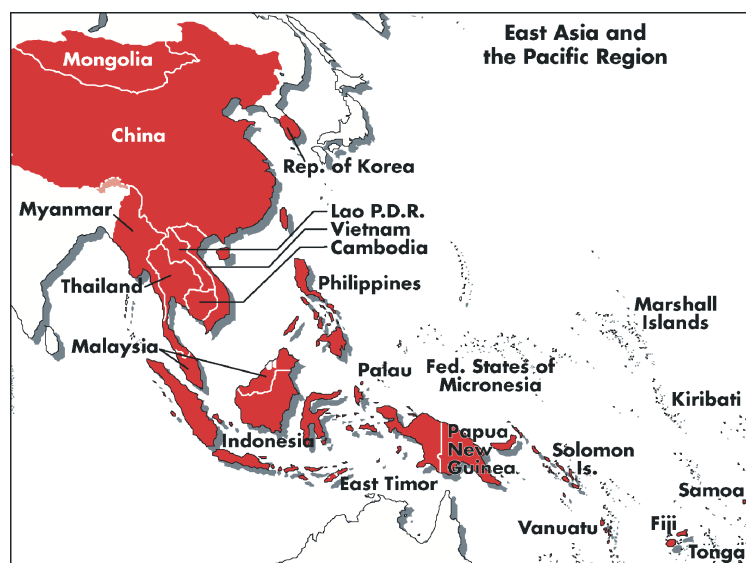
Regional Strategies

The countries and geographic regions assisted by the World Bank face a wide range of environmental challenges. The specific actions called for in each country will thus also vary substantially. The Bank's primary contact with clients is through the Bank's six Regions—East Asia and the Pacific; Europe and Central Asia; Latin America and the Caribbean; the Middle East and North Africa; South Asia; and Sub-Saharan Africa. As part of the Strategy preparation process, each Region prepared its own strategy reflecting the specific needs and priorities of its own region. This annex summarizes these regional environmental strategies. Full documents are available at www.worldbank.org/environment.

East Asia and the Pacific

Regional Context and Key Environmental Issues

The countries in the East Asia and the Pacific Region (EAP) confront a wide variety of environmental problems. Two distinguishing features of the region have implications for the environment: extremely high population densities and relatively rapid rates of economic growth. The region is home to about 1.8 billion people, and this number is expected to reach 3 billion by the year 2015. Around 1.2 billion people—nearly two thirds of the region's total—live in rural areas with farming or other resource-dependent occupations as their primary means of livelihood. Between 1980 and 1998, the urban population nearly doubled from 310 to over 600 million people, placing additional strains on the environment. Notwithstanding the economic crisis during the late 1990s, the EAP Region experienced the fastest rate of economic growth in the world over the past 25 years. In some ways, this growth created the potential for benefiting the environment by introducing cleaner technologies and generating new sources of revenue for addressing environmental externalities. However, rapid industrial growth and expanding urban populations have generally outpaced the ability of new technologies and pollution control investments to reduce overall pollution loads, resulting in deteriorating air, water, and solid waste pollution in most countries of the region.



1 *Pollution.* In terms of their immediate socioeconomic costs, air and water pollution stand out as the
2 region's most serious environmental issues.

3 ■ *Water pollution.* Studies show that more than 500,000 infants die each year in the region as a result of
4 waterborne diseases linked to polluted water. About 60 percent of these deaths are a consequence of
5 deficient rural water supplies, while another 30 percent are caused by the lack of sanitation in urban
6 areas. These impacts are equivalent to shortening the average life expectancy of everyone in the
7 region by nearly two years.

8 ■ *Air pollution.* Air pollution impacts are serious in many megacities of the region (Jakarta, Manila, and
9 Bangkok) and are extremely costly in China. In terms of human health, the most damaging air
10 pollutants are fine particulates, produced primarily from fuel combustion. Air pollution in China is
11 estimated to cause over 200,000 premature deaths each year, with total health damages in some cities
12 equivalent to 20 percent of annual income.

13 ■ *Indoor air pollution.* As long as solid fuels, such as coal, charcoal, and biomass, remain a significant
14 part of residential energy supplies, indoor air pollution poses a large health problem, especially to
15 women and children.

16 Despite high economic and social damages, pollution impacts are largely reversible, as evidenced by the
17 vast improvements in air and water quality in the region's most developed countries (Japan, Singapore,
18 and South Korea). Nonetheless, large economic and social gains can be achieved by addressing pollution
19 problems earlier.

20 *Natural resources.* The growing pressure on, and irreversible damage to, natural resources—loss of
21 ecosystems, extinction of species, and permanent damages to groundwater supplies—is a long-term
22 environmental concern. Though more difficult to measure than pollution costs, the stakes are high, since
23 they involve the sustainability of key natural resource-based activities (such as agriculture, fishing, and
24 forestry) and of human settlement patterns. Two issues particularly stand out:

25 ■ *Deforestation.* In the early 1990s, deforestation rates in East Asia were the highest of any region.
26 Indonesia alone lost about 20 million hectares of forest cover between 1985 and 1998. In the
27 Philippines, nearly 90 percent of productive old-growth forests have been lost since the 1960s.

28 ■ *Degradation of marine and coastal ecosystems.* In Southeast Asia and the Pacific Island nations,
29 marine and coastal ecosystems on which many people depend—such as coral reefs and
30 mangroves—have been permanently damaged and are being progressively destroyed. Climate change
31 will exacerbate many of these natural resource problems, and is a major threat to small islands,
32 coastal areas, and dry-land and non-irrigated agricultural systems.

33 **The Bank's Record and Future Challenges**

34 *Pollution abatement.* The Bank has been an important source of finance for environmental infrastructure
35 in the EAP Region. In the sanitation sector, the Bank has promoted the creation of autonomous water and
36 wastewater companies and the establishment of tariffs and pollution charges—both as a means of
37 reducing emissions and as a means of financing operation and maintenance to guarantee long-term
38 sustainability. By far the largest share of the Bank's pollution abatement investments in the region have
39 been for water pollution. This holds true for China, where air pollution damages have been identified as
40 exceeding those from dirty water. Future public investments for water and air pollution management will
41 be dependent on solving recurrent financing issues, which in turn requires political commitment to the
42 adoption and reform of environmental and resource policies.

43 *Natural resource management (NRM).* Despite more than a decade of attention, policymakers in the
44 region are just beginning to recognize the importance of NRM issues to sustainable economic

development. Most Country Assistance Strategies (CASSs) have not been effective in highlighting the macroeconomic, policy, and institutional factors that affect a country's environmentally sustainable development. Over the past 10 years, the region has prepared strategy studies on forestry, watershed management, and biodiversity. Some studies, including those for the Philippines, Indonesia, and Vietnam, have been instrumental in shaping natural resource management programs in those countries (see box A.1). While many agricultural development projects, particularly those in China, have been successful in raising farm-level incomes, they have not generally been effective in promoting sustainable NRM. The challenge is to redirect rural development initiatives away from individual agricultural production projects toward sustainable NRM.

Institutional development. The World Bank has provided technical assistance to strengthen national environment agencies in the region as a way of raising the importance of environment issues. Through their role as implementing agencies for Bank-supported environment projects, many provincial and municipal agencies (environment, transport, construction, and utilities) have improved their technical, financial, and assessment capabilities in the environment field.

To be effective over the longer term, Bank support for environmental capacity must emphasize strengthening local environment systems, community participation, environmental education, and the importance of institutions other than environment agencies (for example, those dealing with forestry, agriculture, and industry) in order to promote policy reform and follow through on implementation. Institutional capacity building is a necessary component of overall environmental improvement and must be done in tandem with environment and policy development, environmental infrastructure investments, and awareness-raising.

Strategic Priorities and Actions

In three areas—quality of life, quality of growth, and quality of the regional and global commons—the Bank can simultaneously promote poverty reduction and environmentally sustainable development in the EAP Region.

Quality of life

Pollution management. Nearly all client countries in the region are experiencing severe water pollution-related health problems. The Bank will continue to support activities to improve urban drainage and sanitation, as well as rural water supply and sanitation. Health and hygiene education are among the most cost-effective interventions to reduce health impacts. New and increased support for urban sanitation and drainage investments and for rural and peri-urban water supply and sanitation activities is envisaged in most countries in the region.

Box A.1 **Analytical work shapes natural resource management in East Asia**

Several recent studies have helped shape the Bank's natural resources management (NRM) program in East Asia.

In the Philippines, a study—*Forestry, Fisheries, and Agricultural Resource Management*—led to investments promoting decentralization and community-based development to address problems in fragile uplands and improve protection of nature conservation areas, including the Environment and Natural Resources Sectoral Adjustment Loan and the Conservation of Priority Protected Areas Project.

In Indonesia, a study—*Forest, Land, and Water: Issues in Sustainable Development*—led to substantial changes in the Bank's rural development portfolio, including a variety of experimental and innovative approaches to biodiversity conservation and integrated pest management. Pilot river basin management programs are being supported under the Java Irrigation and Water Resources Management Project, while water users' associations and the introduction of irrigation service fees are being promoted under the Irrigation Sub-sector II Project.

In Vietnam, a study—*Environment Program and Policy Priorities for a Socialist Economy in Transition*—led to projects for the protection of nature conservation areas (Forest Protection and Rural Development Project) and coastal wetlands (Coastal Wetlands Development and Protection Project).

1 Many parts of the region face serious air pollution problems. In terms of human health, the most
2 damaging air pollutants are fine particulates, produced primarily from fuel combustion. The Bank is
3 supporting a number of cost-effective solutions to urban air quality management in EAP through its
4 lending and non-lending services. Among the interventions are the expansion of natural gas and other
5 clean fuels in residential, commercial, and industrial activities (China, Vietnam); improvements in space
6 heating in northern climates (China); and reducing transport sector exposures. In the transport area,
7 interventions include switching to unleaded gasoline (Vietnam, Indonesia); improving fuel quality
8 (Indonesia); improving traffic management (Vietnam, China, the Philippines); introducing cleaner vehicle
9 technologies and improved maintenance and inspection (Thailand); and promoting urban planning that is
10 less traffic-intensive (the Philippines).

11 As long as solid fuels, such as coal, charcoal, and biomass, remain a significant part of residential energy
12 supplies in the region, indoor air pollution poses a large health problem, especially to women and
13 children. A pilot indoor air pollution project has recently begun in Mongolia to reduce health impacts
14 associated with inefficient home heating and cooking stoves, and the Bank should continue to discuss
15 assessments and potential interventions in China, where several hundred million people still rely on solid
16 fuels for cooking and heating.

17 *Natural resource management (NRM)*. Better management of natural resources—soil and water
18 conservation, forest protection, coastal zone and marine management, and ecosystem and biodiversity
19 conservation—is essential for enhancing rural livelihoods in the EAP Region. Effectively addressing
20 these issues requires a long-term and concerted effort, including integrating natural resource policy within
21 macroeconomic policy and agricultural development agendas of national governments. A priority for the
22 Bank is to identify critical NRM issues in countries of the region, and ensure that policies that support
23 sustainable resource management are incorporated within the CAS, CDF, and PRSP processes. The Bank
24 will also support additional investments in high-quality analytical work on natural resource issues.

25 The Bank is developing regional and country water strategies to address water resource management (in
26 both river basins and aquifers), water scarcity, water pollution, and watershed management. Operations to
27 strengthen water resource management are underway and planned in the China, Indonesia, Philippines,
28 and Vietnam. A Water Strategy study for China is being prepared, which will highlight water stresses in
29 several northern river basins and the need for effective river basin management, water pricing, and
30 conservation options for agricultural, industrial, and residential users. The Bank is also supporting
31 pollution control investments in several water-scarce river basins in northern China (Liao, Huai).

32 Aside from the “5 million hectare” afforestation program in Vietnam, the Bank will primarily support
33 smaller-scale community forestry programs, with an emphasis on conservation and sustainable forestry
34 development. Sustainable forestry programs are underway and planned in China, Laos, Papua New
35 Guinea, and the Solomon Islands. In Indonesia, the Bank and other donors have linked forestry (and
36 water) policy reforms to overall economic reform discussions. A resumption of Bank support to the
37 forestry sector in Indonesia is dependent on progress on two issues: broadening the dialogue on forestry
38 policy and management to non-forest agencies, and delegating management authority over degraded
39 forests to parties outside the forestry bureaucracy, such as local communities, NGOs, the private sector,
40 and other natural resource agencies.

41 *Reducing vulnerability to natural disasters* is a critical issue in the region. The Bank has provided support
42 for relief and reconstruction following floods, volcanic eruptions, and earthquakes. Moving from curative
43 to preventive actions, the Bank plans to become more involved in addressing long-term risk reduction and
44 mitigation measures as part of its advisory assistance and investment operations. Examples include flood
45 control, preparedness, and prevention initiatives in China and Vietnam, and risk reduction and adaptation
46 measures in the Pacific to climate variability and extreme weather events.

Quality of growth

The World Bank will support environmentally sustainable growth in the region by promoting macroeconomic and sector policy reforms that strike a balance between growth and environmental protection; working with clients to build up environmental assessment and regulatory capacities; supporting efforts to increase public participation and environmental awareness; and by effectively implementing the Bank's own environmental safeguard policies.

Policy environment. In the macroeconomic and sector policy arena, the Bank will promote policy reforms that improve natural resource use and reduce pollution externalities. In addition to investment projects, the Bank can also promote environmentally sound policies within the context of sectoral adjustment loans, such as the ongoing discussions in Indonesia on forest and water policy reforms.

Institutional development. Throughout the region, the Bank will continue to provide support for environmental assessment and regulatory capacities. In Thailand, for example, an environmental institutions development project will strengthen local environmental planning and regulatory capacities; support regulatory reforms to improve compliance; and improve environmental financing. Similar efforts are needed in other countries—especially in the poorest countries. The Bank will cooperate with other donors and partners to provide such assistance.

The Bank is actively promoting new approaches in environmental regulation through both lending and non-lending policy dialogue. Public disclosure of environmental information is an indirect but promising measure for encouraging pollution prevention and abatement. Rating systems, such as PROPER in Indonesia and the EcoWatch Program in the Philippines, make public the environmental performance, both good and bad, of industrial enterprises. Even in countries with significant public ownership of industries and limited environmental regulatory capacities, this type of program has the potential to improve environmental performance at low cost. The Bank has recently initiated pilot environmental information and disclosure programs in Hanoi, Vietnam (industrial water pollution), and in Hohhot and Zhenjiang in China. It has also collated and published environmental indicators in Thailand and the Philippines, with the aim of increasing their accessibility to civil society.

Another area of work concerns strengthening the application of safeguard policies, both within the Bank and within our client countries. This is an important pre-condition for expanding the role of the private sector. Recent reviews of the Bank's safeguards record indicate that increased attention needs to be paid to building up local environmental management and environmental assessment capacity, improving public consultation, and integrating environmental and social assessments. The other area of concern is the need to focus on the implementation of environmental management plans. To date, safeguards measures have been biased toward preparation and appraisal of projects. Continued emphasis on thematic reviews of projects in the EAP region is needed to improve effective implementation of safeguard policies. Finally, there is the need for harmonization of safeguard policies in countries and in the donor community. The EAP Region is funding several country reviews to identify differences in World Bank and country safeguard requirements, especially in the area of social safeguards.

Quality of the regional and global environment

Regional environment issues. As a multilateral institution, the Bank can play an important role in helping address regional environment issues, such as river basin management and acid rain. Some of these issues have already gained the attention of policymakers in the region. The GEF recently approved support for the Mekong River Commission to establish mechanisms to promote and improve coordinated and sustainable water management, including reasonable and equitable water utilization by the countries of the Basin; and to protect the environment, aquatic life, and the ecological balance of the Basin. In the area of sulfur emissions, the Bank has supported research and training on acid rain issues since 1991, through

the RAINS-Asia program, and has recently begun a technical assistance project in China to assess direct and indirect sulfur impacts and cost-effective mitigation options.

Climate change. In the climate change area, the Bank will support mitigation efforts that also have large local economic and environmental benefits. In addition to energy sector reform, which can have the largest impact on the efficiency of energy production and use, and thus greenhouse gas reduction, the Bank will support energy efficiency and fuel switching (including renewables) through the GEF and other concessional resources (see also box 3.4 in chapter 3). The Region has considerable experience in supporting energy efficiency and renewable energy projects through the Asia Alternative Energy Program. Many of these investments also target the poor, for example, by increasing rural energy access by the poor through renewable energy development. New operations to support climate change mitigation are planned for Cambodia, China, Mongolia, the Philippines, Thailand, and Vietnam. Given the importance of climate change impacts to the region, the Bank also plans to support vulnerability and adaptation assessments, beginning with pilots in countries with a history of climate disasters, such as Vietnam and the Pacific island nations.

Biodiversity. In the face of serious threats to ecosystems and biodiversity in the region, the Bank will raise these issues by country in the context of natural resource and development policies. The Bank will mainstream biodiversity concerns in both policy and investment activities, with the assistance of GEF and other grant resources. The Region has an extensive portfolio of biodiversity projects, most of which take an ecosystem approach to conservation, and are focusing on biodiversity management, both within protected areas and beyond their boundaries into the production landscape. Increasingly, biodiversity projects in the Region will be more closely related to natural resource management interventions, which in turn will emphasize community participation and improving livelihoods. Biodiversity projects in Indonesia, the Philippines, Thailand, and Vietnam, will support sustainable forestry, coastal zone and marine protection, and river basin management.

ODS and POPs. Supporting the phaseout of ozone-depleting substances (ODS) is a continuing priority in the Region. The China ODS program has recently been supplemented with the CFC phase-out program to further advance China's efforts toward accomplishing the goals of the Montreal Protocol. Given the Region's intensive industrialization and widespread use of agricultural chemicals, there are plans to develop a major program to address persistent organic pollutants (POPs).

Implementation Arrangements

To effectively implement the strategy, there must be both internal and external coordination. Within the Bank, the strategy has the support of the Country Departments and will be led by the key sector units involved in environment-related projects, especially the rural development, urban development, and energy units. Externally, the strategy framework has been broadly endorsed by client countries in the region, and it is now necessary to develop a sound implementation plan with countries and with other development partners, including international and bilateral donors and the private sector (see box A.2).

Partnerships. The Bank is developing a number of formal and informal partnerships in the EAP Region to address both pollution and natural resource issues. Most are related to specific project interventions. A number of forestry activities in the Region—including the policy discussions in Indonesia—are being undertaken as part of the World Bank/World Wide Fund for Nature's Global Forest Alliance. The Bank is also partnering with The Nature Council, Birdlife International, and other conservation NGOs on biodiversity conservation initiatives in Indonesia, Papua New Guinea, and Vietnam.

Following on work in the region on acid rain and urban air pollution, the Region is beginning a regional initiative to improve air quality management. Under the *Clean Air Initiative*, the Bank will collaborate with multilateral and bilateral donors, the private sector, and regional governments to share effective air

1 quality lessons. The Bank is also
2 developing a cooperative program
3 under the Knowledge Partnership with
4 Korea to share the country's
5 environmental experiences with other
6 countries of Asia, specifically Vietnam
7 and China. Currently focused on
8 industrial pollution and environmental
9 management issues, the Bank-Korea
10 cooperation could expand to cover other
11 issues of importance to the region, such
12 as forestry, wetland protection, and
13 river basin management.

14 *Next steps.* To begin implementing the
15 strategy over the next six to nine
16 months the Bank will: disseminate the
17 framework within the Bank and to
18 external stakeholders; refine the
19 medium- and longer-term priorities for
20 implementing the strategy, such as key
21 sectors, countries, and Bank
22 instruments; and assess to what extent
23 staff and budgets need to be realigned to
24 achieve the desired outcomes.

Box A.2 **Preparing an environmental strategy for East Asia**

This strategy paper reflects the results of nine months of stocktaking and consultations by EAP staff to realign its environment work to more directly address poverty reduction and sustainable development. It builds on a number of recent environment and sector studies; internal consultations within the World Bank among the key sectoral units (rural development, urban development, energy and mining, transport, and environment); and external consultations with regional stakeholders in Bangkok (October 2000), Beijing (February 2001), Japan (May 2000), and Singapore (June 2000).

Key studies:

- "Natural Resources Management: A Strategic Framework for East Asia and the Pacific" (Crooks and others 1999)
- "Clear Water, Blue Skies: China's Environment in the 21st Century" (Johnson and others 1997)
- "Can the Environment Wait? Priorities for East Asia" (World Bank 1997b)
- "Indonesia Environment and Natural Resource Management in a Time of Transition" (World Bank 2001b)
- "China: Environment Sector Strategy Update" (World Bank 2001c).

Europe and Central Asia

Regional and Environmental Context

The Europe and Central Asia (ECA) Region comprises 27 countries, all but Turkey in various stages of transition from centrally planned economies. Some are well on the way to joining the European Union (EU), while others have a large unfinished reform agenda that encompasses profound and far reaching economic and social changes. Region-wide, poverty increased from 16 million in 1987 to 90 million in 1998, particularly in the Newly Independent States (NIS) and the Balkans, though it remains low compared to other regions. Poverty rates vary significantly, from below 10 percent in countries in Central Europe to 68 percent in Tajikistan. Civil conflicts, natural disasters, refugees and ethnic problems are major complicating factors in Central Asia, the Balkans, and the Caucasus.



Changes in environmental performance have been closely linked with the economic reform process. Important structural reforms related to the environment sector include the introduction of incentives for efficient energy use, such as by eliminating fuel subsidies and making the energy sector competitive; reform of municipal utilities, including eliminating subsidies and raising tariffs; privatizing the consumer and industrial sectors; promoting free trade; establishing basic environmental protection and management systems; improving natural resource management; and ensuring public participation in environmental issues.

However, the political dynamics in the region often make it difficult to implement the necessary reforms. Governments are reluctant to eliminate energy subsidies or raise tariffs for fear that populations cannot afford the increases. Wage arrears, barter payments, lack of metering, and the relative insolvency of many municipalities also complicate utility reforms. Where acceptable, privatization with effective regulation is proving more successful than attempts to reform municipal enterprises through traditional technical assistance and investment projects. In terms of energy availability, lack of domestic supplies is driving a rush for new strategic alliances, and generating proposals for new oil and gas pipelines that raise environmental concerns associated with construction and potential oil spills. In energy-rich countries, such as Russia or Kazakhstan, the desire to maximize export earnings of oil and gas places renewed pressure on domestic users to burn dirtier fossil fuels, particularly coal. For energy-poor countries, the increasing prices of energy inputs, together with the absence of reforms at the distribution level, has led to the collapse of district heating plants, the burning of alternative dirtier fuels, and the installation of less-efficient small boilers.

Although most ECA countries have a relatively good legal and regulatory framework for environmental management, institutional capacity to implement and enforce regulations is weak, and government officials do not always agree on the importance and urgency of environmental issues. On the positive

side, increasing freedoms have led to an increasingly vocal and influential civil society, including NGOs and independent journalists, who are pressing for these laws to be followed.

Key Environmental Challenges

ECA's key environmental challenges vary significantly depending on progress in moving to a market economy and differences in topography, geology, climate, natural resource availability, development patterns, and per capita income. Compared to most other parts of the world, pressures on the environment and natural resources are not high outside of Central Asia. Population is decreasing and the general decline in economic activity has significantly reduced air pollution, but there are problem areas. Environmental challenges from past liabilities remain an issue in highly polluting industries such as chemicals, petrochemicals, and metallurgy. In many areas, access to clean water is endangered by the deteriorating financial condition of the municipal water and wastewater utilities. In Central Asia, the poor condition of irrigation infrastructure and bad agricultural practices threaten livelihoods and contribute to land degradation. Natural resource management and preservation of coastal ecosystems are also important issues in some countries. In summarizing key challenges, it is useful to group countries as follows:

- *The Baltics, Central and Southeastern Europe, and Turkey*¹ include countries ranging from those that have implemented sustainable reforms and developed good institutional and regulatory capacities for managing environmental issues (for example Slovenia, Estonia, Poland and Hungary), to those where the reform process has been sharply interrupted in the past and/or the institutional and regulatory framework for dealing with environmental issues is still developing (for example, Romania, Bosnia and Herzegovina, Albania and Macedonia). Some have generally higher per capita income, strong capacity to manage the environment, and can rely largely on private sector financing to finance environmental investments. Others have particularly difficult challenges related to dependency on substantial energy imports or emergence from conflicts. Where substantial progress in restructuring industry and realigning the roles of the public and private sectors to better fit a market-based economy has occurred, pollution intensity has been reduced as industry modernizes, incorporates proper pollution abatement techniques or shifts to less polluting sectors. In general, however, environmental issues include the potential collapse of water and wastewater services where reforms are weak, water contamination from agricultural or industrial pollutants, energy inefficiency, threats to natural resources, coastal, forest and landscape management; and some residual hazardous waste hotspots, including land mines and other residues from war.
- *The Western NIS countries*² have made substantially less progress on reforms than the Central and Eastern European countries. They have highly urbanized populations, localized ambient air pollution in selected cities, and water pollution from municipal and industrial waste; they are also threatened by the potential collapse of water and wastewater services. Hazardous waste contamination and other existing environmental liabilities are an issue in highly polluting industries such as chemicals, petrochemicals, and metallurgy. Large areas in Belarus and Ukraine were affected by radioactive fallout from the Chernobyl nuclear accident.
- *Russia* shares the characteristics and environmental problems of the NIS subgroup, but bears special mention by virtue of its enormous energy resources, land mass, forest cover (22 percent of the world's forests), and greenhouse gas emissions (17 percent of the OECD total). Forest management and carbon balance are consequently of enormous relevance globally as well as nationally. Another problem particular to Russia is the deteriorated condition of many of its oil pipelines, which represent

¹ This group includes the ten EU accession countries (Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Republic and Slovenia), as well as Albania, Bosnia-Herzegovina, Croatia, Macedonia, and Turkey.

² The Western NIS countries are Belarus, Moldova, and Ukraine.

a disaster waiting to happen. Sound management of arctic and riparian ecosystems and preservation of biodiversity and unique areas such as Lake Baikal are also important challenges.

- *Central Asia and the Caucasus*³ include three of the poorest countries in ECA and some of the slowest reformers. All suffer from many of the same issues as the Western NIS countries, but this region has a greater rural population. The Caucasus also face coastal and land degradation issues. Oil-rich Azerbaijan and Kazakhstan are also concerned with oil drilling, pipeline construction, degradation, and oil spill prevention and clean-ups. For the Central Asian countries, water resource management is the top environmental priority. These countries are situated in an arid zone, where cultivation is impossible without irrigation. An elaborate irrigation system was built up by the Soviet Union to support the agricultural livelihoods of about 26 million people, diverting water on such a scale that the Aral Sea nearly dried up. The system depended upon complex arrangements for trading crops, energy, water, and agricultural inputs, which have collapsed. The system's infrastructure now is crumbling from a chronic lack of maintenance. Poor irrigation practices have led to salinization of the soils. The result is some of the worst poverty in the region. Safe drinking water is also an issue in some rural areas, as groundwater is often polluted by runoff from agriculture and mining. Better price incentives for farmers and restructuring of water user associations could partially help, but it is likely that only a fraction of the irrigation system can be made sustainable over the long term. An uneven distribution of water resources among countries exacerbates these problems and raises trans-boundary tensions. Efforts to sustainably link energy supplies with water releases and to agree on an overall water management system by the riparian countries have not yet been successful.

Regional waters. The management of regional seas and rivers is an important challenge for virtually all countries in the region. In addition to the dessication of the Aral Sea, the Caspian Sea is threatened by pollution from the Volga and other rivers, pollution and accidental spills from the oil industry, and uncontrolled poaching, which threatens biodiversity, especially the sturgeon fishery. Regional agreements on management of the Caspian and the Aral Seas remain difficult, making Bank-assisted programs hard to implement. The Black Sea is affected by nutrients and wastewater discharges carried by the Danube. The experience of the Baltic Sea, where similar problems with pollution and oil spills are being reversed by regional cooperation, shows the potential for improvement.

Lessons Learned

The Bank initially focused on the environmental implications of shifting from a command to a market economy, focusing on removing distorted incentives and subsidies in agriculture, energy, and water, and establishing a regulatory framework and institutional capacity for environmental management. More recently, this agenda has been broadened to assist with natural resource management, biodiversity conservation, global commons concerns, agricultural and irrigation practices, and access of rural populations to clean water and sanitation facilities. The Bank has addressed environmental issues through a wide variety of instruments, including adjustment operations, investment projects, technical assistance, assistance to policy reform, and analytical work, which have both a direct and indirect bearing on environmental issues.

Setting priorities. Considerable efforts were devoted to developing a broad consensus on environmental issues among governments, donors, NGOs, and civil society. The Bank led the preparation of an Environmental Action Program for Europe, later adopted by the Lucerne Ministerial Conference in 1993, which emphasized synergies between reform and the environment. Subsequently, the Sofia and Århus "Environment for Europe" Ministerial Conferences in 1995 and 1998, respectively, addressed several priority issues. The Århus Conference adopted the broad recommendations and agenda for environmental

³ This group includes Armenia, Azerbaijan, Georgia, Kazakhstan, the Kyrgyz Republic, Tajikistan, Turkmenistan, and Uzbekistan.

improvement laid out for the NIS. Most countries have prepared some form of National Environmental Action Plans (NEAP) or environment strategies, often with active Bank support. Many are now preparing second generation NEAPs to correct earlier deficiencies, better prioritize investments, and develop least-cost options. Efforts to prioritize environmental issues have also been made in numerous Country Assistance Strategies (CASs) and, more recently, in Poverty Reduction Strategy Papers (PRSPs).

Sector studies and analytical work. The Bank has undertaken a number of sector studies, including efforts to understand the links between environmental problems and health; to evaluate the links between energy and environment; to argue the case for phasing out leaded gasoline, adopting cleaner fuels, improving traffic flows, and promoting more fuel efficient vehicles; to quantify the fiscal and environmental impacts from better natural resource management, particularly forests; to link increased tourism with better coastal management; and to link agricultural productivity and rural livelihoods to better agricultural practices and irrigation restructuring.

Capacity development. Capacity development has been supported throughout the region. A number of countries have received Institutional Development Grants, GEF grants for enabling activities, and—in the case of Russia and Poland—major technical assistance loans. However, governments are generally unwilling to borrow for technical assistance, and even grant assistance is often ineffective unless genuinely desired by the recipients and well integrated with local expertise.

Environmental investments. Bank investment financing has focused on industrial pollution management, reform of water and district heating utilities, energy efficiency, water supply and irrigation infrastructure rehabilitation, water resource management, land and coastal zone management, forestry, and biodiversity (see, for example, box A.3). With GEF support, the Bank has assisted ECA countries to cease production of ozone-depleting substances. GEF has also financed several geothermal projects, including the first one using the Bank's Prototype Carbon Fund (PCF).

Policy adjustments. Structural Adjustment Loans (SALs) and energy policy advice, with their emphasis on ending energy subsidies and restructuring, have helped improve energy efficiency and air quality. Ending subsidies of communal services, improving cash collections, increasing tariffs, and furthering

Box A.3

Albania: Community-based forest management in a transition economy

Forests cover 38 percent of Albania's land area, with broad-leaved forests—mainly oak and beech—predominating. Fuelwood accounts for over 40 percent of recorded timber production. Pasture land covers 15 percent of land area, and 60 percent of the population is dependent or partially dependent on pastoralism. Forest and pasture land are owned by the state. Since 1990, Albania has moved rapidly with market-based reforms, but there have been increasing problems of governance and law and order, including illegal timber harvesting.

The Community-based Forest Management Project aimed to restore degraded state-owned forest and pasture areas and promote their sustainable use; promote conservation of natural forest ecosystems; and initiate a transition of the forestry/pasture sector to a market economy, separating commercial from regulatory functions and establishing mechanisms for self-financing of the commercial activities. In addition to assisting with improving forest management at the local level and reorganizing the forest sector institutions, the project is improving trade, marketing, and pricing policies to enhance revenue; implementing an action plan to reduce illegal harvesting, in collaboration with local governments and the Ministry of Finance Tax Inspection; and supporting community forestry by providing local communities with legal user rights for communal and forest pastures, with assistance to improve their management, and with mechanisms to reinvest users fees into improved management and into training forest specialists in the public and private sector.

Because of broader poverty, law and order, and governance issues, controlling illegal harvesting and improving forest management on publicly managed land has been difficult. The transfer of user rights and management to local communities has however worked very well; user rights have been transferred for 10 years. Local communities have been assisted with development of management plans, and have invested user fees in improving the resource. This component is being expanded, and may form the basis for a follow-on natural resources and environment project.

housing privatization have also improved the viability and prevented the collapse of some district heating companies and water utilities.

Support to private sector activities. Recognizing that environmental investments in a market economy are made primarily by the private sector, the Bank has promoted policies that help the private sector address past and future environmental liability. In Bulgaria, the Bank helped finance the government's costs associated with historic environmental liability in privatization (see box 2.3 in chapter 2). The Russia Forestry Guarantee Project offers political risk guarantees for private sector investors in timber companies that abide by sustainable forestry and timber processing practices. In several instances, the Bank has attempted to provide financing for pollution abatement investments through financial intermediaries, but high foreign exchange risks, the financial risks of borrowing enterprises, limited demand for environmental projects, and weaknesses of the banking sector have limited the success of these projects.

Strategic Priorities and Actions

ECA's Environment Strategy is shaped by the ECA region's broader priorities to (a) facilitate EU accession for the fast-reforming countries of Central and Eastern Europe; (b) reverse poverty and revive growth in the NIS; (c) help bring peace and prosperity in the Balkans; and (d) foster cooperation on regional and global environment issues.

Quality of life

The Strategy aims at improving the quality of life through environmental interventions. Priority actions include:

- Improving access to safe drinking water by (a) rehabilitating or expanding urban infrastructure, in conjunction with utility reforms and privatization efforts; and (b) supporting community-developed water supply and sanitation investments in rural areas
- Mitigating health threats from toxic substances and industrial accidents by (a) helping effective environmental management and protection systems; and (b) financing clean-ups where appropriate
- Reducing health problems associated with air quality by promoting (a) conversion to less polluting sources of heat, and in part by increased metering and housing privatization; (b) higher fuel standards, increased vehicle inspections, and improved traffic management; and (c) energy reforms that will reduce power plant emissions
- Improving livelihoods through sustainable NRM by (a) assisting sustainable forest management and community-based watershed management; (b) promoting an integrated water basin approach in Central Asia; and (c) promoting energy conservation and efficient use
- Improving security through prevention and mitigation of natural disasters by (a) assisting clients in mitigating the impact of natural disasters, such as earthquakes in Turkey and Armenia, droughts in Central Asia, and floods in Poland; and (b) assisting clients to improve dam safety.

Quality of growth

The strategy aims at ensuring the quality of growth. Priority actions include:

- Integrating environmental considerations into macro and sector policies and public sector management by (a) building local capacity to assess the environmental impact of policies; (b) conducting economic valuations of environmental degradation; (c) supporting a transparent legal and regulatory framework; and (d) improving environmental regulations by strengthening environmental review capacity
- Removing environment-related impediments to investment by helping governments address environmental liability issues within the context of privatization.

Quality of the global commons

To improve the quality of the regional and global commons, the priorities for action in ECA's Environment Strategy are:

- Assisting governments to address climate change and to achieve the aims of the Kyoto Protocol. ECA countries emit some 20 percent of the world's greenhouse gases—the most of any Bank region. We will work to assist governments to complete and update their national strategies, provide technical assistance and, if requested and consistent with country assistance strategies, support projects with local and global benefits via GEF, the Prototype Carbon Fund, and Bank financing.
- Supporting biodiversity conservation by (a) helping to protect fragile or endangered ecosystems and involving local communities in the management of biodiversity and protected areas; and (b) identifying and supporting areas where global and local benefits overlap.
- Promoting corporate management of international waters by (a) assisting regional bodies to develop regulations for use and protection of international waters and their flora and fauna; (b) assisting in preserving the Caspian sturgeon; (c) reducing nutrient discharges into the Black Sea; and (d) arresting the deterioration of the Aral Sea. We will support monitoring and multi-country consensus building regarding competing demands of irrigation, energy, and other uses of scarce water resources.
- Completing programs to finance the phaseout of residual production and consumption of ozone-depleting substances.

The specific priorities clearly vary across the region. The EU accession countries need Bank advice on cost-effective ways to meet the requirements of EU environmental legislation. To a limited extent we will also continue advancing air quality improvements, mainly through interventions such as district heating and renewable energies with local and global benefits that are eligible for GEF financing. In Turkey, we expect to sharpen the focus on disaster prevention, water resources, and watershed and landscape management. In Southeastern Europe, operations will be aligned with the Strategy for Stability and Prosperity in South Eastern Europe, developed jointly with the EU. The Danube and Black Sea Program will provide the framework for activities aimed at reducing agricultural and industrial pollution, restoring wetlands, and improving wastewater management. In Russia, we will offer support in managing urban air quality related to the transport and energy sector, which poses an increasing threat to health. Because of its large GHG emissions, climate change issues are of great importance in Russia and we will seek synergies with local air quality programs and forestry policies. In addition, we will seek to promote sounder environmental management in the oil sector. In the Western NIS and Caucasus, we are addressing issues of fisheries, tourism, wetland protection, oil transportation, and oil spill prevention; supporting efforts to rationalize and rehabilitate irrigation systems, in conjunction with agricultural reforms; and working with rural communities to create sustainable community-developed rural water supply projects. In Central Asian countries and Azerbaijan, water supply and water resource management are the overriding priorities. Through regional mechanisms, such as the Aral Sea Program, we will assist the sub-region to rationally allocate water resources to energy, agricultural, urban, and ecological uses. To address the related concern of soil salinization, we will offer assistance to improve irrigation and drainage management. We are supporting the development of community-driven rural water supply and sanitation projects as well as reform of urban water supply enterprises.

Implementation of the Strategy

Cross-sectoral linkages. Given the many linkages between environmental issues and other sectors, implementing this strategy will require strong cross-sectoral alliances with colleagues working on energy infrastructure, particularly urban water and district heating, as well as agriculture, rural development, and forestry. Social assessments will be integrated into efforts to develop rural community-based improvement projects in water supply, irrigation, and agricultural practices. Close collaboration with our

1 colleagues in the poverty reduction and human development groups will also be required, particularly to
2 better assess linkages between poverty, health, economic growth, structural reforms, and environment; to
3 assess the environmental impacts of proposed structural and policy reforms; and to incorporate
4 environmental agendas and priorities into CASs and PRSPs.

5 *Safeguards.* The region will continue to apply safeguard policies to avoid negative impacts of projects in
6 all sectors, promote implementation of project-specific environmental management plans, and improve
7 oversight of safeguard policy compliance during project implementation. We intend to review safeguard
8 policies implemented by financial intermediaries in client countries with credit-line projects. With these
9 efforts and direct assistance, the capacity of client countries to conduct environmental assessments and
10 protect the environment will be strengthened.

11 *Project design and selectivity.* Project development will use a participatory approach where appropriate,
12 follow best practices, take into account lessons learned, and focus on results and how to measure them. To
13 this end, result-oriented indicators will be devised and built into project design. We also intend to work
14 with clients to cancel or restructure poorly performing projects as warranted. We will increase our efforts
15 to be selective and leverage limited resources through partnerships. GEF and PCP funds will be linked to
16 Bank projects that are identified in CASs; priority for these limited funds will be given to regional
17 projects, the NIS, and the Balkans countries. We plan to make more use of IFC and MIGA instruments
18 for mobilizing private sector investments for environmental management, particularly to help reform
19 urban water and solid waste services, modernize refineries, and promote energy efficiency. We envisage
20 to work with WBI to assist in conveying best practices and in developing avenues for clients to learn from
21 each other, such as via the Clean Air Initiative, which will enable selected cities to learn from best
22 practices and each other regarding measures to combat local air pollution.

23 *Mainstreaming environment.* Working with experts in the Bank and core ministries in our client
24 governments, we hope to develop broad-based indicators that will better monitor country performance on
25 general environmental issues, including environmental management, greenhouse gas emissions, local air
26 pollution, land degradation, carbon sequestration and conservation, and biodiversity conservation.

27 *Leveraging resources and building partnerships.* Building on established relationships, our strategy will
28 be to avoid duplicative efforts by other donors, to simplify collaborative mechanisms, and to reduce
29 transaction costs. In the EU accession countries, we will defer to the EU. In the Baltics, we will work
30 closely with the Nordic countries and their development institutions. In the Balkans, we will continue our
31 already substantial coordinating efforts among bilateral and multilateral donors and interested parties. In
32 Central Asia, we will work particularly closely with the Asian Development Bank. We will strive to
33 maximize use of mechanisms like the Joint Environment Program (JEP) to better utilize TACIS grant
34 needs for project preparation costs. On specific environmental issues, we will work closely with NGOs
35 and global funds such as GEF, the PTC, WWF, and the Alliance for Forests. We will continue to consult
36 with these partners as well as our clients to ensure that our regional strategy and annual work plans are
37 clear, complementary to other donors, and responsive to client priorities.

38

Latin America and Caribbean

The Latin America and Caribbean (LAC) Region is characterized by considerable heterogeneity in social and economic conditions, both within and across countries; economies that are increasingly integrated into the world economy; the formation of regional trading blocks such as Mercosur; a high degree of urbanization, with 75 percent of the region's 500 million inhabitants living in cities and making a living in the industrial and service sectors; and a deepening of democracy, coupled with a trend toward increasing decentralization and improved governance. These factors and trends will influence environmental conditions and management policies and shape the challenges to be faced in the coming years.



Regional Context and Key Environmental Issues

Governments in LAC have the formidable task in the short term to make cities more hospitable venues for economic development and at the same time improve the living conditions of the poor. Most countries in Latin America have been pursuing macroeconomic stabilization and liberalization policies, the impacts of which are yet uncertain, but will entail both positive ramifications, such as higher environmental standards, and negative ramifications, such as continued or even increased reliance on the natural resource base. In the coming decade, it is likely that democracy will deepen and civil society will become more proactive. This should lead to calls for a continuous integration of environmental concerns into public sector policies, notably the fight against poverty and the creation of development opportunities.

The key environmental issues in LAC include (a) urban-industrial pollution; (b) mismanagement of natural resources in areas of both existing and new settlement, and the consequent loss of both terrestrial and marine biodiversity; and (c) high vulnerability of urban and rural populations to natural disasters. The causes of degradation include the poor socioeconomic conditions of large segments of the region's population; the high dependence of many economies on the exploitation of their natural resources; limited institutional capacity to enforce environmental regulations and policies; inappropriate pricing and subsidies and unclear property rights; weak economic incentives; limited participation by stakeholders; few partnerships with polluters; and limited data and planning methodologies.

The strong links between urban environmental degradation and poor socioeconomic conditions, coupled with high levels of urbanization, suggest that urban and industrial pollution disproportionately affect the poor (see figure B.2 in annex B). For the most part, urban populations in LAC have good access to safe water, generally in the 70 to 90 percent range. This can be compared to the rural populations' access, which is typically 20 to 50 percent. Urban populations also typically have much better access to sanitation—70 to 80 percent in most LAC countries—but UNEP estimates that only about 2 percent of

wastewater is adequately treated. Access to clean water, sewage collection, solid waste collection, and air pollution control in large cities are at the top of the environmental agenda, particularly as they more intensely affect the poor segments of society.

The region is also particularly rich in natural resources and biodiversity, and mismanagement of natural resources and threats to terrestrial and marine biodiversity also rank high on the environmental agenda. According to UNEP's recent *State of the Environment* report, 6 million hectares of tropical rain forest were cleared or went up in smoke in 1998; 1,244 vertebrate species were in danger of extinction; and 300 million hectares of agricultural land suffered lost productivity as a result of soil erosion. Forest loss seems to have stabilized in much of South America, but has increased significantly in Jamaica and slightly in Central America.

Vulnerability to natural disasters is at the forefront of environmental problems in the region. Such risks include droughts in northeast Brazil and upland areas in Mexico; floods and volcanic eruptions in Central America; and floods and associated landslides in slums of most metropolitan and peri-urban areas throughout LAC. Natural disasters closely associated with climate variability have increased in frequency and intensity over the past decades, and economic losses due to these events are estimated to have increased eight-fold from 1961–70 to 1986–95. In both urban and rural areas, the poor are far more vulnerable to natural disasters than are higher-income groups.

The Bank's Record and Future Challenges

The Bank's Latin America and Caribbean Regional Office (LCR) has not had an explicit environmental strategy in the past. The implicit strategy has been to respond to emerging country demands, needs, and priorities. There are 81 active projects, totaling US\$ 2.35 billion, in which environment is a primary objective. The current portfolio consists of the following major areas of environmental activity: institutional development, biodiversity, natural resource management (NRM), water resources management, pollution management, and disaster management. In addition, there are a number of nonlending activities, including policy and strategic dialogue, such as the Mexico Policy Notes and the Mesoamerican Biological Corridor Strategic Framework Paper; analytical work, such as the Ecuador Land Administration Study; and initiatives such as the Clean Air Initiative (see box A.4).

In recent years, Bank assistance to the region has been characterized by (a) diversification of the environmental agenda from green to brown issues and from sectoral to integrated approaches through use of the Comprehensive Development Framework (CDF) and regional (landscape-based) initiatives; (b) better integration of social concerns in environmental management through promotion of community-based initiatives, greater focus on indigenous communities, and increasing attention to resettlement and other social impacts of development projects; (c) greater emphasis on participation and consultation; (d) increased use of strategic (sectoral or regional) environmental assessments; and (e) increased recognition of linkages between local and global environmental issues, including assistance to countries to meet their commitments under various international and global conventions.

Box A.4

The Clean Air Initiative in Latin American cities

The Clean Air Initiative in Latin American Cities has emerged as a complement to conventional lending operations in urban transport and air quality management to help raise awareness and increase capacity to manage air quality problems in urban areas. The Initiative is a partnership between the World Bank, city governments, private and public institutions, development banks and agencies, and NGOs interested in collaborating to improve the understanding of these problems and provide tools to city leaders for making the difficult choices involved in addressing air pollution and mitigating its health impact. The World Bank acts as Technical Secretariat and provides overall management of the Initiative, to be transferred over time to institutions in the region.

Mainstreaming environmental concerns across sectors is a key tenet of the corporate and regional strategies. Examples of areas where sector-environment linkages are being explored in Bank-financed activities include (a) in the energy sector, renewable energy and energy efficiency; (b) in the urban sector, solid waste management and slum upgrading; (c) in the transport sector, air quality management through monitoring networks, technical assistance, and better traffic management; (d) in the water and sanitation sector, wastewater management and water quality standards; and (e) in the mining sector, cleanup of contaminated sites, development of regulations, and institution building. Within the Bank, a better economic case needs to be made for environmental management and strengthening the linkages between natural resource management and poverty alleviation. Another priority is to strengthen the linkages between the health and environment agendas, as is including environment as an integral subject in early education programs.

Strategic Priorities and Actions

Key strategic priorities are linked to the quality of life, the long-term sustainability of growth, and the quality of the regional and global commons.

Quality of life

There are three particularly critical areas in which the Bank can help improve the quality of life: improving livelihoods through the sustainable management of natural resources; reducing the impact of environmental degradation on human health; and reducing vulnerability to natural disasters.

In terms of livelihoods, priorities include:

- Developing a better understanding of environment-poverty-economic growth linkages and tradeoffs, including long-term versus short-term implications of natural resource use; and subsequently incorporating environmental issues into the policy dialogue and into CASs, poverty assessments, and PRSPs
- Promoting sustainable integrated natural resource management of land, freshwater, and marine ecosystems (for example, forestry and fisheries), with a focus on highly degraded or threatened ecosystems and disaster-prone areas; ensuring generation of benefits for indigenous and poor communities, preferably through community-based approaches, using strategic implementation tools such as property rights, appropriate technology, and tradable development rights.

In the health area, priorities include:

- Developing a better understanding of environment-health linkages through analytical work and implementation of health surveillance projects to improve project design and policy dialogue, resulting in more strategically focused projects
- Improving access in the near term to safe water; collection and disposal of sewage and primary treatment of wastewater, in conjunction with a plan for future wastewater treatment; and improving solid and hazardous waste management (avoiding exposure on the part of the poor, who often live on and off of improvised or poorly managed solid waste landfills)
- Financing wastewater treatment for highly polluted or sensitive water bodies, particularly those that affect the health of downstream inhabitants and the quality of water used for agricultural, recreational, or municipal water supply purposes
- Financing air quality improvement in critical urban areas, industrial corridors, and areas of agricultural burn-offs
- Reducing exposure to toxic substances, particularly in industry, agriculture, and mining.

In terms of reducing vulnerability, priorities include: assisting clients to better prepare for and respond to natural and human-induced disasters and accidents; for example, by developing early warning systems; analyzing potential hazards; identifying suitable prevention and contingency planning techniques; preparing disaster response and disaster mitigation plans; developing risk management services such as insurance schemes; financing critical infrastructure; and using urban environmental land use planning as a preventive tool.

Quality of growth

With the private sector playing an increasingly large economic role in the region, the Bank can help ensure that private sector growth is sustainable and contributes to poverty alleviation. In addition, we can play an important role in helping our clients incorporate environmental concerns into macroeconomic and sector policies. Priority actions in LCR include:

- Developing environmentally appropriate macroeconomic policies and instruments, including growth, trade, and regional integration strategies; fiscal incentives for sound environmental management (for example, full-cost pricing that reflects environmental externalities and re-evaluation of subsidies to ensure meaningful targeting); and natural resource and expenditure accounting frameworks (see box 3.8 in chapter 3)
- Supporting targeted institution building, including regulatory and enforcement frameworks and decision-support; promoting comprehensive approaches to environmental management, including watershed management and urban development/land use planning; promoting sectoral mainstreaming and gradual decentralization, with a focus on targeted assistance for highly polluting sectors or critically polluted cities/industrial corridors; and, promoting sustainable financing of environmental initiatives through the use of fiscal instruments, appropriate pricing of natural resources and of environmental services, and positive and negative subsidies (see box 2.5 in chapter 2)
- Strengthening of awareness and building environmental constituencies through education and training
- Developing mechanisms for effective participation, negotiation, and conflict resolution, including greater stakeholder involvement in the Environmental Impact Assessment (EIA) process (for example, through public hearings); appropriate consultation on policy and program design; and use of market-based instruments, information disclosure schemes, and voluntary compliance schemes (in addition to traditional command-and-control approaches)
- Promoting clean industrial production, including environmental management systems in small and medium-sized enterprises.

Quality of the regional and global commons

The LCR Region is particularly important in terms of the quality of the regional and global commons. In this area, the priorities include:

- Promoting biodiversity conservation in critically threatened ecosystems, with a focus on comprehensive approaches, such as systems of protected areas, hotspots within a sub-region, and biological corridors; promotion of current or near-term financially sustainable national biodiversity strategies; and generation of positive impacts on local livelihoods (see box A.5).

Box A.5

A regional approach: The Mesoamerican Biological Corridor

The Mesoamerican Biological Corridor (MBC) is a continuous ecosystem band extending from southeast Mexico to the northern departments of Colombia. The Atlantic coastal areas of this zone include the second largest barrier reef system in the world. The MBC was recently identified by the international scientific community as one of the 25 critical biodiversity areas of the planet, one of the global biodiversity hotspots. For the last few years the World Bank has worked with the GEF, national governments, regional organizations, civil society, bilateral and multilateral donors, and technical cooperation agencies in supporting the MBC initiative as a unique ecosystem approach for the conservation and sustainable use of biodiversity and forest resources in Central America, and as a platform for the sustainable development of the region.

- Assisting client countries to prepare for and respond to climate change, through mitigating greenhouse gas emissions; ensuring and protecting carbon sequestration functions of forests and rangelands; promoting renewable energy and energy efficiency options; and facilitating LCR countries' participation in the international carbon markets (for example, through preparation of national strategy studies on greenhouse gas offset potential, and preparation of PCF projects)
- Phasing out of ozone-depleting substances
- Protecting and restoring international waters.

Sub-regional priorities

Environmental problems vary across the region, and priorities should vary accordingly. LCR sees itself as having a comparative advantage in the following areas: wastewater treatment of highly polluted or sensitive water bodies, which is important in Mexico and the Caribbean; air quality improvements in critical urban areas industrial corridors and areas of agricultural burn-off in Brazil, Mexico, and the Southern Cone; disaster preparedness in Mexico, Central America, and the Caribbean; promoting clean industrial production in the Andean countries; strengthening awareness and management capacity through environmental education and vocation training in the Andean countries; assisting countries to prepare for and respond to climate change in the Caribbean and Central America; and targeted institution building in the Andean countries, Mexico, and the Southern Cone.

At the same time, there are also numerous region-wide priorities: developing a better understanding of environment-health linkages and environment-poverty-economic growth linkages and tradeoffs; promotion of environmentally appropriate macroeconomic and sectoral policies and instruments; providing access to safe water, collection and disposal of sewage and solid waste management; sustainable natural resource management with a focus on threatened ecosystems, on disaster-prone areas, and on indigenous and poor communities; targeted institution building; biodiversity conservation focused on comprehensive approaches to the generation of positive impacts on local livelihoods, and sustainable financing; and strengthening mechanisms for effective participation, negotiation, and conflict resolution.

It should be noted that these priorities, which are based on extensive and internal consultation at the sub-regional level, indicate potential future areas of work for the Bank, provided they are supported by the individual country dialogues and corresponding CASs.

Implementation of the Strategy

Goals. LCR's proposed near-term goals are: avoiding negative impacts of projects; mainstreaming environment in other sectors as well as generating critical mass in selective environmental operations; working more effectively with our client and donor countries; and becoming increasingly results-oriented. In order to achieve these goals, we aim to do the following:

- Avoid negative impacts of projects by improving screening and facilitating upstream guidance with respect to safeguard policies in operations, ensuring environmental due diligence in operations as required under Bank policies for environmental assessment and adjustment lending, emphasizing thematic supervision, and increasing the use of strategic environmental assessments
- Mainstream and generate critical mass by improving understanding of poverty, growth, and environment linkages, preparing background papers as input to CASs with critical environment problems, providing operational support to monitor implementation of PRSPs, including environment in sectoral strategies, developing GEF, MP, and Climate Change strategies in countries/region, emphasizing a programmatic approach, promoting mainstreaming by developing cross-sectoral products (for example, environment/infrastructure, environment/health), and improving selectivity in new environmental projects

- 1 ■ Work more effectively with clients and donors by making the case for environmental management
2 that is convincing for Finance Ministers and legislators, promoting greater collaboration within public
3 sector and between public sector, private sector and civil society, and seeking complementarity with
4 respect to other donors' programs, given the Bank's comparative advantage (for example, using CDF
5 as a tool)
- 6 ■ Become increasingly results-oriented by developing and incorporating impact indicators in project
7 design and implementation, improving the results of operations under implementation, and being at
8 the forefront of best practices.

9 *Operational implications.* In implementing this strategy, LCR proposes to work across different sectors in
10 the Region. In particular, we envisage close collaboration between the Environment Group, the Poverty
11 Reduction and Economic Management Group, and the Human Development Group, particularly given the
12 emphasis on better understanding the linkages and tradeoffs between poverty, economic growth, and
13 environment, and between health and environment. We envisage a continued close collaboration between
14 the Environment Group and the Finance, Private Sector, and Infrastructure Group to further build upon
15 the work that has already been undertaken. Within the Environment Group, we propose a greater
16 selectivity with respect to self-standing environmental projects.

17 *Working with partners.* We will continue to collaborate with our external development partners, including
18 the ECLAC, FAO/CP, IDB, OAS, UNDP, UNEP, and the bilateral agencies, to ensure complementarity
19 with our mutual work programs and a flow of information between parties. With respect to the GEF, our
20 main thrust in coming years will be to help our clients
21 integrate global environmental concerns into their
22 national development strategies. Finally, in addition to
23 our country clients, we also expect the private sector
24 and NGOs to play an essential role in realizing the
25 strategy (see box A.6).

26 *Safeguards.* With respect to safeguards, we also
27 propose to enhance the effectiveness of the regional
28 Quality Assurance Team (QAT) by emphasizing a
29 collaborative, problem-solving approach in the
30 safeguard review process. This implies upstreaming
31 the dialogue on safeguards to early stages of project
32 preparation and to sectoral discussions, issuing
33 technical guidelines, and disseminating best practices
34 to sectoral project proponents and client countries;
35 increasing the use of strategic environmental
36 assessments; putting greater emphasis on compliance
37 during implementation (for example, through thematic
38 supervision and periodic reviews for specific
39 safeguard policies); and carrying out due diligence in
40 adjustment and financial intermediary lending (in
41 addition to standard investment operations) as required
42 under Bank policies for environmental assessment.

43 *Challenges and risks of implementation.* The
44 challenges of implementing this first LCR
45 Environment Strategy include (a) agreeing on realistic
46 goals and targets with the regional management team;

Box A.6 **Public consultation during the preparation of** **the LAC Environment Strategy**

A draft of the LAC Environment Strategy was posted on the Web in early August 2000 and reinforced by an e-mail campaign promoting widespread dissemination. Throughout the Fall, participants could read the strategy, answer a short questionnaire online, and were provided with a forum for comments and questions. Three sub-regional consultations were held in the Fall of 2000: in Cartagena, for Andean countries, in Rio de Janeiro, for the MERCOSUR countries, and in San José, Costa Rica, for Mexico, Central American and Caribbean countries. Comments from more than 200 external participants have been received via the various consultations. More than 2,000 people from public and private sectors, NGOs, civil society, and academia have logged on to read the strategy. Feedback was heaviest from the over 100 NGOs contacted and the private sector. The dialogue was very constructive and input from all participants helped fine-tune the environmental priorities, criteria for decisionmaking, and lessons learned. The strategy was also presented in Mexico City in October 2000 at the Intersessional Committee of the Forum of Environment Ministers. Soon, thereafter, numerous development partners, including the FAO/CP, IDB, OAS, Pan American Health Organization, UNDP, and WHO attended a similar presentation and affirmed their interest in collaborating in the implementation of the strategy.

1 (b) working out the implications for a gradual shift in the assistance strategy, including budgets, strategic
2 staffing, and partnerships; (c) establishing the right incentive structure to support implementation of the
3 strategy, especially mainstreaming (for example, joint products and increased cross-support); (d) ensuring
4 compatibility with other sector strategies, including Fuel for Thought, forestry, water, rural, and urban
5 transport strategies; (e) incorporating this program into CASs; and (f) developing instruments and funding
6 mechanisms for regional initiatives and non-lending services, such as the Mesoamerican Biological
7 Corridor, Clean Air Initiative, and the Regional NGO and Ministerial Dialogue. We propose to adopt
8 Annual Work Plans as a mechanism for implementation of the strategy, allowing flexibility for the
9 Region to best respond to evolving client demand and complementary activities on the part of other
10 development partners.

11

Middle East and North Africa

In 1995, the Middle East and North Africa (MNA) Region completed its first regional Environment Strategy, entitled *Towards Sustainable Development: An Environmental Strategy for the Middle East and North Africa Region*. The strategy outlined in this paper updates the 1995 strategy, whose objectives are still valid today.

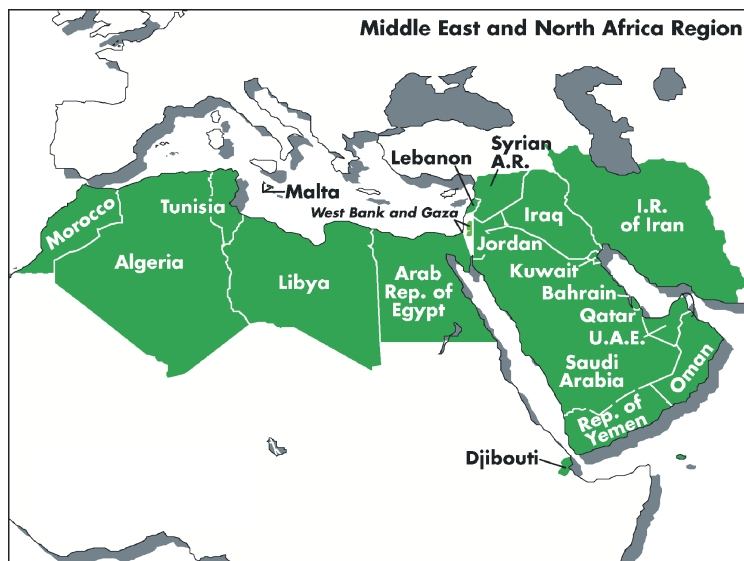
Regional Context and Key Environmental Issues

The MNA Region includes 21 World Bank client countries with a combined population in 1997 of 279 million. The substantial investments made since the 1960s on health, education, basic infrastructure services, and more recently on family planning have begun to show positive results. Between 1980 and 1997, the region made impressive progress in lowering population growth from 3.2 to 2.1 percent annually; lowering infant mortality from 95 to 49 per 1,000 live births; increasing life expectancy from 59 to 67 years; and increasing secondary school enrollment from 42 to 64 percent. Declining population growth, accompanied by increasing GNP, contributed to a reduction in poverty. From 1987 to 1998, the population living below \$2 per day fell from 30 to 20 percent. However, the region still faces large income gaps. On average, the richest 20 percent account for more than 45 percent of total income, compared to less than 7 percent for the poorest 20 percent.

Long-lasting environmental issues

The region is disproportionately endowed with natural resources. It is the world's richest in oil and gas reserves, and the poorest in renewable water and arable land. It continues to rely excessively on natural resources as a development strategy. Water and oil are being used at unsustainable levels. MNA countries have the following longstanding environmental issues, which only differ by magnitude and severity between countries:

- *Water scarcity and quality.* Annual renewable water resources per capita are expected to fall from 1,045 cubic meters per year in 1997 to 740 cubic meters per year by 2015. Water allocation is a major concern for governments. In part because of policies designed to increase food self-sufficiency, 88 percent of MNA's water resources are allocated to the agricultural sector, compared to 7 percent for domestic use. The degradation of water quality is also aggravating the water scarcity problem.
- *Land degradation and desertification.* Arable and permanent cropland in the region currently represent less than 6 percent of total land area, and is shrinking as a result of serious land degradation and recurrent droughts. Unsustainable agricultural practices on rainfed lands, combined with natural factors—such as wind and floods—and excessive fuelwood removal have contributed to a substantial loss of productive land and desertification.



- 1 ■ *Coastal degradation.* Major coastal cities in MNA are attracting local population and tourists faster
2 than inland areas. Lack of integrated coastal zone management is exacerbating the increased
3 competition over the allocation of land and marine resources.
- 4 ■ *Urban and industrial pollution.* Urban and industrial pollution causes significant public health
5 problems in the region. The transport, industrial, and energy sectors have substantial impacts on
6 human health through the use of leaded gasoline, the use of high-sulfur fuel oil, a strong reliance on
7 polluting fuels in power generation, and particulate and sulfur oxides emissions from various
8 industries. Solid waste collection systems are generally well developed, but proper disposal is largely
9 lacking, especially in rural areas. Industrial hazardous waste is rarely treated adequately. Major cities
10 bear the brunt of MNA's pollution problems.
- 11 ■ *Weak institutional and legal frameworks.* Environmental problems are aggravated by weak regulatory
12 and enforcement mechanisms. Although the region has made progress by establishing ministries of
13 the environment, preparing or enacting environmental legislation, and preparing national
14 environmental action plans (NEAP); these institutions are under-staffed and under-funded, and
15 generally lack credibility and political power. Cross-sectoral linkages between ministries and public
16 institutions are also weak. The legal framework is based on a command-and-control approach with
17 weak monitoring and enforcement regimes. The role of civil society in environmental management
18 remains limited, in part because existing NGOs are small, young, local in nature, and often dependent
19 on the government and international donors for budgetary support.

20 These long-lasting environmental issues result in a heavy drain on the region's economies. NEAPs
21 estimate that the annual cost of environmental damages varies from 4 to 9 percent of GDP—higher than
22 in Eastern Europe, estimated at 5 percent, and substantially higher than in OECD countries, estimated at 2
23 to 3 percent. The cumulative impact of land degradation is estimated to have reached a cost of about
24 \$1.15 billion a year in lost agricultural productivity. The environmental health burden is estimated to be
25 about 14 percent of the region's total health burden. Of this total, about 8 percent is attributable to
26 inadequate water supply and sanitation and about 3 percent to urban air pollution. The rural and urban
27 poor suffer the most, since low-income housing is often plagued by unreliable drinking water supplies,
28 inadequate sewerage, poor solid waste management services, poor location on lands subject to floods, and
29 other natural hazards.

30 *Emerging issues.* As MNA countries struggle with their longstanding environmental problems, they must
31 also confront (a) the environmental dimensions of their own economic liberalization, as most are
32 committed to market-based economic reforms; (b) their free trade agreements with the European Union;
33 and (c) globalization. Improving economic growth while maintaining a sustainable natural resource base
34 and remaining competitive in international and domestic markets are fundamental challenges for the
35 region. As countries move forward with trade liberalization, private sector development, and
36 privatization, the challenge is to assist them in these transitions while ensuring a sustainable use of their
37 natural resources.

38 **The Bank's Record and Future Challenges**

39 The 1995 Environment Strategy marked a major milestone in guiding MNA countries, the donor
40 community, and the Bank toward promoting sustainable development in the region. It emphasized three
41 key strategic objectives: (1) improving natural resources management; (2) arresting emerging pollution
42 problems; and (3) strengthening environmental institutions and increasing public participation.

43 *Lending activities.* During the first five years of the strategy's implementation, investments in
44 environment-related projects totaled \$3.4 billion, including \$2.3 billion allocated to water-related
45 projects. MNA also increased its poverty focus through social funds, community development programs,
46 rural development, natural resource management, and basic health projects, which together totaled \$650

million. There was notable progress in protecting natural resources in Algeria, Egypt, Morocco, and Tunisia. Efforts to control industrial pollution are ongoing in Algeria and Egypt; and initiatives to reduce urban pollution are being implemented in Lebanon, Tunisia, and Yemen. In Algeria, Egypt, and Morocco, projects are underway that would strengthen environmental institutions and encourage greater public participation. The GEF has financed nine projects in the region.

Non-lending activities. The Mediterranean Environmental Technical Assistance Program (METAP), sponsored by the World Bank, EC, EIB, and UNDP, played a major role in evaluating national environmental strategies and helped establish environmental impact assessment units in various countries (see box 3.3 in chapter 3). Regional training helped strengthen the capacity of environmental institutions. The NGO small grant program and other regional initiatives all sought dialogue and participation with NGOs in the design and implementation of environmental activities. Efforts to promote regional collaboration included the water, desertification, and trade and environment initiatives.

Lessons Learned

Progress has been slower than anticipated. The objectives of the 1995 strategy were too broad and overly optimistic. Important substantive lessons have been learned:

- Be realistic about what countries can achieve in the next five years, especially given that most countries are now facing the impact of globalization, in addition to their long-lasting environmental and social issues. This strategy update will focus on a few high-priority actions, accompanied by outcome indicators that can be identified and monitored by the countries themselves.
- Further mainstream environmental issues in the Bank and in client countries. Efforts have been made to mainstream environmental issues into the Bank's core work. For example, the environment has been integrated in the latest CAS of Tunisia, in the CDF of West Bank/Gaza, and in the Country Development Review (CDR) of Yemen. Additional efforts are needed in the coming years to move away from stand-alone environmental projects toward including strong environmental components in other sectors, such as transport, energy, education, urban, and rural development.

The Bank's disadvantage in project lending. The World Bank is not alone in offering assistance to MNA countries. Since 1990, the region has witnessed a rapid surge of international and regional activities. Multilateral and bilateral donors increased their assistance in areas identified in the 1995 MNA Environment Strategy and in the NEAPs, drawing clients away from Bank lending. Clients, for obvious reasons, prefer to borrow from the European Investment Bank (EIB) because of the availability of a 3 percent EU subsidy on environment-related projects. In addition, the EU, Germany, Japan, and the United States have also increased their grants and concessionary lending to the region. This change in the regional context has severely affected Bank financing of environment-related projects. Bank financing, which totaled \$3.4 billion during the 1995–2000 period, is expected to decline in the coming years.

Strategic Priorities and Actions

Strategic priorities and actions are separated into three interrelated aspects of development—quality of life, quality of growth, and quality of the regional and global commons. The actions proposed in this Environment Strategy Update are not intended to be add-ons or isolated actions in sectors already being addressed. Rather, they are intended to reinforce the mainstreaming effort currently underway by focusing on specific actions that are essential to ensure sustainable development.

Quality of life

In the MNA region, action in three critical areas can help improve the quality of life: improving water resource management, controlling land and coastal zone degradation, and reducing urban pollution. The proposed actions in each area are:

1 *Improving water resource management.* Water scarcity and water quality stand out as particularly
2 challenging issues in this mainly arid region. The proposed actions are to:

- 3 ■ Focus on integrated water resource management, put emphasis on demand-side management and
4 water conservation, and facilitate the introduction of technologies that improve water-use efficiency
- 5 ■ Finance wastewater treatment plants and develop guidelines for water re-use, especially in agriculture
- 6 ■ Finance cost-effective sanitation measures and hygiene education activities, especially in poor rural
7 areas
- 8 ■ Integrate monitoring and enforcement components for water quality into all water- and wastewater-
9 related projects; strengthen the involvement of local communities in this monitoring process; and
10 ensure the widespread sharing of information on water quality.

11 *Controlling land and coastal zone degradation.* Proposed actions include to:

- 12 ■ Establish reliable baseline data for water and soil contamination from agricultural runoff and develop
13 effective methods to control agricultural pollution; improve land management and mitigate the
14 impacts resulting from urban encroachment into agricultural areas; work with Bankwide natural
15 resources management networks to pursue a unified program on land management; and provide a
16 framework for real participation by local communities and stakeholders in the management of the
17 natural resource base
- 18 ■ Develop coastal zone management strategies and programs that emphasize coordinated and
19 preventive measures to combat coastal-zone degradation.

20 *Reducing urban pollution.* In order to improve the quality of life in urban areas, the Bank proposes to
21 focus on the following areas:

- 22 ■ *Air pollution:* Conducting energy-environment reviews; developing environmental guidelines for the
23 energy sector; developing proper legal and institutional frameworks to address market failures in the
24 energy sector; encouraging the phase out of leaded gasoline; implementing public awareness
25 campaigns about the health impact of leaded gasoline; and introducing inspection and maintenance
26 programs for vehicles
- 27 ■ *Waste management:* Developing the institutional and legal frameworks necessary to support
28 integrated waste management; introducing affordable financing mechanisms for the collection,
29 treatment, and disposal of waste; and increasing awareness and participation of communities in all
30 aspects of solid and hospital waste management.

31 ***Quality of growth***

32 The World Bank will support environmentally sustainable growth in the region in two areas, capacity
33 building and strengthening the private sector.

- 34 1. *Capacity building.* Proposed actions include strengthening national legal frameworks to include
35 environment and social safeguards, and improving self-monitoring and enforcement mechanisms;
36 harmonizing national EA regulations with international requirements, and assisting countries to shift
37 from project-specific EA to sector EAs whenever appropriate; working with the public and private
38 sectors to promote clean technologies; increasing public consultation and information dissemination;
39 including an environmental awareness component and strengthening the role of governance in
40 appropriate projects; involving NGOs, civil society, and community leaders in the design and
41 implementation of projects; encouraging women's participation; and building the capacity of
42 institutions to develop early warning systems and preparedness plans for floods and droughts.

2. *Strengthening the private sector.* The manufacturing and service sectors are expected to be the primary engines of economic growth in MNA. The private sector must therefore assume an expanding role in environmental management, assisted by an effective public policy regime. Activities to improve the environmental capacity of the private sector would be designed through METAP or the Development Grant Facility (DGF). Such activities would include (a) assisting domestic banks in managing the new risks and exposures to environmental regulations and providing reasonable and transparent environmental regulations that support both environmental objectives and private sector development; and (b) continuing the work on environment and trade begun under METAP, including conducting rapid country assessments to determine the sectors most sensitive to changes in environmental regulations; developing case studies and training to assist policymakers in understanding the implications of environmental standards on trade; assisting countries in adapting to a new domestic regulatory environment and international business practices; promoting reasonable and transparent environmental regulations and standards; developing guidelines to incorporate environmental considerations into privatization transactions; and setting up clear environmental performance objectives to deal with past environmental liabilities.

Quality of the regional and global environment

To promote the quality of the regional and global environment, the Bank will continue to support its regional initiatives in MNA region and will integrate global environmental issues into its operations.

Regional initiatives. The Bank's involvement in three regional programs—METAP, the Desertification Initiative, and the MNA Regional Water Initiative—will continue. METAP will remain the major instrument for providing technical assistance to strengthen the Bank's environmental work. Specific programs for water quality improvement; municipal and hazardous waste management; environment safeguards; trade and finance; knowledge management; and development of local capacity will be presented to potential donors for financing. The Bank will also continue to strengthen partnerships with regional and international agencies in designing and implementing its regional initiatives.

Global environmental issues. The pipeline includes six projects that address greenhouse gas reduction, three on biodiversity conservation, and two on coastal zone management. New GEF Operational Programs in transport and Integrated Ecosystem Management offer new opportunities to use GEF resources in transport, urban planning, and integrated rural development projects. A more systematic approach is needed to mainstream global environment issues into lending and non-lending activities and assist countries in meeting their commitments under international treaties and conventions. An analysis of the lending program matched with country priorities should be conducted to estimate the potential for GEF projects, establish priorities in every country, and develop an action plan.

Implementation Arrangements

Given the diversity among the countries in the region, actions to implement this strategy update must be specified at a country level. Bilateral grant financing will be instrumental in accelerating the implementation of these actions.

Mainstreaming the environment. The following four tools will be used to mainstream environment into the development agenda:

1. Enhancing the quality and effectiveness of countries' environmental and social assessments by (a) strengthening national project approval systems; (b) introducing strategic environmental assessment of macro/micro economic policies and sector environmental assessments; (c) training client countries to use these assessments; and (d) exchanging lessons learned about the implementation of these assessments

2. Demonstrating the economic importance of a clean environment by (a) undertaking studies to assess the cost of environmental degradation in MNA countries; (b) conducting analytical work to identify linkages between environment and trade; and (c) mainstreaming the environment into PRSPs. This analytical work will be used to identify priority environmental intervention in the CAS. Within the scope of this strategy, the countries targeted for mainstreaming the environment into the CAS are Algeria, Egypt and Lebanon
3. Integrating environmental components into targeted sectoral projects in water resources management, wastewater management, solid waste management, the transport and energy sectors, and the health and educational sectors. Efforts will also be made to integrate global environment issues into the Bank's operations, including the protection of biodiversity in natural resources management and community development projects, and the reduction of greenhouse gases in transport, energy, and waste projects
4. Developing a Monitoring and Evaluation (M&E) system as well as indicators to measure progress at the project, program, strategy, and policy levels. In order to support the M&E systems, environmental profiles for each MNA country will be developed. Subject to availability of funds, a regional consultation meeting of all stakeholders will be convened every two years to monitor progress in achieving the strategic actions. In addition, the environment cluster would submit to the MNA Regional Management Team and to the Environment Sector Board an annual report on the region's environmental performance.

Partnerships. The implementation of the proposed strategic actions would require important leadership, collaboration, and coordination with different stakeholders, including NGOs, bilateral and multilateral donors, and international financial institutions. Partnerships will become an important cornerstone for the Bank's environmental assistance in the MNA Region. At the country level, the Bank would be prepared to participate or convene a donor-country coordination group on environment to achieve a greater integration of efforts and reduce overlaps. The CAS and CDF will be the instruments to highlight government and bilateral donor policies in undertaking the appropriate strategic actions. The Bank would continue to seek co-financing and mobilize grant and concessionary lending resources with bilateral and multilateral donors such as the EU, Japan, and USAID, and international and regional financial institutions such as EIB, KfW, and the Islamic Development Bank. At the regional level, the Bank would seek collaboration between METAP activities and other regional organizations such as MAP, CEDARE, various NGO networks, and the Environment-Development and Actions of Maghreb.

Selectivity. The Bank will re-focus some of its activities by:

- Gradually shifting from stand-alone environment TA projects to integrating environmental TA components into sector operations with well-defined outputs
- Discontinuing the preparation of additional environment sector notes or NEAP updates
- Refocusing the functions and responsibilities of the Region's environment staff toward providing upstream technical and policy support; ensuring compliance with the Bank's environment and social safeguard policies; and improving the implementation of environmental components in various projects.

South Asia

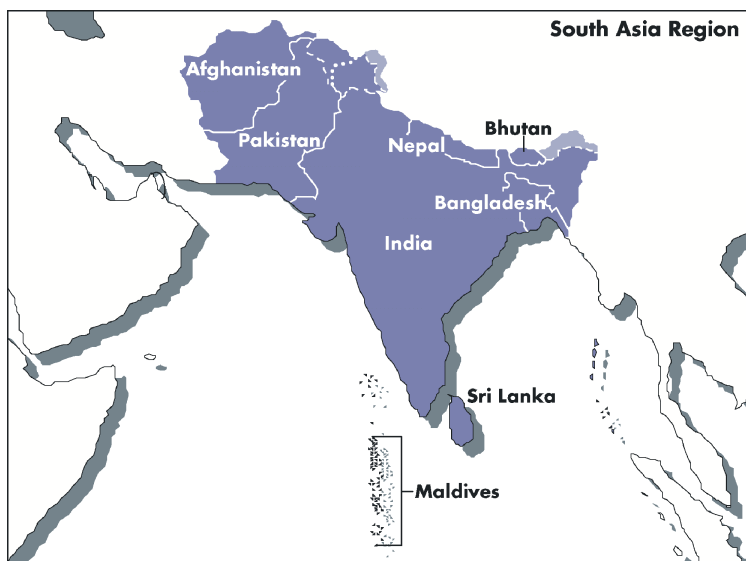
Regional Context and Key Environmental Issues

For the past decade, South Asia has been the second fastest growing region in the world, after East Asia. Economic growth averaged over 5 percent, yet the region is home to 40 percent of the world's poor, a majority of whom live in rural areas. Despite considerable progress, the region continues to face fundamental constraints to sustainable development, including inequitable economic growth; persistently low levels of human development and low status afforded to women; feudal social structures

that are reflected in political power relationships; the absence or weakness of local government and exclusion of the majority of the population from decisionmaking and access to basic services; unabated environmental degradation; and failure of institutions to provide sufficient integration of environmental and social development considerations into economic policy objectives.

Despite progress since the early 1990s on economic reforms and developments in environmental institutions, countries in the region are still plagued by huge problems related to limited progress on trade liberalization; enabling environments for private sector participation, including the rule of law; fiscal and financial policies; and openness and accountability of public institutions. Poor economic management is also reflected in the large subsidies and lack of economic pricing of natural resources, including water, energy, agricultural land, and inputs. In addition, many state-owned industries—such as steel, fertilizer, and petrochemicals—and private manufacturing industries—such as leather, textiles, sugar, pulp, and paper—have prospered as a result of strong government protection policies and lack of compliance with environmental regulation. In this context, reform agendas, including deregulation and fiscal efficiency, often conflict with political institutions and interests.

The region's environmental problems are enormous. They include resource depletion and ecological degradation; indoor and urban air pollution; lack of access to clean water supplies and sanitation; toxic and hazardous agro-industrial waste generation and disposal; and vulnerability to natural disasters. These problems, magnified by the inadequacy of governance structures in every country of the region, and at all levels, threaten or are the cause of the loss of life and livelihoods of millions of people. Estimates suggest that premature deaths and illness linked to major environmental health risks account for one fifth of the total burden of disease in the region. This is comparable to malnutrition (15 percent) and is larger than all other preventable risk factors. Estimates for India are that water and sanitation account for 9 percent and indoor air pollution 6 percent of the environmental health burden. It is estimated that air pollution causes 168,000 premature deaths annually in Pakistan (60 percent of which are attributable to indoor air pollution), and 132,000 premature deaths in Bangladesh (70 percent from indoor air pollution).



1 Significant natural resources concerns in South Asia include water quality degradation and local and
2 regional water scarcity; dwindling forests, coastal wetlands, freshwater bodies, and fisheries; soil
3 degradation from nutrient depletion and salinization; and poorly managed water resources. Many of these
4 issues are particularly important for the rural poor and disadvantaged groups, who depend heavily on
5 renewable natural resources.

6 South Asia stands out as the region most vulnerable to natural disasters, such as floods and cyclones,
7 which affect the region on a regular basis. From 1990 to 1998, the region accounted for over 60 percent of
8 disaster-related deaths. Over the 1965–98 period, India accounted for about 64 percent and Bangladesh 25
9 percent of the damages arising from natural disasters. Floods, cyclones, hurricanes, and typhoons were
10 responsible for 86 percent of the damage during this period.

11 The causes of resource depletion and environmental degradation include lack of incentives for resource
12 conservation and protection; lack of institutional frameworks for the integrated management of natural
13 resources; inadequate legal and policy frameworks; weak governance; low institutional capacity;
14 subsidies and policy distortions; lack of
15 public awareness of the value of
16 healthy and sustainable ecosystems;
17 and limited data on resources and
18 environmental quality.

19 **The Bank's Record and Future** 20 **Challenges**

21 In the early 1990s, most environmental
22 projects in the region dealt with natural
23 resources issues, including water
24 resource management projects in
25 Bangladesh and India (see box A.7);
26 forestry and fisheries projects
27 addressing both production and
28 resource degradation issues in
29 Bangladesh, India, and Pakistan; and
30 irrigation and drainage projects that
31 focused on soil salinity and land
32 degradation in India and Pakistan. As
33 pollution concerns worsened, an
34 increasing share of projects dealt with
35 urban and pollution problems.

36 In the mid-1990s, the Bank increased
37 its emphasis on improving
38 environmental management by
39 supporting more effective policies,
40 regulations, and procedures, as well as
41 pollution prevention and control in
42 countries such as Bangladesh, India,
43 Pakistan, and Sri Lanka. The Bank
44 sought to integrate environmental
45 issues into other sectors, such as
46 transport, fisheries, and education. The
47 mid-to-late 1990s also saw increased

Box A.7 **Sustainable watershed management in India**

The South Asia Region is implementing a new generation of NRM projects focusing on the needs of the poor living on marginal lands and degraded watersheds. These projects integrate community-led development with innovative social, technical, scientific, and GIS-based monitoring and evaluations approaches.

The Integrated Watershed Development Project (Hills II) in India uses participatory approaches to increase the productive potential and promote sustainable watershed management in five Indian states (Haryana, Himachal Pradesh, Jammu and Kashmir, Punjab, and Uttar Pradesh) in the fragile and highly degraded Shivaliks Hills. The project covers 2,000 villages in an area of 200,000 hectares. Village development committees (VDCs) have been formed and given the responsibility for identifying and implementing priority watershed interventions in their villages. Multi-disciplinary Government teams assist the VDCs to prepare and implement village watershed development plans. Project activities include micro-watershed treatments (such as vegetative barriers, improved cropping systems, horticulture, and silvi-pasture); fodder and livestock development (including genetic improvement based on artificial insemination, veterinary health improvement, and fodder production), and rural infrastructure.

The medium- to long-term aim of these investments is to improve rural livelihoods through stronger community management of natural resources on a sustainable basis. In some villages, increased water availability, reduced soil erosion, improved vegetative and forest cover, and increased crop and horticulture yields and milk production are already evident. Project activities also help reduce risks from natural and environmental disasters. For example, improved water management reduces vulnerability to droughts.

The participation and empowerment of villages, reorientation and training of public agencies to facilitate community-driven watershed development approaches, and an enabling policy and institutional environment for sustainable natural resource management will all require close attention throughout the duration of the project and beyond.

1 attention to projects that focused on global and trans-boundary issues. For example, the Bay of Bengal
2 Environment Program, which addresses fisheries research, environmental emergencies, large marine
3 ecosystems, and coastal zone management in and around the Bay of Bengal, involves numerous riparian
4 countries.

5 As the decade comes to a close, the Bank is emphasizing development outcomes, and specifically
6 ensuring that environmental programs benefit the poor. Programs and policy reforms are increasingly
7 focused on reducing environmentally related health risks; improving livelihood systems, particularly in
8 rural areas; reducing vulnerability to natural and environmental disasters; and improving governance. The
9 Bank also has continued to promote a coordinated and holistic approach to development assistance;
10 building partnerships; and integrating environmental issues into sectoral and thematic strategies. The
11 environmental portfolio is thus beginning to reflect issues highly relevant to poverty outcomes. This can
12 be seen in two major areas. First, the Bank is supporting innovative analytical work on the role of water
13 supply and sanitation and reduced air pollution in achieving health outcomes, both in urban settings. For
14 example, a study in Andhra Pradesh, India, designed to assist the preparation of a State Environmental
15 Action Plan, is assessing the overall burden of ill-health associated with lack of water and sanitation
16 infrastructure and exposure to indoor air pollution from the use of wood and dung for fuel. Second, there
17 is a sharper focus in all projects' development objectives on poverty impacts; examples include projects
18 on sodic lands reclamation, joint forestry management, integrated watershed development, and fisheries
19 management.

20 **Strategic Priorities and Actions**

21 Consistent with the principles of the CDF, the present Strategy builds on the results of three years of
22 realignment of environmental work in South Asia to focus primarily on development outcomes and the
23 quality of operations and business procedures. While supported by a number of country and regional
24 studies, the Strategy also incorporates the results of continuous learning and interaction with clients and
25 partners, including recently held consultations on the emerging Bank Environment Strategy in South
26 Asia. The Strategy has extensive overlaps with all of the main pillars of the Bank's development
27 approach, including: (a) efficiency (with a particular focus on power, water, and petroleum sector reform
28 measures); (b) poverty-focus (economic and social savings gained through improved environmental
29 management have been shown to be highly progressive in both urban and rural areas); and (c) governance
30 (since public sector performance is the key to improving environmental management, and not the need for
31 additional financial resources).

32 Because South Asia is among the most populated and impoverished regions in the world, our Strategy
33 focuses on contributing to making a difference in the quality of life of poor people by improving their
34 health and livelihoods systems, as well as reducing their vulnerability to changes in environmental
35 conditions. In addition, because equitable and sustained economic growth remains essential to
36 substantially improving the quality of life of poor people in the region, our Strategy contributes to the
37 development of policies and enabling conditions that support long-term quality of growth. Finally, our
38 Strategy also seeks to improve the quality of the regional and global commons in order to (a) capture a
39 significant part of their benefit flows locally, through the help of international financing mechanisms; and
40 (b) contribute to lessening the vulnerability of the region's poor to the effects of global environmental
41 deterioration, as for example with climate change.

42 ***Improving the quality of people's lives through better environmental conditions***

44 Our strategy will continue the Bank's efforts over the past three years to promote environmental
45 improvements as a fundamental part of development outcomes through supporting initiatives, programs,
46 and policy reforms that are targeted to:

- 1 ■ Improve livelihood systems, particularly in rural areas, through (a) better management and improved
2 productivity of the natural resources on which the poor depend (see box 2.4 in chapter 2); (b) support
3 for institutional reforms, incentive structures, and improved governance, particularly decentralization
4 efforts; (c) improved infrastructure, including access to markets, access to safe drinking water, and
5 access to water for agriculture; (d) improved access to agricultural technology, such as more
6 productive drought-resistant cropping systems; (e) improved access to credit, for example through
7 micro-finance; (f) improved access to energy and alternatives to solid fuels; (g) improved education
8 and information services, including female education and extension services; and (h) support for
9 initiatives to eliminate the gender gap and foster inclusive institutions
- 10 ■ Reduce environmentally related health risks by (a) reducing exposure to indoor and outdoor air
11 pollution (see, for example, box 3.2 in chapter 3); (b) providing access to safe and reliable drinking
12 water supply; (c) providing access to sanitation and solid waste services; and (d) supporting mass
13 hygiene and education programs. One of the key areas of our focus will be on institutional reforms to
14 improve service delivery, fiscal sustainability; and public-private partnerships
- 15 ■ Reduce vulnerability to natural and environmental disasters through support for changes in land-use
16 planning, disaster preparedness, community involvement and education, water conservation and
17 management, and emergency-phase interventions. We will also increase our work on social protection
18 measures to protect people who are vulnerable to natural disasters.

19 Refocusing our strategy in order to contribute to poverty reduction outcomes will also require addressing
20 issues related to governance and supporting the emergence of institutions that can help empower the poor.
21 Recent experiences through Bank projects and local success stories are providing evidence that social
22 capital and participatory processes are as crucial to poverty reduction as are financial resources and
23 development programs. Environmental institutions in the region are particularly weak and inefficient and
24 would require reform and continued strengthening in order to become contributors to development
25 outcomes.

26 ***Improving the quality of growth to support long-term sustainability***

27 Because of the region's enormous environmental challenges and continued pervasive poverty, equitable
28 and sustained economic growth is essential to producing lasting quality of life improvements, particularly
29 among the poor. In this context, policies and enabling conditions have been a major focus of every
30 country program, and our interventions will focus on two main areas:

- 31 1. *Integrating environment into Country Assistance Strategies.* This will be accomplished through three
32 key instruments: (a) deepening macroeconomic and sectoral reforms; (b) mainstreaming the
33 environment into sector operations, including operational support for the implementation of the
34 safeguard policies; and (c) strengthening the analytical and empirical basis of our operational work.
35 Recent and ongoing CAS works in India, Nepal, and Pakistan are examples of this approach.
- 36 2. Enhancing project quality through strengthened implementation of safeguard policies. The overall
37 focus in the region is on enhancing project quality by aiming for the most appropriate
38 environmentally sustainable outcomes. Despite the fact that a strong emphasis on safeguard policies
39 may have a constraining effect on efforts to mainstream the environment, the focus on overall quality
40 would not only ensure compliance on environmental safeguards, but also enhance environmental
41 management in South Asia.

42 The shift in Bank lending operations toward a greater emphasis on programmatic lending has enhanced
43 the promotion of strategic sectoral and regional environmental assessments to ensure adequate attention to
44 environmental safeguards and good practice. Examples include sectoral assessments for energy reform
45 projects in India and regional assessments for watershed projects in India and Pakistan. In addition, more

1 attention is being given to integrating social and environmental assessments because of the intertwined
2 nature of the issues involved. Combined environmental and social sectoral assessments for transport,
3 urban, and rural development projects are now routinely being conducted in South Asia. Furthermore,
4 there is increasing emphasis on environmental monitoring and evaluation, which is taking advantage of
5 modern information management tools and human resources. Finally, the Bank is placing a strong
6 emphasis on local ownership and consensus building among its clients in South Asia to help them
7 strengthen their environmental safeguard systems and practices. For example, the Bank is working
8 collaboratively within the region and with the Asian Development Bank on the development of new
9 resettlement policies in Pakistan and Bangladesh.

10 ***Enhancing the quality of the global and regional commons***

11 The degradation of the region's global commons can constrain economic development because of its huge
12 opportunity cost and threat to political security; for example, the region's water resource systems are
13 highly interdependent. Our focus is on achieving global environmental objectives as a by-product of
14 promoting local development benefits.

- 15 ■ The management of shared river basins and seas poses an important challenge for the South Asia
16 Region. The Bank has been involved in the past in helping to facilitate a robust agreement between
17 India and Pakistan on the Indus river basin. The region could derive substantial benefits from greater
18 cooperation among riparians on other internationally shared river basins, primarily the Ganges-
19 Brahmaputra-Meghna basin.
- 20 ■ South Asia is important from a climate change point of view in two respects. First, it is poised to
21 become a major contributor to greenhouse gas emissions. Although per capita emissions in the region
22 are currently very low, with total CO₂ production at only about 5 percent of global emissions, they are
23 increasing at a rate of about 7 percent per year—twice the average rate. Second, the impacts of
24 climate change could be significant in the region, especially in light of its extensive low-lying areas.
25 Small-scale renewable energy supplies may be the most cost-effective solution to providing reliable
26 electricity in rural areas not connected to the grid and in some urban areas, which could also have a
27 concomitant impact on indoor air pollution by use of cleaner fuels. In the medium term, opportunities
28 exist for building consensus on reform in the power sector that would promote energy efficiency and
29 conservation and the application of renewable energy for rural and urban communities and industrial
30 use.
- 31 ■ The custodians of South Asia's biodiversity are largely the rural poor, who often depend directly on
32 these resources for their livelihood and sustenance. To make conservation effective, efforts will focus
33 on finding effective mechanisms to channel available global resources—including GEF—to local
34 communities in order to provide adequate incentives to encourage change in their patterns of resource
35 use, and on broadening the scope of the GEF portfolio to promote biodiversity conservation over
36 whole landscapes.

37 To enhance the quality of global and regional commons in South Asia, areas of focus will include:

- 38 ■ Enhanced use of international financial assistance. The integration of GEF into the Bank portfolio
39 includes co-financing arrangements, such as in the Bangladesh Fisheries IV Project and Pakistan
40 Protected Area Management Project. Serious efforts are under way to better understand the tradeoffs
41 and synergies between local and global environmental outcomes, and to enhance the effective use of
42 GEF resources to support mainstream Bank environmental activities.
- 43 ■ The ongoing Montreal Protocol program in South Asia has continued to expand. In India, with the
44 maturing of the portfolio of sub-projects, implementation picked up during the year; some 580 metric
45 tons of ozone-depleting substances were phased out.

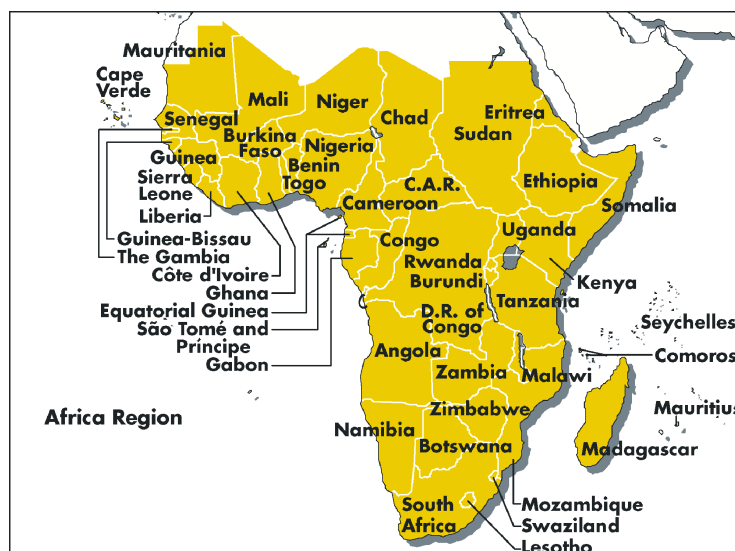
1 Implementation Arrangements

2 The present Bank Environment Strategy for South Asia applies to the work being done by sector units
3 throughout the Region, as well as to that of the regional environment unit itself. More specific
4 arrangements to effectively implement the strategy include:

- 5 ■ *Selectivity* in terms of investment operations, by (a) relying less on stand-alone environmental
6 management projects implemented by central government agencies, and more on mainstreaming the
7 environment into sector operations; (b) using participatory/community-driven development
8 approaches (particularly in watershed management, irrigation and drainage, and area based poverty
9 reduction initiatives), and private sector participation (particularly in urban water supply, independent
10 power production, and transport); and (c) using GEF, when appropriate, to support the sustainable
11 management of natural resources on which vulnerable groups depend (protected area management,
12 medicinal plants, and solar thermal power)
- 13 ■ *Enhancing project quality* by implementing the Bank's safeguard policies is a key pillar of Strategy
14 implementation. To this end, we have already initiated the following activities: (a) establishment of
15 an independent safeguard review and compliance monitoring team; (b) systematic upstream review
16 and input into project design beginning with project concept stage; (c) project risk management and
17 compliance monitoring system, linked to the Bank's project document system; (d) thematic joint
18 social and environment reviews focusing on specific sectors (such as water resources, transport, and
19 health), (e) periodic skills enhancement for all regional staff; (f) enhancing local ownership and
20 consensus building; and (g) strengthening our clients' capacity through policy dialogue and training
- 21 ■ *Intensifying the use of sectoral-regional environmental and social assessments*, by building on the
22 experience of the last three years in the water, roads, and power sectors, in order to enhance the
23 environmental content of sector policies and institutions
- 24 ■ *Strengthening analytical and advisory activities* including (a) filling critical gaps in knowledge and
25 information by undertaking new analytical work on indoor air pollution (in at least 2 countries), clean
26 fuels (in at least 2 countries), and NRM and rural livelihoods (in at least one country), in collaboration
27 with the energy and rural development sector units; (b) addressing institutional priorities by focusing
28 on helping build our clients capacity in critical areas such as policy, incentives, and monitoring and
29 enforcement; and (c) promoting techniques that foster cross-sectoral integration, such as improved
30 monitoring and evaluation of poverty impacts, and spatially based analysis of projects and policies
- 31 ■ *Strengthening our input into CASs and support to our clients' PRSP development processes*, by
32 building on the new merger of the Environment and Social Development Units in the region, and
33 increasing our participation into project, sector, and country teams. In particular, we will launch a
34 regional network on CDD, acquire staff skills in public health and support to poverty reduction
35 strategy formulation and implementation.

Sub-Saharan Africa

In Africa, perhaps more than in any other region, the World Bank's mission to fight poverty with lasting results is inescapably linked with environmental protection and improved management of renewable natural resources. African livelihoods and national economies rely mainly on agriculture and on extraction of mineral and biological resources, and they have few alternatives or options to compensate when these are lost. In both rural and urban settings, it is the poor who are most affected by the loss of natural resources and deterioration of environmental services, and are most at risk from natural disasters that can be aggravated by environmental degradation. Yet the natural resource base is steadily deteriorating, with some of the world's highest rates of soil degradation and loss of forests, rangelands, wetlands, and fish and wildlife populations.



Regional Context and Key Environmental Issues

Sub-Saharan Africa faces many challenges to sustainable development, including some of the highest population growth rates in the world; widespread poverty; an HIV-AIDS crisis that is decimating the most productive segments of society and creating vast numbers of orphans; a high degree of political fragmentation and instability; and historically low levels of investment in human resources and development. There are an estimated 35 million trans-boundary migrants, many of them refugees from conditions and conflicts triggered by scarcity and decline of natural resources, particularly land and water. Rapid and unplanned urbanization, notably in fragile coastal areas, is creating new environmentally related problems. Extreme climate variations already present a serious threat in much of the region in the form of frequent droughts and floods; global climate change could increase both the frequency and severity of these events. Natural systems in the region are losing their capacity to produce the goods and services on which livelihoods and development depend. Improving environmental management in Africa is not only about preserving nature: it is a matter of survival.

Natural resources such as soil, water, forests, and fish provide the basis for livelihoods and for economic growth at both local and national levels, while ecosystem services such as water supply and absorption of pollutants are essential for maintaining human health. Many of the same natural ecosystems that provide these critical human services also contain some of the world's richest and most unique biodiversity assets, as well as storing vast amounts of carbon within their biomass and soils. Negative environmental impacts of poorly managed economic growth—such as water pollution, soil erosion, burning of forests and rangelands, and over-exploitation of resources—directly undermine peoples' health and ability to earn a livelihood and threaten these global environmental assets.

Threats to sustainable livelihoods. Given the predominance of the rural poor and the increasingly precarious nature of rural livelihoods in much of the region, the decline of the rural natural resource base

1 is widely recognized as the highest priority environmental problem. Only about 20 percent of Africa's
2 total land area is arable, and much of it is under pressure. Soil degradation has affected 65 percent of
3 Africa's cropland, and over 20 million hectares of forest has been lost since 1980. Land degradation and
4 desertification, the scarcity and deterioration of surface and groundwater, and the decline of economically
5 important biological resources such as fuelwood and fish are widely recognized problems.

6 Less appreciated is the impact of the loss of productive natural ecosystems. Forests, wetlands, and
7 rangelands are all being converted or degraded at a rapid rate across much of Africa. This has major
8 consequences for the poor, who lose access to essential goods and services, often without sharing
9 substantially in the benefits of the activities causing these losses. At a national level, direct and immediate
10 impacts include flooding; siltation of dams; a deepening fuelwood shortage; and the loss of indigenous
11 natural products, such as medicinal plants, foods, and building materials.

12 *Threats to health.* Africans suffer a higher total burden of disease than their counterparts in other regions,
13 with about 25 percent of the total arising from malaria diarrheal diseases, and respiratory infections.
14 Environment, health, and poverty overlap extensively in Africa because many of the most widespread and
15 debilitating diseases, particularly those that affect the poor disproportionately, stem from environmental
16 conditions or changes. Water and air pollution from domestic and industrial sources affects hundreds of
17 millions of people in the region, particularly along coastlines, in the largest cities, and in mining areas.
18 While African industries tend to be smaller than in other parts of the world, they are often particularly
19 poorly regulated, and their additive and cumulative impacts can be significant. Waste disposal
20 problems—among these, the lack of suitable disposal facilities for bio-medical waste, including
21 disposable syringes and other items from efforts to stem the HIV-AIDS crisis—are widespread and pose a
22 growing hazard. The loss of medicinal species and indigenous knowledge is of particular significance in
23 Africa because in many countries a large proportion of the population continues to rely on traditional
24 medicine.

25 *Threats to security.* Much of Africa is vulnerable to recurring droughts and floods. Between 1965 and
26 1999, 330 droughts caused an estimated 880,000 deaths. Droughts and floods reflect the natural
27 variability of rainfall in the region's extensive arid and semi-arid lands, but their intensity and impact is
28 often aggravated by environmental degradation such as deforestation of hillsides and erosion or
29 compaction of topsoil. Again, the impacts are greatest on the poor, who typically reside on the most
30 susceptible marginal lands, are dependent on annual production from rainfed agriculture, and have few
31 economic resources or safety nets to cope with catastrophic events. The frequency and severity of these
32 events are expected to increase as a result of global climate change. Countries with extensive coastlines
33 and small island nations such as Cape Verde, the Comoros, and Sao Tomé are particularly vulnerable to
34 the effects of climate change.

35 *Threats to the global environment.* In addition to being an essential resource for African peoples and
36 economies, the region's vast and unique biodiversity endowment is an invaluable world heritage. This
37 includes the remaining natural habitats—such as the Congo basin forest, the world's second largest
38 continuous tropical rainforest—as well as wild relatives and “landraces” of important crops and livestock.
39 The direct cause of most biodiversity loss in Africa is the conversion of natural habitats and water bodies
40 to agriculture and other uses, followed by commercial logging and hunting. The underlying cause is that
41 destruction of biodiversity often yields immediate individual benefits, whereas the benefits of
42 conservation are generally long-term and diffuse.

43 Africa is not a large-scale user of fossil fuels, but could suffer significant damage from the predicted
44 effects of climate change. In terms of emissions, Africa's forests and rangelands represent an enormous
45 reservoir of carbon in their biomass and soil; if released through burning or other destructive practices,
46 this could contribute substantially to the concentration of greenhouse gases. In terms of impacts, Africa

1 may be the region most vulnerable to climate change. Increased variability of rainfall and the associated
2 droughts and floods, along with increases in average temperatures, may make some currently important
3 areas uninhabitable or uncultivable and further aggravate existing hydropower shortages. There is
4 already evidence that vector-borne diseases such as malaria are spreading into new areas as a result of
5 climate shifts. Climate change may also increase the number of “environmental refugees”—people forced
6 to migrate because of environmental degradation in their home areas—thus aggravating political conflicts
7 and further stressing weak government budgets.

8 *Development trends and challenges.* Sub-Saharan Africa is a region with great diversity in its resource
9 endowments, which makes generalizations for the region as a whole difficult. Nevertheless, there are a
10 number of common development trends that present challenges and opportunities across the region. These
11 trends include decentralization; democratization; a growing demand for transparency and accountability
12 in the management of public assets; and increasing private sector investment and globalization.
13 Depending on how they are managed, these trends all have the potential for either positive or negative
14 impacts on the region’s people and environment. A growing interest and commitment to sub-regional
15 integration can provide opportunities for coordination and cooperation in the management of ecosystems
16 that span political boundaries. Institutional structures and human resource capacity will determine how
17 these trends will affect environment and poverty. At present, however, Africa’s institutions are poorly
18 equipped to deal with these challenges, and must be reoriented and strengthened.

19 **The Bank’s Experience and Some Emerging Lessons**

20 The Bank’s environmental program over the past few decades has included both direct investment in
21 environmental improvements and indirect interventions aimed at mainstreaming environment into
22 development and creating capacity and an enabling environment for better environmental management.
23 The experience from these efforts has been mixed, with some promising models and pilot initiatives and
24 important lessons for a forward-looking strategy.

25 Environmental Assessment (EA) and the related safeguard policies have provided an important entry
26 point for introducing environmental considerations into sectoral operations and for triggering
27 environmental investments. EA as currently used, however, has significant limitations. It is generally
28 project specific; introduced too late in the project cycle to affect project design; and followed-up
29 inadequately during implementation. Existing EA procedures are also poorly suited to the Bank’s non-
30 lending programs, which represent a growing proportion of Bank interventions. Most significantly, client
31 governments, agencies, and citizens often regard EA and safeguard policies as externally imposed rules
32 and obstacles. The Bank is responding to these lessons by putting substantial efforts into building in-
33 country understanding, commitment, and capacity to EA principles and procedures. A particularly
34 important challenge is to adapt EA to the Community-Driven Development (CDD) approach, which is a
35 priority for the Bank in Africa (see box 2.1 in chapter 2).

36 The GEF has also been important in introducing environmental elements into Bank-financed programs
37 and operations. While some free-standing GEF projects remain, increasingly GEF, IDA, and other donor
38 resources are blended to support programs that generate both national-local and global benefits. The most
39 common are community-based natural resource management projects, which also promote biodiversity
40 conservation. Increased emphasis is being placed on incorporating sustainable land management and
41 ecosystem-level management, from both a biodiversity and a carbon-storage perspective, which can offer
42 substantial win-win opportunities for the region.

43 Mainstreaming environment into the Bank’s overall operations remains an important challenge. Reviews
44 of efforts to integrate environment into countries’ economic development programs have provided
45 important lessons, including the need for longer timeframes to support institutional development and
46 environmental action; the need for institutional capacity building to take into account the changing roles

of government, civil society, and the private sector; the need to continue the EA process into the implementation phase by strengthening implementers' capacity to carry out environmental management plans and by monitoring impacts; the risk of isolating the environmental agenda from overall development priorities by "sectoralizing" it through isolated environmental planning processes, programs, and funds; the risk of creating a "supply-driven" mentality by imposing external conditionalities rather than building local constituencies; and the risk of creating over-ambitious and ultimately ineffective institutions by providing temporary external funding at levels that cannot be sustained. These lessons have been incorporated into this strategy.

Strategic Priorities, Approaches, and Actions

In the Africa Region, actions to improve the quality of life, the quality of growth, and the quality of the global commons are inextricably linked by the common challenge of achieving sustainable management of ecosystems and natural resources. While short term, direct action is urgently needed, it is equally important to establish an enabling environment and build the capacity to continue environmental management over the long term.

Quality of life

The priorities for action in the Africa Region Environment Strategy (ARES) are to:

- *Enhance livelihoods* through sustainable natural resource management (NRM), including (a) community-based NRM, including policy reform, empowerment, and capacity building (see box D.1 in annex D); (b) maintenance of productive natural ecosystems and wild resources; (c) environmentally sustainable agricultural intensification; (d) land, soil, and desertification management; (e) water resources management and protection; (f) sustainable energy, including woodfuels management; (g) integrated coastal zone management; (h) fisheries management and aquaculture; and (i) rangeland management and support for pastoral communities
- *Protect peoples' health* from environmental burdens, including (a) reducing pollution, including water pollution and indoor and outdoor air pollution; (b) improving access to potable water; (c) reducing vector-borne and water-related diseases; (d) improving hazardous waste disposal and management; and (e) maintaining traditional medicine species and knowledge
- *Reduce people's vulnerability* to environmental risks and natural disasters, including (a) watershed protection; (b) land use planning; (c) improved infrastructure design and construction; (d) climate forecasting and early warning systems; and (e) safety nets with emphasis on facilitating restoration of livelihoods.

Quality of growth

To improve the quality of growth, the ARES will promote policy, regulatory, and institutional frameworks for environmentally sustainable economic growth. Priorities include (a) building environmental management capacity at national, district, and local levels; (b) strengthening in-country environmental constituencies; (c) increasing public awareness and education; (d) strengthening incentives for environmentally friendly private sector investment; (e) supporting environmentally oriented tourism; (f) building regional information networks; and (g) developing appropriate financial instruments and sustainable funding mechanisms.

Quality of the global commons

To address trans-boundary, regional, and global environmental problems, the ARES will work on the following themes: (a) trans-frontier biodiversity conservation areas and initiatives; (b) trans-boundary inland water resource management; (c) trans-boundary coastal zone management; (d) climate change prediction and adaptation; and (e) capturing global markets for environmental services.

Sub-regional priorities

While the above priorities provide an overall picture, Africa is too diverse ecologically and socially to be treated as a single unit for purposes of prioritizing environmental action. The continent is typically divided into six sub-regions that are characterized by similar environmental conditions and challenges, and therefore similar priorities (see table A.1):

Table A.1
Sub-Saharan Africa: Priority environmental issues

<i>Sub-region</i>	<i>Priority environmental issues</i>
Sudano-Sahelian Belt	"Drought preparedness"; integrated water resource management; halting/reversing land degradation (desertification); sustainable fuelwood supply; migratory pest outbreaks
Humid West Africa	Integrated coastal zone management (including sustainable management of fisheries resources, urban and industrial environmental waste management and sanitation, tourism development impacts, etc.); land tenure and land management; rain forest conservation; protecting the high watersheds of major river systems
Congo Basin	Rain forest conservation (through a combination of core protected areas and improved management of forest production areas); coastal zone management particularly in areas with intense urban development
Eastern Africa	Reversing land degradation due to inappropriate agricultural practices, particularly in arid/semi-arid areas; Integrated water resource management in areas of growing local scarcity (including adaptation to climate change); linking biodiversity conservation with environmentally sustainable and socially equitable tourism; urban and industrial environmental management in coastal areas
Southern Africa	Water resource conservation and management; drought preparedness and adjustment to climate variability; balancing agricultural development and nature-based tourism development; urban environmental management in highly urbanized and rapidly urbanizing areas; maintaining environmental resources while meeting growing energy requirements
Indian Ocean Islands	Reversing land degradation; biodiversity conservation (high degrees of endemism; Pollution control and industrial environmental management, addressing both public health and tourism development needs; Adaptation to climate change (anticipated rises in ocean levels)

These priorities emphasize issues that affect the livelihoods, health, and security of the poor, opportunities for economic development based on environmental resources, and unique global assets under threat. There is considerable variation even within these sub-regions, however, so specific priorities must be identified at the national and even sub-national level. There are also cross-cutting issues, such as land tenure and property rights, that are significant in all sub-regions and affect most of these issues.

Sectoral priorities

While environment is intrinsically cross-sectoral, most direct environmental action will have to be achieved through sectoral programs. Sectors targeted for their strong significance to environmental management include agriculture and rural development, natural resource management, energy, urban development, water resource management, transport, health, and private sector development.

1 **Implementing the Strategy**

2 *Mainstreaming environment.* Rather than pursuing a free-standing environmental agenda, the ARES seeks
3 to integrate environment into the strategies and programs that are considered priorities by African
4 stakeholders, and the Bank as a whole. Implementation of the ARES will therefore focus on building
5 specific environmentally related outcomes, outputs, actions, and targets into country strategies,
6 development plans and sectoral programs, on a country-by-country and sector-by-sector basis. Given the
7 large number of countries in the Region, focal countries will be selected based on criteria such as: strong
8 and clear linkage between environmental problems and opportunities and the sources of poverty and
9 prospects for alleviating it; demonstrated interest on the part of clients and Country Teams, and the scale
10 of the Bank's involvement in the country. Results will be measured by the extent to which these vehicles
11 incorporate and achieve goals relating to environmental sustainability and social equity. One immediate
12 challenge is to develop suitable indicators to measure whether environment is being incorporated, both in
13 specific lending programs and in country development and portfolio assessments.

14 Key instruments at the strategic level will be the CASs, PRSPs, and CDF which provide an umbrella for
15 donor coordination (see box 2.2 in chapter 2 and box B.3 in annex B). Criteria for selecting countries on
16 which to focus include demonstrated client and Country Team interest, the significance of environmental
17 problems, opportunities for poverty alleviation, and the level of World Bank involvement. Priority
18 countries for attention at this level are: Benin, Burkina Faso, Cameroon, Chad, Central African Republic,
19 Ethiopia, Ghana, Kenya, Nigeria, Madagascar, Malawi, Mozambique, Tanzania, Uganda and Zambia.

20 At the operational level, project-level interventions will continue, but will be complemented by a new
21 emphasis on building environmental objectives into programmatic lending (PRSCs, Structural and
22 Sectoral Adjustment, and Public Expenditure and Reform Loans and Credits), which represents a growing
23 part of the Africa Region portfolio. For example, in Benin environment has already been identified as one
24 of five focal areas for support under the Public Expenditure Reform and Adjustment Credit. Similarly,
25 beyond EA and application of safeguard policies at the project level, Strategic Environmental Assessment
26 (SEA) will increasingly be emphasized as a tool to address environmental impacts and opportunities more
27 proactively and at a larger scale. The priority will be to identify area-based and sectoral development
28 programs at a relatively early stage, in order to help guide development onto environmentally and socially
29 sustainable paths. Emphasis will be on important ecosystems under threat from rapid development (for
30 example, Mozambique's Maputo Province and South Africa's Eastern Cape Province), and sectoral
31 investment programs in key areas such as transport, irrigation, water supply, energy, infrastructure,
32 mining, and forestry. For example, a SEA is being developed for the transport sector in Benin, and
33 discussions are underway on prospective SEAs relating to mining in Madagascar, health and environment
34 in South Africa, and rural water supply in Tanzania.

35 *Building capacity and an enabling environment.* To be sustained in the long term, maintaining a healthy
36 environment must be the goal of all actors, not only environmental agencies and advocates (see box A.8).
37 The essential elements include: a broad consensus on, and support for, environmental and sustainable
38 development objectives; strong policy and legal frameworks; effective institutions; information systems
39 to track environmental status and impacts; and informed, committed, and capable people at all levels. The
40 Bank will continue to emphasize capacity development and strengthening of environmental institutions.
41 However, building on the mixed experience of previous Environmental Support Programs, we will
42 emphasize defining and supporting the appropriate roles of both public and private sector institutions,
43 establishing appropriate policies and incentive structures, and decentralized and community-level
44 planning and implementation. Other strategic principles include adopting "people-focused ecosystem
45 management" as the organizing framework for planning and action, and finding ways to meet the
46 institutional challenges presented by the need for cross-sectoral and cross-boundary collaboration.
47 Developing useful and practical performance indicators for capacity and institutional building is one of

the main challenges for implementing the ARES. Existing guidelines and tools for monitoring policy reform, institutional structures, and returns on investment need to be adapted to encompass the special characteristics of environmental management, including its cross-sectoral nature and relatively long time horizon.

Integrating local and global environment. The GEF will continue to represent an important source of support for environmental action, using it strategically to maximize local/global linkages. Linking the reversal of land degradation trends with biodiversity conservation and carbon sequestration is a priority in Africa. In keeping with both the ARES strategic principles and GEF operational guidelines, the emphasis will be on an Integrated Ecosystem Management (IEM) approach. The Integrated Land-Water Management Action Program for Africa (ILWMAF),

currently under development, will serve as an important vehicle for coordinating resources from World Bank, GEF, and other multilateral and bilateral donors. Examples of specific projects and programs planned include the Nigeria Micro-watershed and Environmental Management Project (see box 3.1 in chapter 3), Phase 2 of the Mozambique Trans-frontier Conservation Areas Project, the CAPE Program in South Africa, the Namibia National Conservancy Program, and the Burkina Faso National Natural Ecosystem Management Program. Other countries that have been identified as priorities for developing globally supported IEM projects include Niger, Mali, Mauritania, Senegal and Chad.

Partnerships. Partnerships are vital to implementation of the ARES, as its challenges transcend the Bank's own capacity. The Bank is currently engaged in a wide range of important partnerships relating to environmental priorities in Africa, with a great diversity of UN Agencies, bilateral donors, regional development banks and NGOs, as well as African governments. In addition to African elements of many Bankwide initiatives (such as the WB/WWF Forest Alliance and the Critical Ecosystems Partnership Fund), there are several important Africa-specific arrangements. The relevance and diversity of these partnerships is illustrated in box A.9 on page A-41. Partnerships such as these provide vital, complementary financial and technical resources to help achieve the objectives of the ARES. However, they carry administrative and other costs that must be catered for adequately under the Regional and/or country budgets if they are to be effective.

Box A.8 **NEAPs and ESPs in Africa**

- National Environmental Action Plans (NEAPs) have proven useful in raising awareness about environmental issues, particularly in those countries where the preparation process was highly participatory. In general, they have been less useful in identifying priorities for action and generating the necessary resources and political commitment, particularly when environmental objectives compete or conflict with short-term economic or political objectives.
- Environmental Support Programs (ESPs), intended to support implementation of the actions identified in the NEAPs, have had mixed success, often suffering from over-ambition and overly complex designs as they sought to address the multisectoral nature of environmental management through a wide range of activities implemented by multiple actors. They are also typically supported by numerous donors, which is beneficial in mobilizing funds but can create problems of inadequate donor coordination. ESPs in Africa have had their greatest success in developing core environmental policy and regulatory systems, including EA legislation and procedures, usually centered in an Environment Department or semi-autonomous agency. They have been less successful in mainstreaming environmental objectives. Challenges for the future include (a) greater mainstreaming, going beyond the dedicated environmental agencies to build environment into the mandates, programs, and human resources of sectoral and other national institutions; (b) decentralization of systems and capacity for local-level environmental management; and (c) enhancing the sustainability of these environmental management institutions and structures, most of which remain heavily dependent on external donors.

Box A.9**Partnerships for sustainable development in Africa**

- Integrated Land and Water Management Action Program—region-wide, WB with UNDP, UNEP, GEF, African Development Bank, FAO, CCD Secretariat, IDB
- Soil Fertility Initiative for Sub-Saharan Africa—projects currently in 8 countries, WB with FAO, IFAD, CGIAR
- Nile Basin Initiative—all Nile Basin countries, WB, SIDA, GTZ, CIDA, and financial contributions from GEF, FAO and nine bilateral donors
- Regional Environmental Information Management Program—a network of public, private and NGO participants in Central Africa, WB with EU, IFAD, Belgium, Canada, and France, and hosted by Gabon
- Clean Air Initiative in Sub-Saharan African Cities—targeting 8 cities across the region, WB with EU, African Development Bank, USEPA, Fonds Français pour l'Environnement and an International Petroleum Industry Association among others
- Regional Traditional Energy Sector Program—region-wide, co-financed by GEF and the Norwegian and Danish Trust Funds, with AfDB, WBI, MENA and IFC as strategic partners
- Program for Capacity Development and Linkages for EA in Africa—based at Environmental Protection Agency of Ghana; other current and prospective partners include EU, Netherlands, Norway, AfDB
- African Water Resources Management Initiative—region-wide, at country and river basin level, co-financed by DFID, Norway, Netherlands and Sweden, other partners include UNDP, UNEP, FAO, IUCN, GTZ, France, Japan, Switzerland, USAID, and the Development Bank of Southern Africa.

ANNEX B

Poverty and Environment

Environmental conditions often have a major influence on the livelihoods, health, and security of poor people. Improving environmental conditions can be an effective way to increase their income, improve their health, empower them, and reduce their vulnerability. Natural resources are crucial to the routine functioning of rural households and also provide a safety net in times of unexpected shocks. The varied links between poverty and environment, which have been extensively documented, provide a compelling rationale for a poverty-focused Environment Strategy and for mainstreaming environment into countries' strategies for reducing poverty (see bibliography).

A Framework for Understanding Poverty-Environment Links

Economists have traditionally used a household's income or consumption as a proxy for well-being. A broader definition of poverty, however, goes beyond that and includes inequality, health, education, and vulnerability, which in turn can influence different elements of well-being: security, empowerment, and opportunity (see box B.1). We use this broader definition.

We also define environment broadly to include both a natural resource base that provides sources (such as materials, energy, and water), and performs sink functions (such as absorbing pollution). These could be either public or semi-public goods, such as open-access watersheds or common-property grazing land; or private goods, such as air inside a house or workplace, or household drinking water. Here, the term "environmental degradation" covers pollution and depletion (damage to a natural system that affects present or future human needs negatively).

A useful, though simplified, way of looking at links between poverty and environment is suggested in figure B.1. This figure shows how different environmental factors can influence different dimensions of poverty and well-being in a given set of circumstances. These linkages are context-specific and play out differently depending upon numerous factors including the nature of local communities and civic organizations, macro- and micro-level institutions such as property rights, gender relations and the role of the State. The literature gives extensive empirical evidence that shows how links between poverty and the environment vary in different contexts.

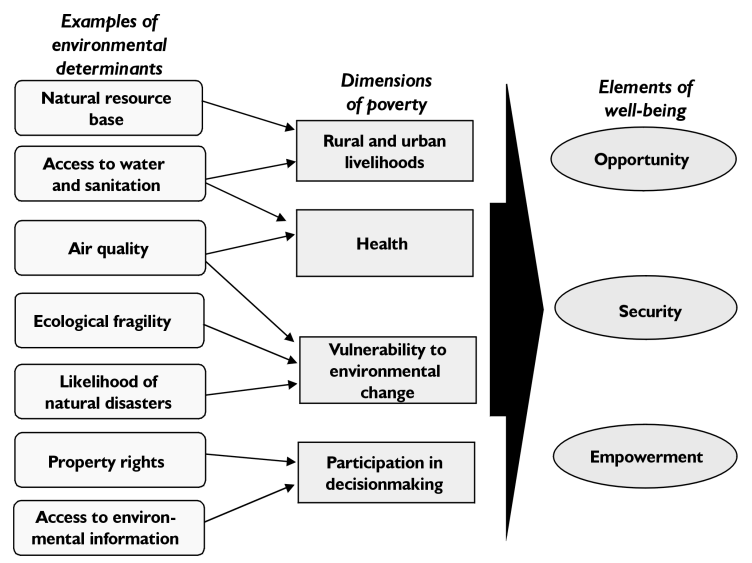
This analysis of environment and poverty is consistent with the "sustainable livelihoods"

Box B.1. Poverty is multidimensional

"Poverty is pronounced deprivation in well-being. . . To be poor is to be hungry, to lack shelter and clothing, to be sick and not cared for, to be illiterate and not schooled. But for poor people, living in poverty is more than this. Poor people are particularly vulnerable to adverse events outside their control. They are often treated badly by the institutions of state and society and excluded from voice and power in those institutions."

Source: World Bank 2000a.

Figure B.1.
Environmental links to the dimensions of poverty



approach adopted by a number of institutions – particularly by the U.K. Department for International Development (DFID). The “sustainable livelihoods” approach focuses on the capabilities, assets, and activities required for a means of living without undermining the natural resource base. It analyzes the strategies people use to make a living while sustaining the local environment.

The following discussion describes how environmental factors influence different elements of well-being, namely natural resource-based livelihoods and opportunity; environmental health and security; and empowerment.

Environment and opportunity

The literature on the relationship between poverty and the environment is extensive, particularly regarding rural livelihoods. Hypotheses abound, such as the theory that there is a vicious cycle of poverty, population growth, and environmental degradation. Some cases support that theory, others show quite the opposite. We have little empirical evidence that allows us to conclude with certainty that in any particular circumstance, causality will go in one direction rather than another. Several local factors—such as macroeconomic policies, the effectiveness of local institutions and property regimes, and gender relations—have decisive influence on the extent to which the poor have access to, control over, and potential to get income from natural resources.

Whilst the causality may vary in different cases, research shows that links between the natural environment and the livelihoods of the poor are often very strong. Poor rural households often get a significant share of their incomes from natural resources. One study of 29 villages in the Shindi Ward of southern Zimbabwe shows that environmental resources comprise roughly 35 percent of average total household income, and the poorer the household, the greater the share of income from environmental resources (Cavendish 1999). However, even though the poor are more resource dependent, they generally use less of these resources than the better-off. The poorest households use 3 to 4 times less in quantity terms than the richest (Cavendish 1999).

Furthermore, poor rural women in developing countries tend to be disproportionately affected by the degradation of natural resources. This is because they tend to be primarily involved in the collection of fuel, fodder, and water. Depending upon the availability of biomass resources, collection of fuel and fodder may take up anywhere between two to nine hours. In Lombok, Indonesia, and in some areas of Kenya, women spend 7 hours each day on cooking and collecting dead wood or agricultural residues as fuel (Aristanti 1997). Often they have to walk longer distances and spend more time and energy to collect fuelwood as a result of deforestation. This reduces their time spent on income-generating activities, indirect income through crop production, household responsibilities and may also have a negative impact on health (see box B.2).

In urban areas, the links between environmental factors and poverty are strong, though different from those in rural areas. Here the poor suffer from tenure insecurity, ghettoization, overcrowding, inadequate

Box B.2

The impacts of fuelwood scarcity on women’s health

In Nepal, rural women and children spend long hours collecting biomass as fuel, which leaves them very little time to care for children. The children’s health suffers, and they have a high rate of chronic lung disease. Carrying the heavy loads of fuelwood also affects women’s health. Nepalese women suffer a high incidence of uterine prolapse, affecting their general health and causing complications with future pregnancies, that is probably due to carrying heavy wood loads soon after childbirth (Pandey 1997).

A 1996–97 study involving over 1000 women in ten locations across 12 districts in Uttaranchal, India, found that the proportion of miscarriages was 30 percent that is five times higher than the average rate reported in the National Family Health Survey of 1992–93. During pregnancy the women carry heavy loads of wood, manure, and grass, a factor contributing to the high rate of miscarriages. Seventeen percent of the women interviewed had some form of uterus descent (Dasgupta and Das 1998).

sanitation and water facilities, violence, and changes in the labor market.

The linkages between poverty and environment often involve difficult tradeoffs between long-term and short-term benefits; between local and global consequences of public actions; between the effects on men and women; and so on. Particular policies will influence the processes by which individuals make their choices about trading one set of issues off against another.

As annex C discusses, extensive research has shown that environmental problems can damage the health of people in developing countries. On average, 19 percent of illness and death in the developing world is associated with environmental factors—access to safe water and sanitation, vector-borne diseases, dirty air inside the home and in urban areas, and exposure to toxic substances—although in Sub-Saharan Africa, the proportion is as high as 27 percent.

The extent to which the poor suffer disproportionately from exposure to environmental hazards has been less extensively documented. Health outcomes are consistently worse for the poor than for the non-poor. A poor child in Brazil is six times more likely to die than one born into a wealthy household. Figure B.2 shows health outcomes for Peru. The pattern—if not the magnitude of the difference—is broadly the same worldwide.

Exposure to hazards in the environment seems to be a major contributor to this inequality in health outcomes. Respiratory infections and diarrheal diseases are the two biggest causes of death amongst the poorest fifth of the world's population, as ranked by national gross domestic product per capita. Between them, they caused 24 percent of deaths in 1990. Yet combined, they killed 4 percent of the richest fifth. Environmental factors are associated with 60 and 90 percent respectively of illness and death from these two factors. Malaria, 90 percent of which is related to environmental exposure, similarly hits the poor disproportionately.

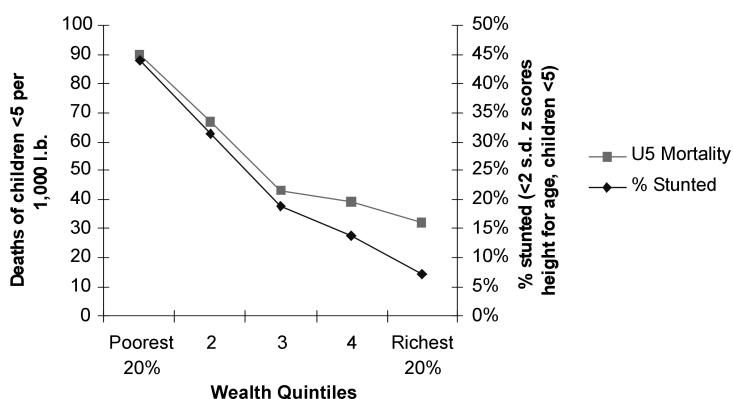
Environment and security

In addition to the link between environment and security through health, poor people are also disproportionately vulnerable to natural disasters. This higher risk is caused by a variety of factors, including the tendency that poor people lack access to secure housing, live on marginal land more prone to the effects of drought, flood, or landslides; and that they lack the ability to smooth consumption in times of crisis.

The vulnerability of the poor to natural disasters is compounded by the generally weak capacity of government agencies to predict and respond to disasters, and by the lack of social safety nets that would protect their incomes and consumption during and after disasters. Analysis of the recent economic crisis in the Philippines, for example, found that the extreme weather associated with El Niño was responsible for a greater share of the overall increase in poverty (47 to 57 percent of the total impact on the incidence, depth and severity of poverty) than the labor market shock which by itself accounts for 10 to 17 percent of the

Figure B.2

Peru 1996 health outcomes



Source: World Bank analysis of Demographic and Health Survey data.

total poverty impact. The labor market shock was progressive (it reduced inequality), but the El Niño shock was regressive (it increased inequality). Moreover, the study found that household and community characteristics influenced the impact of the shocks. The ability of the poor, for instance, to protect their consumption was more limited than that of the non-poor (Datt and Hoogeveen 2000).

When ecosystems collapse, the social systems build to manage and use them come under threat. This can lead to conflicts particularly over environmental resources such as water and fisheries. When such resources are shared among several countries, the threats to security may escalate into political conflicts.

Environment and empowerment

Environmental activities can contribute to the empowerment of poor people in at least two ways. First, poor people can use knowledge about environmental resources to organize themselves. Second, the ability of local communities to participate in decisionmaking about environmental resources can help them maintain their livelihoods, gain equitable access to resources, and use these resources in a sustainable way.

For instance, in villages in the arid region of Vidarbha, Maharashtra, India, women and girls make several trips per day, often walking long distances to fetch water. The village recently formed women's organizations (*mahila mandals*), which allowed them to share knowledge about the time they spent fetching water, and about possible links between the quality of water and their health. Through these organizations they realized that the problem of access to safe water was not limited to themselves and their neighbors, but was pervasive in all ten surrounding villages. This created strong community awareness. The women formed alliances with the female members of the local village council (*panchayat*), held protest marches, and performed street plays. One result of their efforts was to pressure the panchayat to repair malfunctioning tubewells and revive a running water supply scheme. As a result of the women's efforts, within six months, in 8 villages, 17 community wells were deepened, and pipelines were laid for drinking water in 2 villages. The women also initiated programs for social forestry and rain water harvesting to protect the environment. For the first time in the recent history of these villages, there was sufficient safe drinking water in seven villages during the summer months of 1997 (Devasia 1998).

Communities are marked by social differences and relations of power along the lines of gender, race, caste, and class. Any attempt to empower local communities and target public expenditures should take into consideration these relations of inequality.

How have Bank Interventions Treated Poverty and Environment Links?

As part of the background work for this environment strategy, the Bank assessed the extent to which our investment projects benefit the poor. The review analyzed 61 environmental projects in four regions (see Bucknall and others, 2000). Although poverty reduction was not an explicit objective of the projects—they tackled the highest priority *environmental* problems—the review aimed to understand whether particular types of environmental investment were better at reaching the poor, or whether any region treated the issues differently.

It found little systematic difference between regions or between types of environmental projects, though some water and sanitation projects were slightly more likely to target poor beneficiaries. The extent to which they benefited the poor—or could demonstrate such benefits—depended more on the design of the individual project than on the country or subsector it was in.

In general, projects benefited the poor when they targeted private benefits to low-income groups, or when they located investments with public benefits in areas with higher-than-average poverty rates. Very few

1 projects made any attempt to quantify their effects on the poor. Environmental benefits were seen as
2 good outcomes in their own right, or perhaps as part of a framework to make economic growth
3 sustainable. An increased focus on poverty will require the Bank to make a greater effort to document and
4 monitor the distributional impacts of their investments.

5 **Integrating Environment into Poverty Reduction Strategies**

6 As of September 1999, all low-income countries use participatory processes to prepare their own Poverty
7 Reduction Strategy Papers (PRSPs), in order to obtain debt relief or concessional lending from the
8 International Development Association (IDA) or the Poverty Reduction and Growth Facility (PRGF).
9 Typically, the preparation of PRSPs involves three stages:

- 10
- 11 1. Developing a comprehensive understanding of poverty and its determinants
- 12 2. Choosing the mix of public actions that have the highest impact on poverty reduction
- 13 3. Selecting and tracking outcome indicators.

14 Because of the links between environment and poverty, and because a poverty reduction strategy must be
15 environmentally sustainable over the long term, the Bank and the IMF have encouraged governments to
16 consider environmental factors in their PRSPs (see box B.3). The Bank is helping build the analytic base

Box B.3

Environmental mainstreaming in PRSPs

Because environmental issues are closely linked with poverty reduction, a review of 25 interim and full PRSPs was undertaken to assess how environmental issues are reflected, capture good practice, and inspire teams working on forthcoming PRSPs to enhance the integration of environmental considerations and opportunities in future.

The main findings of the review are as follows:

- There is considerable variation across countries in the degree of mainstreaming indicating and approximate level of attention to environmental issues.
- The average score is relatively low indicating considerable room for improvement
- Full PRSPs rank relatively well compared to interim PRSPs indicating improvement in the process
- Several good practices do exist, especially in countries where linkages between environment and poverty have been systematically analyzed before.

Guinea is in the process of preparing a full fledged PRSP. The Interim Poverty Reduction Strategy Paper (IPRSP), which was presented to the Board last December, presents a map showing the level of poverty in the various prefectures of Guinea on the basis of a composite index reflecting 15 socioeconomic variables. The IPRSP does not provide a map showing the distribution of population and natural resource degradation.

The *Burkina Faso* PRSP notes that climatic conditions, low agricultural productivity related to degradation of soil and water resources, are major constraints to economic growth and contribute to massive poverty and severe food insecurity among the rural inhabitants. Income from farming and livestock raising is highly dependent on rainfall which varies considerably from year to year.

The *Honduras* IPRSP presents a detailed assessment and quantification of vulnerability due to hurricane Mitch. The PRSP notes that "Hurricane Mitch had a severe impact on living conditions in Honduras and this in turn affected poverty levels nationwide. It is estimated that the percentage of poor households rose from 63.1 [before the hurricane] in 1998 to 65.9 in 1999 [after the hurricane]..."

The *Kenya* IPRSP notes the concern of property rights related to poverty and proposes "to implement a land law system to create an efficient and equitable system of land ownership." In the context of water, the IPRSP notes "the incidence of violation of water rights, conflicts, and pollution have dramatically increased. The government proposes to develop a community-based catchment management strategy to ensure adequate quality and quantity of water to the poor."

Source: Bojö and Reddy 2001.

1 to quantify the links and prioritize potential environmental interventions compared with those in other
2 sectors. Guidelines were prepared for the PRSP Sourcebook. Because poverty-environment links are
3 location-specific, the Bank has taken a three-pronged approach to help integrate environmental issues into
4 the PRSP process in individual countries:

5
6 *Analytical work.* Analytical work in pilot studies will quantify the relationships between natural resource
7 management and the livelihoods of the poor; it will also document the extent to which poor environmental
8 conditions can damage the health of poor people.

9
10 *Training.* In a small number of key countries, intensive training of counterparts in important sectors
11 (WSS, agriculture, health, environment, and natural resource management) in collaboration with the
12 World Bank Institute (WBI) and external partners (for example, DFID) will equip decisionmakers with
13 knowledge and analytic skills to design more effective interventions as part of PRSPs.

14
15 *Review.* All PRSPs and related documents are systematically reviewed to assess issues of environmental
16 sustainability and identify best practices in integrating environmental considerations into PRSPs.
17

ANNEX C

Environment and Health

It has long been recognized that the environment in which people live—from the household to the global level—significantly affects their health. Until recently, however, the actual magnitude of health impacts from exposure to various environmental risks was not known. Nor was it possible to compare the cost-effectiveness of *preventive* measures to reduce such exposure with health-sector activities that cure the resulting illnesses.

Quantitative estimates of the impact of environmental risks on health have emerged recently in the course of research on the global burden of disease, which uses a standardized measure of health outcomes—Disability-Adjusted Life Years, or DALYs—across various causes of illness and death. DALYs combine life-years lost due to premature death and fractions of years of healthy life lost as a result of illness or disability. The use of DALYs as a measure of the burden of disease has provided a consistent basis for systematic comparisons of alternative interventions. It enables health specialists to identify development programs that have the potential to generate significant improvements in the health status of poor households in the developing world (see Murray and Lopez, 1996).

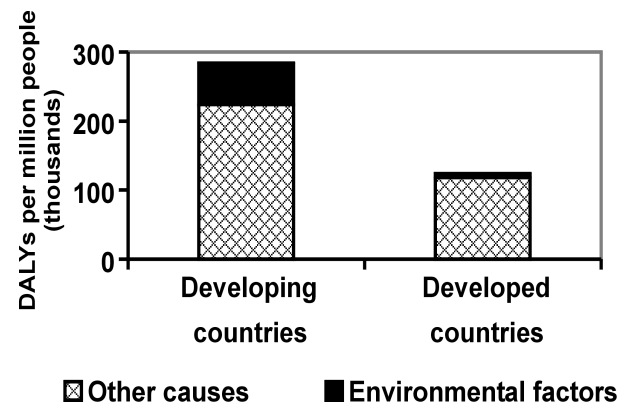
Recent estimates suggest that premature death and illness due to major environmental health risks accounts for one-fifth of the total burden of disease in the developing world—comparable to malnutrition and larger than all other preventable risk factors and groups of disease causes. The total burden of disease per million people in rich countries is about half that in developing countries, but the disease burden from environmental risks is smaller by a factor of 10 (see figure C.1).

Environmental Health and Poverty

Environmental health risks fall into two broad categories:

1. *Traditional hazards, related to poverty and lack of development*, such as lack of safe water, inadequate sanitation and waste disposal, indoor air pollution, and vector-borne diseases (for example, malaria). Worldwide, an estimated 3 million people in developing countries die every year from *water-related diseases*, caused by exposure to microbiological pathogens resulting from inadequate sanitation and waste disposal; water supply inadequate to permit personal hygiene; exposure to unsafe drinking water; and bacteriological contamination through a variety of other water uses, such as cooking and bathing. The majority of fatalities are to are children under 5 years of age. Water-related diseases impose an especially large health burden in the Africa, Asia, and Pacific regions. In India alone, nearly 1 million people die annually as a result of water-related diseases. More than half of the world's households use *unprocessed solid fuels*, particularly *biomass* (crop residues, wood, and dung) for cooking and heating in inefficient stoves without proper ventilation; the effect of such fuels is to expose people—mainly poor women and children in rural areas and urban

Figure C.1
Burden of disease and environmental risks



Source: Lvovsky and others 1999.

slums—to high levels of *indoor air pollution*. It is estimated that nearly 2 million children and women die every year in developing countries as a result of exposure to indoor air pollution. About half of these deaths occur in India and China. *Vector-borne diseases* are affected by a range of environmental conditions and factors, including inadequate drainage from drinking water and from irrigation, and polluted and standing water; clogged storm drains; floods; and open sewers and certain types of sanitation. In Africa alone, *malaria* is responsible for about 800,000 deaths annually.

2. *Modern hazards, caused by development that lacks environmental safeguards*, such as urban (outdoor) air pollution and exposure to agro-industrial chemicals and waste, including occupational exposure. Traditional environmental hazards affect developing countries most. Their impact exceeds that of modern health hazards by a ratio of more than 10 for Africa, 5 for Asian countries (except for China), and 2.5 for Latin America. Conversely, modern threats to human health prevail in rich countries and the European economies in transition. Inadequate water supply and sanitation pose the largest threat to human health in most of the Bank's client countries except for China and the transition economies of Europe, where air pollution causes the most damage. Indoor air pollution is highest in Asia and Africa. Malaria has taken a heavy toll on the population of Sub-Saharan Africa. Even though malaria is not nearly as significant in other regions, it ranks third globally among all environmental health threats (see table C.1).

Table C.1 The burden of disease from major environmental risks

<i>Environmental health group</i>	<i>Percentage of total DALYs in each country group</i>							
	<i>AFR</i>	<i>India</i>	<i>China</i>	<i>Asia and Pacific</i>	<i>LAC</i>	<i>FSE</i>	<i>LDCs</i>	<i>EME</i>
Water supply and sanitation	10	9	3.5	8	5.5	1.5	7	1.0
Malaria	9	0.5	0	1.5	0	0	3	0
Indoor air pollution	5.5	6	9.0	4	0.5	0	5	0
Urban air pollution	1	2	4.5	2	3	3	2	1
Agro-industrial waste	1	1	1.5	1.5	2	2	1	2.5
All causes	26.5	18.5	18.5	17	11	6.5	19	4.5

Note: Regions in table slightly differ from World Bank Regions (see a definition in World Bank (1992) and Murray and Lopez (1996)). Note that AFR is Sub-Saharan Africa. Asia and Pacific includes countries from East and South Asia, except for China, India and Pakistan. LAC is Latin America and Caribbean. FSE means "former socialist economies of Europe" and does not include Central Asia. LDCs (less developed countries) comprise all regions/countries in the first six columns. EME stands for established market economies.

Source: Lvovsky and others (1999) based on Murray and Lopez (1996), Smith (1998), and World Bank estimates.

Future Trends

Urbanization is a major factor in Africa, Asia, and Latin America, and it is changing the landscape of environmental health concerns and posing significant new challenges (see annex E). Rapid urbanization and the uncontrolled growth of urban slums create a double burden for the urban and semi-urban poor. They are increasingly exposed to transition risk. This includes traditional hazards, such as dirty cooking fuels, primitive stoves, crowding, and poor access to water and sanitation. In addition, there are risks associated with modern transport and industrial pollution. Further, in some parts of the world malaria is becoming an urban issue, in part due to infrastructure failures. Climate change is likely to worsen this situation, while globalization, and liberalization of trade may exacerbate the transmission of some diseases.

Improving Environmental Health

Better infrastructure and energy services for households and communities are key measures for mitigating traditional environmental risks, along with improved housing and vector-control interventions. Reducing modern risks calls for pollution prevention and abatement measures, which in turn require setting and enforcing environmental standards, developing a culture of environmental compliance, and creating

effective incentives. In Sub-Saharan Africa, for example, remedial measures outside healthcare systems—such as improved water and sanitation, household energy, housing, vector control, and pollution management—could reduce the total burden of disease by 23 to 29 percent. Healthcare interventions aimed at the same clusters of diseases affected by environmental factors—such as diarrhea, respiratory symptoms, eye diseases, and malaria—can reduce the disease burden by a further 23 to 28 percent (Listorti and Doumani 2001).

An assessment of measures to improve environmental health, although limited in scope and subject to verification by further studies, illustrates several important points:

- Health, especially environmental health, is a principal outcome of many interventions and project activities outside the health sector.
- Measures to mitigate traditional health hazards—such as indoor air pollution, scant sanitation, or insect vectors—appear to be very cost-effective. This finding, coupled with the significant impact of these hazards on the health of the poor, calls for greater attention to traditional household and community health risks in environmental work. Since interventions to reduce these risks fall in the domain of the energy and infrastructure sectors, there is a need for closer collaboration with these sectors to achieve health outcomes.
- Large variations in the cost-effectiveness of various interventions—across health hazards and within one type of hazard, such as urban air pollution—point to the need for rigorous analysis and skillful design of environmental health projects to maximize health benefits in a cost-effective manner.
- The key development objective of improving people's health requires a holistic, multisectoral approach to mitigating major risks by integrating cost-effective efforts inside and outside healthcare systems. A holistic approach is particularly important for improving the health of the poor, who are most vulnerable to both major environmental hazards and deficiencies in the provision of health services.

Lessons from Bank Experience

Bank experience with environmental health (EH) has been limited, as have the lessons learned. Many important environmental health issues fall through the cracks of development agencies because environment and health are both cross-sectoral and because institutions commonly lack clear directives for the multisectoral dimensions of their work.

In *the water supply and sanitation sector* (WSS), an array of lessons has emerged after nearly 25 years of research devoted to low-cost, appropriate technology and an International Decade dedicated to making drinking water and sanitation universally available. The lessons point to the value of an integrated approach to environmental health interventions; for example, integrating water supply with sanitation, drainage, community education, and hygiene practices (Listorti 1996).

A recently completed study by the Bank's Europe and Central Asia regional vice-presidency (ECA) on the health and hygiene dimensions of water and sanitation projects found that at least half of WSS investments are embodied within non-WSS projects, most notably Social Funds. This finding shows the high priority attached by communities to EH-related activities and cross-sectoral links to EH (Klees and others 1999). The study recommended that:

- An intersectoral approach to WSS projects, incorporating hygiene education, health and water quality issues, is needed to realize maximum impact from investments in infrastructure.

- Future environmental health work in the Bank should assist Bank staff in developing key performance monitoring indicators.

The most important Bank-supported interventions addressing indoor air pollution were large-scale programs for improved stoves in India and China in the late 1980s (although these were motivated by energy-efficiency, rather than health goals). Major lessons were (a) the need to target efforts toward the most affected communities; (b) the need to complement financial support with local capacity building, training in maintenance, and health awareness programs; (c) the need for a greater role for local authorities and communities; and (d) the importance of sustainable financial arrangements.

Experience is also emerging with regard to urban air quality management projects, such as the Mexico City Transport Air Quality Management Project, the Slovenia Environment Project, the Dhaka Air Quality (LILs); and discussions on proposed urban air pollution projects for the Bangkok and Katowice metropolitan areas. A recent and quite successful experience in which the Bank supported the global phaseout of leaded gasoline highlighted the crucial role of political commitment, public awareness, and partnership with the private sector (see box E.1 in annex E).

Future Challenges

WSS and urban projects represent the largest portion of the current EH-related portfolio. Maximizing health benefits through these projects requires more analytical work and a better understanding of specific linkages between project design and health outcome. Another area is indoor air pollution, which has clearly emerged as an overlooked problem in a number of regions; no projects were associated with this significant public health concern. Urban air pollution remains high, and is even worsening in some countries, but Bank activities to address this problem in a comprehensive way to date have been limited as indicated (see Kojima and Lovei, forthcoming).

Another key concern is the lack of indicators, baselines, and low-cost monitoring of EH projects or components. It is uniformly felt that increased monitoring of EH outcomes would improve the projects. Such monitoring would also be helpful to economic analysis of EH projects, especially cost/benefit analysis, which is rarely undertaken at present. Yet the desirability of improved monitoring and evaluation of EH outcomes of infrastructure projects are advisable to be weighed against the costs of conforming with these requirements. The Bank has been working on this issue in water and sanitation projects. Operational experience indicates that developing high quality, project-level baseline information, and complementing it with equally high quality monitoring and analysis, usually exceeds reasonable project budgets and client capacity. The difficulty and cost of measuring the impact of a project on health further arises from the fact that environmental factors are only one of many causes of disease, and if other causes of disease change over time, it is necessary to monitor health outcomes for a control group, as well as for the group receiving the environmental intervention. This limits the possibility of making improved health outcomes a stated objective of many Bank projects that do, in fact, have an impact on health.

Regional staff also stressed the need for linking EH issues with other sectoral efforts in an interdisciplinary manner; for example, nutrition and education, health issues associated with the localized impact of solid waste disposal, and occupational and traffic safety. Among the suggestions proposed by Regional staff were to:

- Better integrate environmental health in country assistance strategies (CASs)
- Embark on new analytical and advisory activities (AAAs) in EH, while strengthening capacity to increasingly apply existing knowledge in the field
- Define the scope for intersectoral collaboration on EH work that will best meet needs

- Include EH analysis in the environmental assessment process
- Devise low-cost ways of tracking and monitoring indicators of health outcomes through “reasonable” proxy indicators (see table C.2)
- Develop case studies on specific priority issues and pilot project activities.

Table C.2 Health outcomes and environmental interventions

<i>Environmental risk factors</i>	<i>Associated sectors/projects</i>	<i>Health outcomes</i>	<i>Health indicators</i>	<i>Examples of monitorable proxy indicators</i>
Indoor air pollution	Energy (cleaner fuels, improved stoves). Rural development.	Child mortality. Chronic obstructive pulmonary disease (COPD). Acute respiratory infections (ARI).	Child deaths due to respiratory illness. Cases of ARI. Incidence of COPD.	Estimates of exposure levels to indoor air pollution (IAP). Percentage of households using clean fuels or/and improved stoves. Type of housing. Cooking practices.
Outdoor air pollution	Energy. Transport.	Mortality. COPD. ARI. Respiratory hospital admissions (RHA). IQ impairment (lead).	Deaths (adult). Incidence of COPD. Cases of ARI. RHA.	Annual mean levels of PM ₁₀ (ug/m ³). Annual ambient concentrations of lead in the atmosphere (ug/m ³). Lead level in blood, particularly children (ug/dl).
Vector-borne disease	Irrigation. Reforestation. Infrastructure (drainage). Health (vector control).	Malaria mortality. Malaria morbidity.	Deaths due to malaria. Malaria cases.	Application of bednets. Application of insecticides. Indicators related to the development and maintenance of irrigation and drainage infrastructure.
Lack of water and sanitation (WSS)	WSS. Infrastructure. Social funds.	Mortality due to diarrheal disease. Diarrhea incidence.	Child deaths due to diarrhea. Diarrhea cases (child).	Relevant indicators of access to water and sanitation (for example, percentage of households with in-house connections, LPCD, percentage of community coverage with sanitation facilities). Indicators of sustained and effective use of WSS facilities. Quality of water in the source. Hygiene/behavioral change indicators.
Pesticide residues	Agriculture.	Acute poisoning. Cancer. Fetal defects.	Cases of acute poisoning. Cases of cancer.	Application norms. Storage and handling practices.
Other toxic substance	Control of industrial and transport pollution, change in fuel quality.	Cancers. IQ impairment (lead).	Cases of cancers, blood-lead-level.	Environmental performance. Waste management codes. Land zoning regulations. Market share of leaded gasoline.

Note: LPCD is “liters per capita per day,” WSS is “Water supply and sanitation.”

Source: Lvovsky and others 2000.

1 **Strategic Directions**

2 The World Bank Environment Strategy pays serious attention to environmental health by promoting three
3 major types of activities:

- 4 1. Improving knowledge of EH problems and developing an appropriate response that takes into account
5 institutional, financial, and social constraints; launching advocacy and dissemination activities; and
6 strengthening collaboration with strategic partners such as The World Health Organization (WHO),
7 other U.N. agencies, and bilateral organizations with experience in environmental health
- 8 2. Integrating critical EH issues into the operations of relevant sectors—such as health considerations
9 and hygiene promotion in WSS projects, indoor air pollution in energy operations, urban air pollution
10 in transport projects and city development strategies, and fuel quality in petroleum-sector
11 restructuring work
- 12 3. Adopting a holistic approach to development impacts that focuses on tangible improvements in
13 human health and facilitates cross-sectoral collaboration inside the Bank and in client countries.

ANNEX D

Natural Resources Management

Natural Resources, Poverty, and Sustainability

Natural Resources (NR) provide fundamental support to life and economic processes. Soils are the foundation of agriculture, which in turn is the basic building block in the livelihoods of all people. Forests help protect water sources, reduce the risks of natural disasters such as landslides and flooding, are home to at least 80 percent of remaining terrestrial biodiversity, and are a major carbon sink that mitigates climate change. More than 1.6 billion people depend on forests for their livelihood in some way. Water is essential for the sustenance and health of humankind and indeed of all species, and is an important input for agriculture and many industries, and a significant sink for waste discharges. Coastal and marine ecosystems include some of the most diverse and productive habitats on earth. Marine fisheries are an important part of the world's food supply. Ecological processes maintain soil productivity, recycle nutrients, cleanse air and water, and regulate climatic cycles. At the genetic level, diversity found in natural life forms supports the breeding programs necessary to protect and improve cultivated plants and domesticated animals, and thus helps safeguard food security. Properly managed, natural resources provide the foundation for maintaining and improving the quality of life of the world's population and can make invaluable contributions to sustainable growth.

This foundation is coming under increasing pressure from mismanagement, a growing population, higher levels of economic activity per capita, and the complex interactions of these phenomena. Evidence of the resulting degradation of natural resources is all around us. Eleven percent of the earth's vegetated surface (1.2 billion hectares) has been significantly degraded by human activity over the past 45 years, affecting more than 900 million people in 100 countries. Erosion, salinization, compaction, and other forms of degradation affect 30 percent of the world's irrigated lands, 40 percent of rainfed agricultural lands, and 70 percent of rangelands. More than one fifth of the world's tropical forests have been cleared since 1960. Globally, 12 to 15 million hectares of forest are lost every year, in addition to substantial areas of grasslands and wetlands. In 1990, 28 countries with a total population of about 335 million experienced "water stress"—availability of less than 1,700 cubic meters per person per year. This figure is expected to grow to around 50 countries, affecting some 3 billion people, by 2025. Country figures, moreover, mask widespread localized water shortages. The world's oceans are threatened by nutrient and heavy metal pollution, severe overfishing, and disease. Coral reefs are being degraded at an unprecedented rate—as much as 40 percent of the world's reefs will be lost in the next 10 to 20 years at current rates.

Degradation of the natural resource base is having a substantial impact on the economies of developing countries. It threatens the quality of life directly. Deforestation increases vulnerability to natural disasters, as shown by the devastating impacts of Hurricane Mitch in Central America. Even in the absence of hurricanes, flooding and landslides have been regular events, causing widespread loss of life and damage to crops and infrastructure. The increasing scarcity of water and fuelwood forces many—primarily women and children—to walk long distances to collect their daily supplies. The World Health Organization (WHO) estimates that more than 5 million people die each year from diseases caused by unsafe drinking water and lack of water for sanitation and hygiene. Smoke from fires set to clear forest areas cause widespread respiratory problems. These are real economic, social, and human costs, even though they seldom appear in national accounts.

Degradation of the natural resource base also threatens long-term growth. Improving agricultural productivity is an essential part of development and poverty alleviation strategies in many countries.

Degradation of soil and water resources threatens this objective. In parts of the Pakistani Punjab, for example, salinization and other problems in irrigated areas have offset many of the productivity gains resulting from the Green Revolution. Deforestation is harming growth even from the narrow perspective of the timber industry—in countries that have mismanaged their forest resources, mills soon find themselves bereft of supplies. The balance sheet becomes even bleaker when the costs imposed on other sectors are added—the higher flood risk, the sedimentation that reduces hydroelectric power generation and water availability for irrigation, and the loss of fisheries. Many inland and marine fisheries have collapsed completely; in many countries, the sector only survives with massive and onerous government subsidies. Taking this depletion into account can subtract several percentage points from GDP.

The impact of this degradation is particularly severe on the poor, who tend to rely heavily on fragile natural resources for their livelihood. Moreover, their claim to these resources is often tenuous. Because they are at a social and economic disadvantage, the poor often reside in fringe areas, where access to potable drinking water and adequate sanitation facilities is limited and higher mortality, morbidity, and disease rates prevail, or in highly vulnerable areas such as floodplains, coastal areas, and degraded hillsides, with a diminished capacity for buffering against natural and man-made shocks and disasters.

Enhancing the Sustainability and the Poverty Impact of NRM: Key Strategic Choices

Natural Resources Management (NRM) refers to the utilization of natural resources, such as land, water, air, minerals, forests, fisheries, and wild flora and fauna. This annex begins by identifying key concerns and policy approaches to improving NRM and ameliorating its impact on poverty. It then reviews the key issues arising in the context of some of the most important natural resources: land, forests, and water. The perspective taken by the strategy is that NRM should contribute to poverty alleviation, and that natural resources should be used in a sustainable manner to enhance human welfare.

Sustainable NRM and poverty alleviation are generally highly compatible. The poor are usually most directly dependent on natural resources for their livelihood, and most vulnerable to the consequences of natural resource degradation. Improving NRM thus can make substantial contributions to helping improve the welfare of the poor. Sustainable intensification of agriculture can improve the income of poor farm households in both the short and long terms. It can also help reduce pressures to expand into the remaining forest areas, avoiding increased downstream damage from flooding and sedimentation and preserving biodiversity. Nevertheless, difficult tradeoffs may be encountered at times. Reducing downstream damage may require restricting the land-use options of poor farm households in the upper watershed. Unless means are found to compensate these households, such restrictions are likely to be either ineffective or inequitable. Improved NRM can result in substantial economic gains. Often, these gains will benefit the poor directly. But when they do not, they should not be asked to pay for them.

New evidence supports a shift in the way we understand NRM and the links between poverty and environmental degradation, toward focusing on how microlevel institutions mediate the impacts of the macro environment to foster sustainability. This approach starts with an analysis of how people access and use resources as part of their overall livelihood strategy, and how they adapt to the conditions created by macro policy and political frameworks. This lens broadens the analysis of local options for resource management away from NRM and agricultural strategies, to look at the multiple, flexible livelihood strategies that people pursue and the institutional and cultural context in which they live (the U.K. Department for International Development (DFID) has described this approach as the “livelihoods approach”). It also explicitly assesses the local institutions and political economy that determine who in the society—men, women, indigenous people, farmers, or industrialists—have resource entitlements and access to resources and capital.

Studies using this approach have documented the importance of social capital at multiple institutional levels; the role of environmental entitlements, including land and resource tenure; the values of social and cultural preferences; the income strategies that factor in vulnerability to cyclical events or political risks; and the dynamics of urban-rural remittances from migrants still culturally tied to rural areas. These studies offer a rich set of examples of ways in which local people mitigate poverty induced by environmental degradation or limited resource access. They also show how local people have reversed patterns of degradation, despite less than perfect policy and legal conditions.

These lessons point to three main strategic themes that need to be addressed to enhance the sustainability and poverty impact of NRM:

1. *Incentives.* Decisions on NRM are not made by governments or international organizations, they are made by millions of individual decisionmakers—by farmers who decide what crops to plant and what inputs to use, or who decide whether to increase their cultivated area by clearing some forests; by developers who decide where to locate housing or industry; by fishers who decide what type of fishing gear to use, where to fish, and how many days to spend at sea. The incentives faced by these decisionmakers are critical to NRM. Inefficiencies in the utilization of natural resources often arise because private and social prices differ and markets are incomplete or distorted. The result is lower total welfare, particularly for the poor. A fundamental distinction needs to be made between the on-site and the off-site effects of natural resource problems.
 - *On-site effects.* In the case of on-site effects, decisionmakers already have powerful incentives to address natural resource problems, since they are affected directly. The main need in this case is to remove obstacles to the proper functioning of existing incentives. This often includes the introduction of exclusive use rights, as discussed below.
 - *Off-site effects.* Conversely, in the case of off-site effects, decisionmakers usually have little or no incentive to address natural resource problems, as their consequences do not affect them. In such situations, incentives need to be created. Policymakers should (a) remove policy-induced distortions that undermine sound NRM; (b) complement market signals with taxes/fees that reflect social opportunity costs, or payments that reflect social benefits; and (c) selectively regulate the remaining externalities.
2. *Property rights.* Unsustainable and inefficient utilization of natural resources often arises because property rights are not complete, exclusive, enforced, and transferable. The issue of property rights is particularly salient in the case of open-access resources, such as fisheries. In addition, property rights that do fulfill these conditions are often quite skewed. The result is a “smaller pie” than theoretically possible and a “smaller piece of the pie” for the poor. Though secure property rights do not guarantee greater resource conservation, in many circumstances they can play an important role. Policymakers’ first order of business should be to (a) clarify property rights where they do not exist, are obscure, or are in dispute; (b) enforce property rights to support better NRM and therefore contribute to poverty alleviation; and (c) selectively regulate remaining externalities using the right incentives.
3. *Empowerment.* Inefficiencies and inequities in the utilization of natural resources often arise because many important stakeholders have little say in their management. Several strands of work are required to build social capital and support for honest and transparent institutions that have the confidence of the local population. Particular care is needed when natural resources are managed by indigenous peoples.

Key Natural Resource Issues

Land

The land resources of the world are limited and at constant risk of being further degraded. Land degradation affects agricultural productivity and is, therefore, a major factor in food security and rural poverty. Although productivity trends indicate that aggregate global food supply is not seriously threatened in the short term, some regional trends are of great concern: per capita food production in Africa has been slowly dropping during the last 30 years, and in the former Soviet Union food production has decreased significantly since 1990. Problems are particularly acute in dryland areas. Doubling food production by 2050 to meet human needs will create new pressures. It should also be noted that increases in global food supply often come at a heavy environmental cost in terms of pesticide pollution, water table depletion, biodiversity losses, and land degradation as a result of inappropriate land use systems.

A major change toward sustainable land resources management (SLRM) is needed to protect and enhance the productive base of land resources and the livelihoods of the people who depend on them. To achieve this in countries with high poverty rates requires addressing a wide range of issues, including: land policy issues (property and access rights, and land use planning); key sector policies (including price policies and other policies that affect incentives, as well as infrastructure policies and investments); and changes in governance processes (decentralization and empowerment of local communities).

The United Nations Convention to Combat Desertification (CCD) places primary responsibility for action on land degradation with the governments of affected countries. Effective action requires government commitment, political will, and capacity. Environmental issues, including follow-up to the CCD, are often the domain of specialized environmental agencies rather than line ministries such as ministries of agriculture. As a result, they often have little impact on macroeconomic and sector policies. Focusing more attention on how government commitment is created and sustained—the political economy of land management—is therefore critical. An efficient land policy framework is needed, including (a) security of land rights and land access; (b) establishment of the institutional infrastructure to administer land rights; and (c) facilitation of land markets and transferability of land rights.

Participation by rural communities is crucial to improved land management (see box D.1). In order to be effective, policies must be based on the knowledge, needs, priorities, and decisions of people living on and using the land. These communities, many of them very poor, have a strong interest in preserving the resources that provide for their survival, but are often constrained by inappropriate government or donor policies. Identifying local preferences through direct consultation and incorporating indigenous knowledge are particularly important in cases involving indigenous peoples. SLRM hinges on a new approach of agricultural intensification that combines three basic principles: (1) integrating the biophysical and socioeconomic driving forces involved; (2) fostering a people-centered learning and participatory approach; and (3) bringing recognizable and early productivity benefits to farmers (“SLRM for business”).

Box D.1

Community-based natural resources management

Natural resource management projects increasingly try to provide a role for communities in the design and implementation of NRM projects. For example, the Mauritania Rainfed Natural Resource Management Project (FY 1997) is financing the first five years of a 20-year long-term program to activate a process of natural regeneration of land fertility, rangeland vegetation, and livestock and forest production. It will do this by encouraging the emergence of better adapted and more sustainable approaches to resource use. This is likely to result in greater biodiversity conservation, while generating more income and a better quality of life for the local people. The project will provide rural communities with effective empowerment in the management of their natural resources. It is active in 47 villages in three regions of the country. A number of micro-projects (dikes, small dams, wells, women's vegetable gardens, nurseries of indigenous tree species) are under way with the active participation of local communities.

1 A strategy for land resources management should be based on a four-fold approach:

- 2 1. *Support the new approach on agricultural intensification and environmental protection* by
3 (a) managing biological interactions that favor crop and animal productivity in a profitable and
4 ecologically sensitive manner; and (b) empowering rural producers and their organizations or
5 communities through knowledge acquisition and capacity building
- 6 2. *Change the role of state and public services* by implementing a decentralization process with full
7 participation of the main stakeholders in land use and land management
- 8 3. *Contribute to and implement international agreements like the CCD*, which are conducive to this
9 change in mindset and institutional shift
- 10 4. *Monitor downstream and offsite impacts* from land use practices so that a more complete assessment
11 of their costs and benefits can be made and measures taken to encourage beneficial uses and to
12 discourage harmful ones.

13 **Forests**

14 Forests have a major role to play in poverty alleviation, sustainable economic growth, and the provision
15 of ecosystem services. Of the world's 1.2 billion extreme poor, 90 percent—those living on \$1 or less a
16 day—depend on forests for their income or are significantly dependent on forest resources, including
17 agroforestry and tree crops. The Bank's 1991 forestry strategy and 1993 policy sought to protect forests
18 by adopting a conservation-oriented approach. A review of the Bank's performance by the Bank's
19 Operations Evaluation Department (OED) concludes that although the overall goals set out were laudable,
20 they were misplaced to some extent and that implementation has been only modest. The strategy
21 overemphasized the objective of halting deforestation in the tropics, at the expense of focusing on poverty
22 alleviation and the broader spectrum of forest types. Specific policy requirements created risk-averse
23 behavior and avoidance of difficult problems in the sector; this was compounded by the lack of a clear
24 and implementable strategy. The OED recommended that the Bank modify its policy objectives for
25 forests and expand its coverage. As a multisectoral agency with major activities across economies, the
26 Bank needs a strategy that comprehensively deals with all potential impacts on forests and forest peoples,
27 rather than one focused only on its fairly small forestry investment portfolio. To be effective, the Bank
28 will also need to review its objectives and approaches to forests and forest peoples. If it does not, it will
29 fail to generate significant improvements in forest outcomes and will fall far short of its larger
30 institutional goals of poverty alleviation and sustainable economic growth. It will also miss its
31 opportunity to make a major contribution to the protection of the important global values embodied in the
32 world's forests.

33 Based on the OED review, specially commissioned analytical studies of key issues, a major process of
34 consultation with stakeholders, and the input of Bank's forest sector operational staff, a new strategy has
35 been formulated. The three basic objectives of the new forests strategy are closely linked with the key
36 objectives of the Bank's Environment Strategy (see box D.2.). The three goals are as follows:

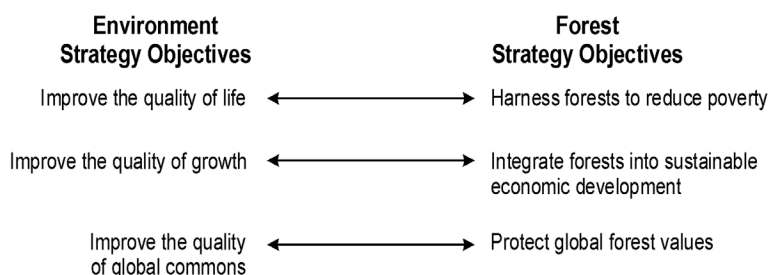
- 37 1. *Harness the potential of forests to reduce poverty* by creating opportunity, empowerment, and
38 security for rural people, especially the rural poor and indigenous groups, in the use and management
39 of forests. Especially important are joint and collaborative forest management systems, and the
40 identification of priority areas in which the Bank will seek to have maximum impact on poverty.

2. *Integrate forests into sustainable economic development.* The approach described here is based on the fact that forests are seriously undervalued—and utilized wastefully and unsustainably—in many economies, largely as a result of governance failures and perverse incentives. The major directions to be followed will be: developing markets for environmental services; encouraging good forest management; improving governance (including control of illegal activities); promoting active participation in management decisionmaking by all stakeholders; and managing adverse cross-sectoral and macroeconomic impacts on forest resources.

Box D.2

Linkages between the Environment Strategy and the revised Forest Strategy

The World Bank's Environment Strategy is closely linked with sector strategies, such as forestry, rural development, and water resources management. For example, the main elements of the revised forest strategy correspond closely with the main objectives of the environment strategy. Both strategies focus on poverty, growth, and global issues.



Other common links exist between the strategies in their recognition of cross-sectoral issues, mainstreaming into policy dialogue, governance, selectivity, and better cooperation with development partners.

3. *Protect vital global forest values.* The most important challenge in this area is to create effective markets for global values and other externalities from forests, so that local and national stakeholders will benefit from protecting and managing the resource.

Water, coastal, and marine resources

The world is experiencing a systemic water crisis as a result of unsustainable use and management of water resources. A rapidly increasing population is exacerbating the traditional problem of providing water supply and sanitation services. More than 1 billion people do not have access to potable water supplies, and 3 billion do not have adequate sanitation. The world's major lakes, rivers, and aquifers are under severe stress. The water sector also faces new threats and challenges, including urbanization; overabstraction and regulation of surface water; overpumping of groundwater; pollution from point and nonpoint sources; loss of aquatic biodiversity; conversion of wetlands, mangroves, and other coastal habitats; introduction of alien and exotic species and invasive weeds; emergence of disease and other marine pathogens; and increasing inter-basin water transfers. These threats, and the resulting degradation, are having a severe impact on the quality of life and on growth prospects. The impact is disproportionately felt by the poor, who directly or indirectly depend on terrestrial and aquatic ecosystems for income generation and are least able to adapt to reductions in water quality and availability.

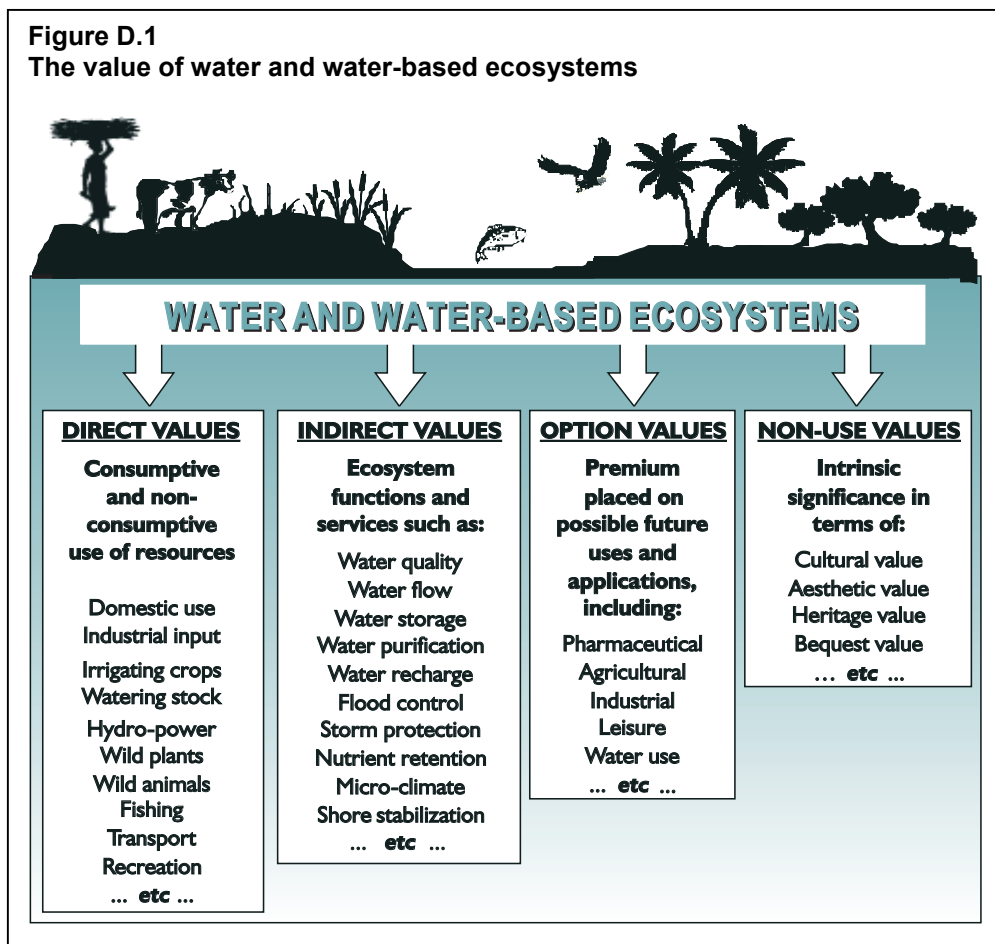
The key future challenges include: promoting a sound institutional environment; improving economic analysis of management options; improving transboundary water management; addressing social and sustainability issues of new dam construction; halting degradation and loss of ecosystem functions and the deterioration of freshwater lakes and reservoirs, wetlands, mangroves, and coral reefs; improving drainage; and addressing the water resources implications of climate change.

Environmental sustainability is a fundamental element of sound water resource management. The integration of environmental quality objectives remains an important challenge in the water policy reform and management process. Environmental assessments have proved to be a useful tool for screening and predicting potential impacts. However, the lack of clear environmental sustainability criteria for the water sector, capacity constraints, and lack of commitment to follow through with politically difficult decisions hinder the effective integration of environmental issues in water projects. As a result, often the influence of these studies on project decisionmaking, especially the analysis of alternatives, is limited. Demand management is part of water supply and sanitation policy and an area of increasing emphasis in irrigation activities; most water supply and sanitation projects and many irrigation projects emphasize some elements of demand management. But in a number of areas such as sanitation, drainage, and water quality management, considerable work remains to be done. Water allocation requirements for environmental uses, including the protection of biodiversity, should be given increased priority in light of rising demands for water and frequent problems resulting from degradation of water quality (see figure D.1).

The Bank's Strategic Framework for Action on water provides a basis for achieving the broad objective of systematically mainstreaming environmental quality objectives in water resource planning, development, and management programs and investments. It calls for a set of complementary measures to strengthen environmental management capacity, as follows:

- Promoting a comprehensive approach to water resource management, including (a) treating water as a unitary resource; (b) supporting a shift from curative to preventive actions; (c) improving the integration of environmental quality objectives in regional and national water resource management strategies, river basin planning, investment projects, and policy reforms and actions and changing the safeguard policy orientation from "do no harm" to "promote improved development;" and (d) adopting environmental sustainability criteria for the water sector.
- Supporting actions to more fully integrate water quality concerns into water supply and sanitation efforts. Water sector reforms should be complemented by an effective regulatory framework and incentive structure for managing the water resource base and ensuring its sustainability.
- Recognizing ecological uses for water.

Figure D.1
The value of water and water-based ecosystems



1 Environmental flow assessments should be conducted as integral parts of water resource operations
2 (including environmental assessment).

- 3 ■ Improving transboundary water management. Numerous river basins, groundwater aquifers, and
4 coastal and marine environments cross national boundaries, creating a need for cooperative
5 management. Transboundary waters have often been a source of conflict, but they can also stimulate
6 joint efforts. The primary management challenges include allocation/sharing of water, management of
7 water quality, navigation and flood control, and degradation of aquatic ecosystems.

8 Effective implementation of the Strategic Framework for Action calls for strengthening environmental
9 management capacity, use of interdisciplinary teams, knowledge sharing, analytical work, and strategic
10 partnerships. To accomplish these objectives will require a long-term commitment by the Bank and
11 allocation of resources for promoting policy dialogue, cooperatively undertaking sector studies, and for
12 the preparation and supervision of lending operations and the provision of nonlending services.

13 ***Biodiversity***

14 The vast array of the world's animals and plants, the genetic information they contain, and the dynamic
15 and interacting communities they form are known collectively as “biodiversity.” As such, biodiversity
16 “permeates” all levels of NRM, since its individual elements interact in intricate ways to form forests and
17 grasslands, maintain soils, and provide ecosystem services, among other fundamental functions. Most
18 biodiversity is uncatalogued. Some of the known genes, species, and communities have critical uses—as
19 food, commodities, medicines, moderators of climate and hydrology, pollinators, or soil formers—but the
20 contributions made by others are insufficiently known. The planet is losing species at a rate higher than at
21 any time in its history—an “extinction spasm” that undermines future development options.

22 The sharp distinction often made between “local” and “global” environmental issues is an artificial
23 construct (see annex I). Understanding the linkages between various issues and properly identifying their
24 influence on the local-to-global continuum can help diagnose problems, identify solutions, and find
25 common ground between advocates of various approaches. Biodiversity provides two special challenges
26 for NRM: (1) most of its benefits are economic externalities, that is, they do not appear as financial values
27 on a market where they can be easily observed; and (2) some benefits of biodiversity accrue over the long
28 term, while the cost of conservation may be more immediate. In addition, many people consider
29 biodiversity as having intrinsic value, for moral, religious, or cultural reasons.

30 The perception that biodiversity is a global issue stems from the fact that its widespread decline has
31 cumulative consequences at the global level. Most of the benefits and costs resulting from biodiversity
32 conservation accrue primarily at the local and national levels. Important national benefits justify many
33 interventions—such as protection of watersheds with natural forest, which reduce river siltation and
34 support fish populations harvested by riparian peoples—even in the absence of international financing.
35 Pollination, for example, is important for local crops, and wetland ecosystems can play an important role
36 in purifying water. Nature-oriented tourism has the potential for being an important income source, and
37 already is in countries such as Costa Rica and Kenya. Dive tourism is a growing segment of the tourism
38 market in coral reef nations, particularly in the Caribbean and the Indo-Pacific. Some of the benefits of
39 improving biodiversity conservation and its sustainable use, however—such as new medicines and crops
40 developed as a result of access to new genetic resources—accrue in principle to mankind as a whole.
41 When these global benefits cannot be easily internalized, global financing mechanisms such as the GEF
42 can be used to support the path toward sustainability.

43 The World Bank recognizes the need to support the obligations that its clients have assumed under the
44 Conventions on Biological Diversity and Climate Change, and is also committed to serve as an
45 implementing agency for the Global Environment Facility (GEF). These facts have been taken into

account in the strategy, emphasizing positive linkages and the opportunities to reduce poverty that these commitments provide.

Future Directions for the World Bank

The analysis summarized above points to several key new directions to better address the links between poverty and NRM:

Taking a holistic approach. Clearly, there is a need for a holistic approach that can (a) integrate economic and social factors into ecosystem management goals and address poverty alleviation and environmental conservation issues simultaneously; and (b) consider NRM problems at the appropriate management scale. Lessons from NRM projects show that it may be necessary to define the management scale beyond the boundaries of administrative units to encompass an entire ecosystem or other natural unit, such as a watershed. For example, water is a unitary resource that needs to be addressed in a comprehensive manner, recognizing and operationalizing the important linkages between upstream actions and their downstream consequences for river basins, lakes, and coastal and marine environments.

Taking a long-term perspective. NRM problems are almost always long-term problems, and require both a long-term perspective and suitable tools. Such tools include Adaptable Program Loans (APLs), and the creation of Trust Funds and other innovative financial mechanisms that can finance NRM activities and recurrent costs in perpetuity (see box I.1 in annex I).

Moving from curative to preventive actions. The costs of preventing resource degradation are often small compared to remediation and rehabilitation. A major challenge for NRM organizations and programs is to increase the level of effort for preventive measures while maintaining support for curative interventions in degraded areas.

Letting communities drive implementation. As in other sectors, more efficient and equitable ways of implementing NRM projects are necessary. In light of the site-specificity of NRM problems, and the need to consider the incentives of local stakeholders and empower them to take action, Community Driven Development (CDD) has substantial promise as an approach to implement programs (see boxes 2.1 in chapter 2 and A.3 in annex A). An important caveat here is that when off-site impacts are considerable, external transfers may be necessary to complement local management.

Increasing the role of the private sector. Improving NRM requires a careful assessment of which functions need to be fulfilled by governments, and which can be more effectively undertaken by the private sector. It is essential, however, to ensure that greater private sector involvement is complemented by an effective regulatory framework.

Generating multiple benefits. Shifts in market forces, globalization, and demographic forces present new opportunities for enhanced NRM. Some of these opportunities relate to the preferences of rich-country consumers for commodities that have been produced in an environmentally benign manner; while others build upon the overlap that often exists between better soil management, maintenance of forest cover, and reduced pesticide use. For example, shade-grown coffee provides greater social benefits related to employment and health, increases farm economic returns, and enhances habitats for biodiversity conservation.

Building upon “global to local” synergies. As an implementing agency of the Global Environment Facility, the World Bank is in a good position to support interventions that simultaneously generate local benefits (that can be supported by the Bank and IDA) and global benefits (that can be supported by the GEF on an incremental cost basis). The growing mainstreaming of the GEF’s biodiversity portfolio

1 within productive sectors, and its increased association with NRM loans, provide concrete examples of
2 this approach.

3 *Monitoring and evaluation.* Monitoring and evaluation is indispensable, both at the micro level of
4 individual interventions, to assess their effectiveness and allow for course corrections if necessary, and at
5 the broader “macro” level of overall trends, to diagnose problems and to identify the need for
6 interventions and prioritize them. Monitoring can also help ensure that environmental concerns are better
7 integrated into economic policymaking, by showing more clearly how environmental quality and NRM
8 affect welfare and economic development.

9 Together, these aspects of implementation present a formidable agenda for NRM operations. They can
10 only succeed in a policy environment that has addressed the fundamentals of poverty alleviation: clear
11 property rights to natural resources, conducive incentives, and local empowerment for NRM. At the same
12 time, they need to build upon the strategic shifts and opportunities provided by holistic and long-term
13 approaches, community-driven implementation, generation of multiple benefits, and the exploiting of
14 synergies in the local-to-global continuum.

15 To properly promote these policy and programmatic shifts, the World Bank itself needs to make shifts
16 that reflect these challenges. These alignments need to be supported by the proper enhancement of
17 financial resources, management buy-in, and staffing. The following lines of action were identified as
18 prerequisites to the promotion of the strategic shifts identified in the strategy:

- 19 ■ *Increase internal awareness.* It is important to demonstrate, through action and generation of
20 experience, that these shifts indeed provide poverty reduction impacts and enhance social,
21 environmental, and economic sustainability.
- 22 ■ *Mainstream with measurable targets.* Mainstreaming must be promoted deliberately, with measurable
23 targets and built-in accountabilities. Staff time needs to be made available to systematically evaluate
24 and strengthen the existing toolkit (ESWs, CASs, loans, and grants). Such proactive mainstreaming
25 can only be possible through internal incentives for staff to more actively participate in learning,
26 awareness raising, research, exchange of lessons learned, and quality enhancement.
- 27 ■ *Strengthen selected partnerships.* The World Bank is well-equipped with the tools to support the
28 policy and programmatic shifts presented above. Nevertheless, there will be various instances in
29 which our impacts can be enhanced through stronger partnerships in which clear and measurable
30 outcomes can be identified, and which support the overall direction of the strategy. One such
31 partnership (the GEF) places the Bank in an excellent position to support the dual local-global
32 agendas demanded by our clients (see annex I). In other cases, innovative approaches (such as the one
33 exemplified by the recent launch of the Critical Ecosystem Partnership Fund (CEPF) can provide
34 leverage in a cost-effective manner (see annex K for a list of external partnerships).
- 35 ■ *Monitor progress.* Mainstreaming needs to be promoted against a backdrop of measurable indicators
36 of progress, and monitored periodically. There is a need to develop methodologies to measure
37 mainstreaming, and to strengthen the management of knowledge that can support the goals of the
38 strategy.

ANNEX E

Urban Environmental Priorities

The 20th century witnessed a dramatic increase in urbanization. Major cities are home to more than 50 percent of the world's population today, compared with only 14 percent in 1900. The highest rates of increase are observed in the poorest regions of the world. In East Asia, Sub-Saharan Africa, and the Middle East and North Africa, urbanization is proceeding rapidly, with urban growth exceeding 4 percent a year. Most of the urban growth is explained by natural population increase within cities and by the structural transformation and incorporation of formerly rural areas at the urban periphery. In some countries, rural-to-urban migration is an important factor; individuals come to cities in search of education, jobs, and better lives for themselves and their families. In many countries, the most rapid population growth is occurring outside the boundaries of existing primary or secondary cities. Mushrooming peri-urban areas in Africa and Latin America are becoming massive slums.

The Environmental Challenges of Urbanization

Cities are powerful socioeconomic units, the engines of economic development. Their attractiveness, which has led to rapid urbanization, also contributed to pressing urban environmental problems. Basic environmental services often cannot keep pace with the rapidly rising demand, while growing economic activities impose new pressures. Many cities and towns in the developing world are already characterized by high levels of air and water pollution, slums, deteriorating infrastructure, and poor waste management systems. The resulting exposure to microbiological pathogens due to unsafe drinking water, inadequate sanitation, and poor waste management is one of the most serious environmental health threats in developing countries. It is estimated that every year, between 0.5 million and 1.0 million people die prematurely in developing countries as a result of exposure to urban air pollution, especially fine particulates from vehicles, households, municipal sources, as well as industries and power plants. Besides fine particulates, lead is among the most serious environmental health threats in cities where leaded gasoline is still used, contributing to behavioral problems and learning disabilities in young children even at low levels of exposure (see annex C for more detail on environmental health issues).

Poverty and environmental conditions

Environmental problems exacerbate urban poverty. Poor cities and poor neighborhoods suffer disproportionately from inadequate water and sanitation facilities and indoor air pollution, and poor people are often forced to live in environmentally unsafe areas. These may be steep hillsides and flood plains, or polluted sites near solid waste dumps, open drains and sewers, and polluting industries. The poor may have less fear of eviction in such marginal areas, but they are at much greater risk from natural and man-made disasters and from pollution.

Poor environmental conditions lead to poor health, which aggravates poverty and often results in lower educational levels, as well as loss of income owing to sickness, disease, and increased spending on health care, which may deplete household savings. Poverty prevents people from moving to safer areas, or investing in improved environments where they live. Hence the necessity to improve the environmental conditions of the urban poor in order to enhance their chance of "breaking the cycle" and eventually moving out of poverty.

However, the rate of population growth and physical expansion are outstripping the ability of many cities to provide basic health and environmental services. By 2025, it is estimated that almost 65 percent of the world's population (and an even larger share of total national economic wealth) will be concentrated in

1 cities and towns, making it an enormous challenge to ensure that such growth is managed without
2 seriously damaging the urban environment or the health of urban residents.

3 ***Industrial development and pollution***

4 Economic growth in urban areas is often based on industrial activity, which for many developing
5 countries means either primary materials processing or secondary industries. Such industries provide
6 employment but are often unsafe and highly polluting—releasing high levels of air and water pollution or
7 generating toxic industrial waste. As a consequence, the price paid for economic opportunities may be
8 serious air and water pollution from industry, adding to the problems created by unprotected sewage from
9 domestic sources.

10 Cleaner technologies and good practice in the adoption of pollution prevention and abatement techniques
11 offer important opportunities for industries to improve their environmental performance. The World Bank
12 Group's *Pollution Prevention and Abatement Handbook 1998* summarizes preventive and abatement
13 approaches and good practice in a range of industries (see box 3.6 in chapter 3).

14 ***Transport air pollution***

15 As levels of development are raised, some industrial and municipal problems are brought under control,
16 but such improvement is often offset by the effects of increasing levels of vehicular transport—particularly
17 air pollution. As income levels rise, many developing countries experience rapid increases in vehicle
18 ownership and motorization, particularly in urban areas. The majority of vehicle emissions occur near
19 ground level and in densely populated areas. Humans are therefore, exposed much more readily to their
20 harmful pollutants than to those of sources, such as power plants, that are situated at elevated levels and at
21 greater distances from dense population centers. In addition, vehicle exhaust particles are small, profuse,
22 and readily inhaled, so that they are expected to cause widespread damage to human health. Pollution
23 abatement in the transport sector is therefore likely to become increasingly important in urban air quality
24 management strategies in the coming years.

25 Measures such as improved traffic management and demand management, undertaken to reduce
26 congestion and improve traffic flows, often bring environmental benefits. Land use planning is often seen
27 as an important tool to influence the long-term environmental implications of city development. Of the
28 targeted pollution abatement measures, the first priority for developing countries is to phase out lead from
29 gasoline (see box E.1 for issues concerning the phaseout of leaded gasoline). Other policies and
30 measures—including vehicle emission standards, improved vehicle technology, vehicle inspection and
31 maintenance programs, programs for retiring or scrapping vehicles, fuel improvements or alternatives—
32 have to be carefully coordinated to be effective and generate the desired improvement to air quality
33 (Kojima and Lovei forthcoming).

34 ***Growing effects of cities***

35 Linkages between environment and development are not limited to conditions within cities. Urban
36 growth can have profound effects on surrounding areas, particularly in relation to land conversion, water
37 abstraction, and discharges of wastewater and solid waste. Urban environmental strategies need to address
38 the effects of urbanization on peri-urban and rural populations, as well as the likely effects on each other
39 of urban and rural economic decisions. Water resources illustrate the scale on which cities can influence
40 surrounding environments. Examples include the effect of wastewater discharges on downstream
41 communities, users, and ecosystems; competition for water between urban, rural, and other uses, and
42 among cities. As urban centers grow in size and number, their external effects begin to overlap.

43 These effects are enhanced by the global phenomenon of increasing migration to coastal areas. Sixty
44 percent of the world's population lives within 100 kilometers of the coast, an area that accounts for only
45 about 25 percent of the land mass (WRI 2000). By 2025, over 80 percent of the largest 30 cities in the

world will be in developing countries, and the majority will be coastal mega-cities (UN 1995). Coastal areas are often used as a dumping ground for sewage, garbage, and toxic wastes, polluting both the land and the coastal seas. An example is the formidable environmental stress along the West African coastline; here rapid population growth combined with industrial and urban development has increased pollution in marine and coastal ecosystems to alarming levels, often obstructing the development of a profitable tourism industry.

The World Bank's Experience

The World Bank has been active in helping client countries address urban environmental problems, using a range of lending and nonlending services. Many efforts are jointly undertaken with other development partners. The range of activities and services the Bank has helped to develop includes methodologies to assess urban environmental problems, mechanisms for setting and addressing environmental priorities, and lending for urban environmental improvements.

Methodologies to assess urban environmental problems. These methodologies include rapid assessment procedures to evaluate the comparative risks of environmental problems; a decision support system for integrated pollution management; methods of estimating dose response in individuals in order to evaluate the effect on health of specific pollutants; methods for assessing and selecting cost-effective improvements to urban environments. Bank sponsored country studies and assessments have addressed urban environment issues in many countries, including Argentina, Brazil, China, India, and Indonesia. The Environmental Action Program for Eastern and Central Europe, supported by the Bank, focused attention on and analyzed the effects on health and the environment of development in urban and industrial areas, particularly with respect to air pollution. Subsequent applications of these analytical approaches found that the costs of environmental damage in Asian cities (largely for air pollution) were equivalent to 5–10 percent of urban income and will continue to rise unless significant pollution management changes are implemented (World Bank 1997b).

Box E.1 Supporting the global phaseout of leaded gasoline

The World Bank recognizes that the phaseout of lead from gasoline is a very effective and technically feasible measure to reduce a serious environmental health threat. The Bank called for the complete phaseout of lead from gasoline, and has undertaken a number of activities to that end.

The Bank has initiated and participated in several regionally lead phase-out initiatives, including elimination of lead in gasoline in Latin America and the Caribbean, funded by the joint UNDP/World Bank Energy Sector Management Assistance Programme (ESMAP), the preparation of a pan-European strategy to phase out leaded petrol under the leadership of the United Nations Economic Commission for Europe (UNECE) and the government of Denmark; the national commitment building program to phase lead out of gasoline in Azerbaijan, Kazakhstan, and Uzbekistan, funded by the Danish Environmental Protection Agency; and the ESMAP-funded program for the elimination of lead in gasoline in the Middle East and North Africa.

The Bank has also helped individual countries to introduce appropriate policies, to conduct feasibility studies, and to implement policies. These countries include Bangladesh, Bulgaria, China, the Dominican Republic, El Salvador, Haiti, Indonesia, Jamaica, Malaysia, Romania, Thailand, and more recently, Pakistan, Sri Lanka, and Vietnam (the last three have programs in progress).

In all these activities the Bank has played the catalytic role in building consensus among a wide range of stakeholders and development partners, in transferring experience from other countries and regions, and in dispelling myths about lead phaseout. To ensure that refinery modernization schemes (which may be required to phase out lead) are optimally designed, the programs have stressed the importance of addressing comprehensive fuel quality issues as part of lead phase-out plans.

By 2001, 29 developing and transition economies have eliminated the use of lead additives in gasoline, and several others have plans to follow suit.

Source: Kojima and Lovei (forthcoming).

1 *Mechanisms for setting and addressing environmental priorities.* The Bank has supported several
2 programs and partnerships to help build mechanisms for consensus building, for consultation among a
3 range of stakeholders, and for the coordination of cross-sectoral policies and measures. The Urban
4 Management Program (UMP), sponsored by UNDP and UNCHS (Habitat) together with the Bank,
5 supports case studies, research, and partnership activities to assist cities and towns in developing
6 countries. The Metropolitan Environment Improvement Program (MEIP), established by UNDP and the
7 Bank and supported by several donors, has assisted several Asian cities to find and implement practical
8 solutions to rapidly growing environmental problems. The MELISSA program, developed by the Bank's
9 Africa Region, supports and facilitates the improvement of the local environment through partnership
10 development and knowledge management. The urgency of urban air quality problems and the complex
11 mix of actions required to tackle them led to the Urban Air Quality Management Strategy (URBAIR) in
12 Asia; this program assisted in the design and implementation of air quality management policies and in
13 the monitoring, and management intended to restore air quality in Asian metropolitan areas (see also box
14 3.2 in chapter 3). The Bank's call for the global phaseout of leaded gasoline, and its support for regional
15 and national lead phase-out programs have been effective in harnessing client commitment and action. A
16 set of follow-up activities has been undertaken in the framework of clean fuels programs. More recently,
17 the Clean Air Initiative, originally developed by the Bank for Latin America and now underway in other
18 regions, fosters regional partnerships that develop action plans to address worsening air quality problems
19 (see box A.4 in annex A).

20 *Lending for urban environmental improvements.* The Bank has extended lending to support urban
21 environmental improvements in many countries through projects touching all aspects of the need: urban,
22 environment, water supply and sanitation, urban transport, and energy. The most typical areas of Bank
23 support have been the following:

- 24 ■ *Solid waste management.* This is a key responsibility of many city governments and has been an area
25 for Bank assistance in the form of analytical work and urban investment for many years. The
26 Strategic Solid Waste Management Program has generated a range of practical and analytical tools
27 for planning, and there have been investments across the Bank's Regional vice-presidencies for waste
28 management activities; the latter often address waste collection and disposal problems, but
29 increasingly now support more comprehensive approaches to waste management.
- 30 ■ *Water supply, sanitation, and wastewater management.* These issues are central to the environmental
31 agenda, especially in urban areas. Much of the work has been at a site-specific or project level, and a
32 recent review showed that the urban and water supply and sanitation portfolios include significant
33 environmental components and investments. Issues of particular concern include the health and
34 environmental effects of inadequate sanitation coverage and improper sewage disposal, particularly in
35 poorer urban areas. These issues are being addressed in a multidonor water and sanitation program
36 among others. Analytical work has been undertaken to assess the health aspects in more detail and to
37 find effective ways to establish site-specific requirements for wastewater treatment.
- 38 ■ *Industrial pollution management.* Using a range of instruments, the Bank has supported industrial
39 pollution abatement and waste management efforts in many countries, often dealing with
40 implementation issues at both the national and city level. In the 1970s and the 1980s the Bank
41 supported several industrial pollution control projects. However, its approach has changed in parallel
42 with its declining involvement in the industrial sector, and with the increasing role of the private
43 sector in this area. Recent efforts have focused on guidance for good practice in pollution
44 management, on support for integrating environmental elements into the privatization of highly
45 polluting industries, and on facilitating the application of innovative regulatory instruments. The
46 *1998 Pollution Prevention and Abatement Handbook* summarized lessons in good practice and
47 provided guidelines for industrial facilities. New approaches to support for the regulatory framework,
48 which is often weak, were captured in the recent Bank report *Greening Industry* (World Bank 1999b).

- 1 ■ *Cleaner fuels.* In several projects, the Bank has supported the transition to cleaner fuels in
2 households, power generation, and transport. In many Central European countries and elsewhere,
3 switching from coal to gas in household heating has been effective in improving air quality. The
4 Bank-supported Slovenia Environment Management Project, for example, provided financing to
5 support and accelerate such a switch. The transition to cleaner fuels has been an important element in
6 implementing Fuel for Thought, the Bank's environment strategy for the energy sector.

7 **Future Challenges**

8 As cities continue to grow and increase in population size and in economic importance (both relatively
9 and absolutely), environmental pressures are likely to increase, and the Bank has to be prepared to assist
10 its clients to face the challenge (see box E.2). Hence the focus on environmental infrastructure services
11 and pollution management commonly found in many urban projects. It is also important to address
12 concern for the environmental sustainability of the ecosystems that support urban areas, such as
13 freshwater aquifers, greenbelts, airsheds and watersheds. Thus, meeting the urban environmental
14 challenge requires focus on two basic areas:

- 15 1. Provision of *basic environmental services, especially for the poor*, in a way that most effectively
16 protects health. These services include the following:
- 17 ■ Access to safe water supply, sanitation, drainage, solid waste collection and disposal, and health
18 education
- 19 ■ Improved municipal and industrial waste disposal
- 20 ■ Reduced indoor air pollution.
- 21 2. Implementation of integrated approaches to *urban air quality management* and *watershed and aquifer*
22 *management* to prevent and manage the impacts of pollution and degradation. These activities
23 include:
- 24 ■ Ambient air quality management
- 25 ■ Surface water and groundwater
26 management
- 27 ■ Land and ecosystem management
28 to preserve from loss to pollution,
29 particularly in coastal zones.

30 Regardless of the problem being
31 addressed, continuing efforts are required
32 to strengthen institutional capacity, to
33 improve governance, and to reform
34 environmental, economic, and financial
35 policies. All such efforts can produce
36 important environmental benefits.

37 **Strategic Directions for Bank** 38 **Operations**

39 In dealing with urban environmental
40 problems the Bank needs to work at
41 several levels—national, regional, and

Box E.2

Environment in the Bank's Urban Strategy

In the Bank's recent Urban and Local Government Strategy (World Bank 2000h) the concept of the "livable" city is defined in terms of a healthy and dignified living environment. Making cities livable requires addressing the sources of environmental degradation, enabling access to basic shelter and environmental services for the urban poor, and reducing their vulnerability to environmental hazards. The strategy proposes an agenda for working with both national and local governments to develop cities that are livable, well-governed and managed, and financially sustainable.

One of the key tools for viewing the city holistically and intervening selectively is the City Development Strategy (CDS), which can be seen both as a process and as a product emanating from the process. Where environmental problems are identified as priorities, an urban environmental management strategy can be developed, leading into issue-specific action plans. A common approach for achieving this objective is laid out in *Toward Environmental Strategies for Cities* (Bartone and others 1994), as well as other key publications (see bibliography).

1 local—and focus on a mixture of client-oriented and issue-oriented activities. The following are areas
2 where it is important to strengthen the Bank’s continuing environmental engagement:

- 3 ■ *Environmental management:* Work with the urban sector in the development of City Development
4 Strategies and similar programs to introduce environmental management into city planning.
5 Opportunities to introduce environmental good practice into city management or into sectoral
6 activities should be identified.
- 7 ■ *Air quality management:* Support for efforts to improve urban air quality in selected cities and regions
8 including analytical work; initiatives to phase out leaded gasoline and introduce clean fuels;
9 mechanisms for consensus building among stakeholders; passing on of lessons learned from programs
10 as such as the Clean Air Initiative.
- 11 ■ *Waste management:* Support for ongoing municipal waste management efforts currently led by the
12 urban sector; increased attention to industrial waste management, including hospital waste should be
13 promoted.
- 14 ■ *Basic services:* Strengthening of inputs to programs and projects designed to increase coverage of
15 basic environmental services, especially for poorer communities. The areas of water and wastewater
16 are particularly important.
- 17 ■ *Sustainable private sector development:* Work with the private sector and the International Finance
18 Corporation (IFC) to develop systematic approaches to improving the environmental outcomes of
19 privatization. Other public and private organizations can be encouraged to build on the good practice
20 examples already available to influence the environmental behavior of the private sector.
- 21 ■ *Response to urban expansion:* Identifying institutional mechanisms to address the ecological effects
22 of urban expansion, especially the consequences of development in watersheds or the coastal zone.

ANNEX F

Climate Change

The majority of scientific experts agree that climate change induced by human activity is occurring and that further change is inevitable. The *Third Assessment Report of the Intergovernmental Panel on Climate Change* (IPCC 2001) predicts that average global temperatures will rise between 1.4 and 5.8 degrees Celsius over the next 100 years, a rate of warming higher than any that has occurred over the last 10,000 years. The World Bank's work on climate change is predicated on conclusions of the report by the Intergovernmental Panel on Climate Control (IPCC).

Development Context

Despite uncertainties about where changes in climate will occur (the regional patterns), by when (the rate of change), and by how much (the magnitude), there is little debate on at least two key issues. *First*, because of the rapid build-up of greenhouse gases (GHGs), the earth's overall temperature will warm significantly, precipitation patterns will change, and sea levels will rise. *Second*, the adverse impacts of projected changes in climate conditions will pose major development challenges for most developing countries in the tropical and subtropical zones.

In developing countries, where human activities are already close to the margin of tolerance for current variations in climate, the impacts of the projected changes are expected to be far reaching, adversely affecting virtually all aspects of social and economic life of the poorest of the poor. For instance, in countries where yields from dry-land, non-irrigated agriculture are already near their maximum temperature tolerance, even small changes in temperature could have a devastating impact on agricultural output, with attendant consequences for food security. Changes in precipitation patterns associated with climate change, similarly, could adversely affect the availability and quality of water, especially in areas where scarcity is already a problem. Sea level rise, likewise, could displace millions of people living in low-lying areas of the Ganges and the Nile delta, and threaten the existence of Small Island States. Assisting clients to prepare for climate change, therefore, is inextricably linked to the Bank's mission of sustainable poverty reduction.

Developing countries fully recognize the implications of global climate change and the need for all nations to assume responsibility for protecting the global atmosphere, as reflected in their decision to ratify the United Nations Framework Convention on Climate Change (UNFCCC). However, because their contribution to the cumulative increase in atmospheric concentrations of GHG emissions has been small relative to that of developed countries, and because their short-term needs of providing food, energy, and other vital services for the poor are urgent, it was recognized that developing countries and economies in transition (non-Annex II Parties¹ to the UNFCCC) would be unwilling and unable to invest their scarce resources in measures that will yield benefits in the distant future or outside their boundaries.

For that reason, based on the principle of *common but differentiated responsibility*, developed country parties (Annex II Parties) agreed to provide their developing country counterparts new and additional grant resources and to support the transfer of technology on beneficial terms, though initially only for GHG mitigation. A decision on similar support for vulnerability and adaptation was deferred, however, pending a better understanding of the impacts of climate change. The UNFCCC regime and instruments

¹ Annex II parties to the UNFCCC refers to developed countries and non-Annex II to all others, including developing countries and the economies in transition.

are, as a result, expected to evolve in response to the understanding of the climate change phenomenon. The Bank will continue to review and learn from global experience and develop innovative instruments that meet the needs of its clients.

Lessons of Experience

The Bank involvement in the area of climate change began in 1991 with the establishment of the Global Environment Facility (GEF), and expanded following the designation of the GEF as the Financial Mechanism of the UNFCCC. Since then, the Bank has focused primarily on assisting clients to reduce GHG emissions, as they have been reluctant to borrow for vulnerability and adaptation on the expectation that support would be forthcoming on concessional terms under the UNFCCC. In particular, to achieve GHG outcomes without compromising national development priorities, the Bank has assisted its clients to mobilize additional grant resources for operational support, mainly in the energy sector. The World Bank Group/GEF portfolio today includes 62 projects, for which US\$6.2 billion has been mobilized: US\$730 million from the GEF and the balance from the WBG, donors, private investors, and government counterparts.

This decade-long involvement, representing first generation work in GHG mitigation, has been instrumental in opening up new prospects for energy efficiency, distributed supply, and off-grid service delivery, especially in remote rural areas. In addition, it has generated a number of key lessons of experience, two of which are noteworthy. *First*, policy reforms are essential for mobilizing private capital for efficient energy development, for creating a level playing field to foster competition, and for promoting alternative approaches to energy service delivery, including incentives for service providers to diversify and innovate and to enable clean technologies and fuels to compete on equal terms. *Second*, many cost effective options for reducing GHG emissions in developing countries also have substantial economic and local environmental benefits.

Strategic Priorities

The Bank recognizes that achieving objectives related to climate change will be a long-term process, and will require integrating the GHG mitigation and vulnerability and adaptation agendas into its mainstream operational work. In this regard, the differences in the relative priorities and needs of the developing countries are also recognized, as is the need for an array of supporting instruments. These include planning, policy dialogue, generation and dissemination of knowledge, and investment lending— all of which are primarily aimed at promoting national development priorities. Striking the right balance between national development priorities and protecting the global commons, therefore, will be critical.

Bank support to clients for better managing climate change is envisaged in three key areas: (a) mitigation of GHG emissions; (b) reducing vulnerability and adapting to climate change; and (c) capacity building. In the area of GHG mitigation, the Bank will continue to promote policy and regulatory reforms, as these tend to have large and sustainable impacts on improving the efficiency of resource use and consequent reductions in GHG emissions. In the context of these reforms, the Bank will mobilize resources from the GEF and the Prototype Carbon Fund (PCF) to support GHG abatement measures that simultaneously address poverty reduction and sustainable development goals. In the area of vulnerability and adaptation, where the decision on UNFCCC support is pending, the Bank will mobilize donor financing for a Vulnerability and Adaptation Facility (VAF) to better prepare for climate change. Over the medium term, the Bank will focus on improving the understanding of the potential impacts of climate change and identifying and implementing no-regrets measures to reduce vulnerability to current climate and climate change. Finally, the Bank will assist clients in building the capacity needed to deal with GHG abatement and vulnerability and adaptation.

Greenhouse Gas Mitigation

To provide a strategic focus for the Bank's work on the energy-environment nexus and to consolidate the gains of the decade-long association with GEF, in July 1999 the Bank's Executive Directors approved Fuel for Thought (FFT), an environment strategy for the energy sector (see box 4.1 in chapter 4). This strategy highlights the importance of getting the policy fundamentals right. In that context, it explicitly recognizes the need for helping clients to tackle global climate change by capturing win-win opportunities for improving energy efficiency and promoting distributed and off-grid electricity supply in rural areas, using clean technologies and fuels. In addition, the strategy recognizes that there are valuable opportunities beyond win-win interventions to combat regional and global problems; it calls for incorporating these opportunities in Bank programs to promote sustainable development and reduce the marginal cost of GHG mitigation through the use of external resources - particularly those of the GEF, or the PCF and the private sector resources stimulated by the carbon-trading mechanisms of the Kyoto Protocol.

FFT remains consistent with the Bank's evolving agenda in the energy sector, and will continue to underpin the work on GHG abatement, though the scope of support will be expanded. Support will be extended to include, in addition, sectors like transport, urban, environment, agriculture, and forestry. There can be tradeoffs between local and global environmental benefits. However, one of the Bank's key goals will be to identify and support GHG reduction when it is an ancillary benefit of improving the quality of life and/or achieving other development objectives at the local/national level; thus, these efforts will serve to initiate and consolidate low-carbon development paths. The interventions envisaged include:

- Energy sector reform and restructuring, which are key to improving supply and demand-side efficiency, as well as creating a level playing field for alternative energy sources, including renewables.
- Energy efficiency improvements and fuel switching (for example from coal to gas) can reduce urban and indoor air pollution, improve thermal efficiency, and reduce GHG emissions.
- Improving access to modern energy in rural or remote locations through renewable energy technologies for household lighting, water pumping, grain processing, small cottage industry, clinics, and schools—all of which yield direct economic and social benefits to rural residents.
- Reducing energy intensity in the transport sector—through land-use planning, traffic management, nonmotorized transport, and more efficient technologies—which has human health and livelihood benefits, especially for the poor, in addition to reducing GHG emissions.
- Forest regeneration through community participation with the aim of offering substantial economic benefits to millions of poor households, while increasing forest cover, sequestering carbon, and reducing pressure on natural forests.

Energy Environment Reviews (EERs) have been applied as an important strategic tool, often supported by the Joint UNDP/World Bank Energy Sector Management Assistance Programme (EMAP) (see box F.1). The Bank will continue to work with the GEF in identifying and supporting cost-effective GHG mitigation investments, increasingly stressing the need for synergy with national economic and environmental concerns in all climate change interventions. In addition, in contrast to past support for one-off projects, the Bank will support larger regional or global efforts to catalyze market development for GHG reduction:

- The Bank-GEF Strategic Partnership for Renewable Energy, will focus on long-term development of the most promising technologies and market opportunities for renewable energy, including grid-connected and off-grid technologies (see, for example, box 3.4 in chapter 3).

Box F.1

Energy environment reviews

EERs represent an extension of traditional Bank energy sector work by addressing the cross-sectoral environmental impacts associated with energy production and consumption at the local, regional, and global levels. EERs are an important tool in supporting the implementation of Fuel for Thought, the Bank's environmental strategy for the energy sector. Through their emphasis on upstream analysis, EERs aim to:

- Ensure that fuel and technology choices are considered before they are frozen in the context of specific project designs
- Maximize cost-effectiveness by examining pollution prevention/reduction options across the fuel supply and consumption chain
- Expand local participation and capacity building among analysts and decisionmakers

To date, most EERs have been motivated by local environmental concerns, but many activities simultaneously address local, regional, and global effects.

In Turkey, an ESMAP-supported initiative on key aspects of energy-environment/GHG strategy, for example, was largely motivated by a desire among decisionmakers to compare different options to mitigate GHG emissions; but the modeling effort also provided specific guidance on least-cost control strategies for sulfur and particulate emissions in the power sector.

ESMAP/CIDA-supported a regional study on *Cleaner Transportation Fuels for Air Quality Improvement*. This study examined the linkages between fuel quality, vehicle emissions, and air quality in the eight countries of Central Asia and the Caucasus. The study made recommendations for improving air quality and vehicular emission monitoring systems and for adopting improved fuel quality regulations and controls in the coming decade; it emphasized, in particular, the rapid phaseout of lead in gasoline and the possibility of harmonizing fuel quality requirements in the region. In addition to improvement in urban air quality, the proposed measures have implications for fuel and engine efficiency and CO₂ emissions.

In Mexico, an environmental strategy for the energy sector supported by ESMAP has assisted the Ministry of Energy in identifying pricing policy options for eliminating environmentally damaging subsidies in the power sector. In parallel, the Ministry of Environment has concentrated on vehicle emissions standards and the improvement of vehicle emissions performance. The EER has helped improve communications between Mexico's energy and environment ministerial authorities, and opened the Bank's previously limited dialogue on key policy and structural issues in the energy sector.

- The Bank will explore opportunities for a more programmatic approach to improving energy efficiency. Through the support of the GEF, ESMAP, and other donors, the Bank will look to replicate the model of support for energy efficiency improvements in China.
- The GEF's two new Operational Programs provide opportunities to respectively promote:
(a) environmentally sustainable options in the transport sector; and (b) sustainable development of multiple ecosystems, including forestry, which has a significant carbon sequestration potential, in addition to local benefits.
- The PCF is designed to show how a market for carbon emission credits for developing countries can work under the Kyoto Protocol's proposed flexible mechanisms. The PCF, a public-private partnership, will develop best practices in the identification and implementation of development projects that can utilize these mechanisms to lower the carbon emissions from developing countries.

Vulnerability and Adaptation

Experience over the past two decades suggests that vulnerability to extreme weather events (floods, droughts, storm surges, and so forth) has increased markedly. Reflecting in part the rapid growth of population and in part the pattern of development itself, losses in term of life, displacement, and damage and destruction of natural, social, and physical capital have all increased, accompanied by relative losses that are greater for the poor in poorer countries. Now, with the projected global warming and the associated higher probabilities of intense precipitation and more extended dry periods, the frequency and severity of droughts, floods, and storm surges are expected to increase along with the vulnerability of the developing countries; these developments will further exacerbate the problems related to climate that face these countries today.

Many of the countries that are most vulnerable to climate change are already close to the margin of tolerance with respect to current climate variability. Hence, the most important measures that will enable these countries to deal with future climate conditions are essentially the same as those needed to deal with the current climate. The Bank, therefore, will focus on reducing present day climate vulnerability through the implementation of no regrets measures. However, as there is no single best or universal approach to adaptation, learning by doing will be a critical aspect of the Bank's work over the short to medium-term.

Drawing upon activities of partners including the Bank's Disaster Management Facility, the following initiatives are proposed:

- Supporting vulnerability assessments to better understand past weather events and their physical, economic and social consequences, and to develop and test indicators of current and future vulnerability.
- Strengthening regional institutions to improve climate forecasting and verification systems and to promote more effective communication and use of climate information at the national and local levels.
- Evaluating the longer-term consequences of disasters to increase awareness among policymakers of the potentially serious threat that variations and changes in climate pose to sustainable development as well as of the potentially high economic and social returns that investments in vulnerability reduction can yield.
- Conducting hindcasting studies of at least two countries and two projects to determine whether incorporating climate risks explicitly would: (a) require a fundamental change in macroeconomic and sector policies pursued to date or a simple realignment and phasing of priorities; and (b) have yielded additional benefits, given the past and actual climate variability.
- Developing a framework for incorporating climate risks in economic analyses, with a view to reorienting the Bank's project work towards adaptation.
- Supporting pilot initiatives in vulnerable countries that support community level activities aimed, among others, at: reforestation, conservation and restoration of wetlands; protecting mangroves and coral reefs; and strengthening local institutions to reduce income-related risk and, thus, improve the capacity of the poor to cope.
- As noted above, because developing countries are unwilling to borrow for adaptation, the Bank will establish, with donor financing, a VAF to support the short- to medium-term strategic priorities; the aim of such a measure would be to better prepare both the World Bank Group (WBG) and its clients in dealing with climate change. To leverage the VAF resources and ensure that the output from the activities supported by them are fully integrated into the Bank's mainstream operational work, the three approaches are proposed. The focus on vulnerability in the 2000/2001 World Development

Report has already placed the issue squarely on the Bank's agenda; data on vulnerability in the areas of health, environment, infrastructure, and social protection are already being collected for the Poverty Reduction Strategy Papers. The vulnerability assessments proposed would complement this work by generating good practices that could be incorporated into the broader PRSP agenda.

- For studies and pilot initiatives that are country specific, a cost sharing arrangement with the country team is envisaged to enhance the prospects of buy-in. In this regard, the Environment Department will work closely with the Disaster Management Facility on continuing operations (Honduras and Mozambique). This would allow for the integration of no regrets pilot initiatives into the ongoing operations and reduce their monitoring and supervision costs.
- For methodological work and studies, including vulnerability assessments, that have implications for Bank-wide work, VAF will cover the full costs. As much of this work will require specialized skills, the Environment Department will give priority to developing and strengthening partnership within both the Bank and the broader scientific community.

Capacity Building

The climate change agenda is relatively new and evolving. As a result, the generation and dissemination of relevant knowledge—through analytical work to plan, prepare and implement GHG mitigation measures and to manage climate change concerns more generally—are critical first steps in capacity building. As in the recent past, the Bank will continue to focus its support on providing hands-on experience through the following: methodological, technical and investment work to clarify how market mechanisms can benefit our clients; development of national policies to identify potential investment for possible future international cooperation; evaluating of options for reducing GHG emissions through sectoral planning; and upstream work in investment planning to identify options for mitigating the negative local, regional, and global environmental impacts of energy development. The scope of support, moreover, will be expanded to include, as well, vulnerability and adaptation. The following are illustrative examples of capacity-building activities related to climate change to be supported by the Bank:

- National Strategy Studies (NSS) Program. Since 1997, with the initial support of Switzerland and subsequently other donors, the Bank has assisted 26 client countries to develop national policies on Joint Implementation and the Clean Development Mechanism (CDM). The Bank will also help these countries to identify potential investments for possible future international cooperation for climate change mitigation.
- The PCF, through financial support for project specific investments, will help create the market infrastructure necessary for CDM projects. It will also help in developing a knowledge base to maximize the value of its experience by collecting, analyzing, and disseminating information and knowledge to a broad range of stakeholders.
- To assist Sub-Saharan African countries take advantage of CDM, a CDM-Assist Program, funded by ESMAP and a number of bilateral donors, is being prepared.
- As part of the identification and preparation of adaptation projects under the UNFCCC mandate, the Bank will help mobilize resources to assist clients prepare for adaptation to the impacts of climate change.
- Plans are being developed for training through the World Bank Institute (WBI) to support activities for assessing vulnerability. Such training would be offered on a regional basis through seminars, workshops, and short training courses.

Within the Bank, compliance with Operational Policies and Bank Procedures OP/BP 4.01 on Environmental Assessment and OP/BP 10.04 on Economic Evaluation of Investment Operations, requires assessment and consideration of the lifetime GHG emissions from Bank-supported projects in their design

1 and selection. This would be facilitated through the development of methodologies and training for Bank
2 task teams through the WBI.

3 **Implementation and Resources**

4 *Implementation:* Our goal is to integrate the agendas for GHG mitigation, and for vulnerability and
5 adaptation into the Bank's mainstream operational work. Progress has been made in the area of GHG
6 mitigation, but more so at the project than at the policy level. We will, therefore, work closely with
7 ESMAF on energy and environment reviews, which respond to the need for sectoral environmental
8 assessments well up-stream of lending operations.

9 In the area of vulnerability and adaptation to climate change, implementation of the strategic priorities is
10 aimed at learning by doing to generate good practices and to disseminate these widely to clients both
11 within and outside the Bank. In this regard, we will focus specifically on developing analytical and
12 methodological tools that have implications for Bankwide work; in addition, we will collaborate with the
13 Regions, and particularly with the Disaster Management Facility, on pilot initiatives and on monitoring
14 their implementation.

15 *Resources:* The resource requirements for the implementation of the strategic priorities related to climate
16 change are not expected to be demanding. The resources required for the work on GHG mitigation are
17 financed fully by the GEF and no change in this arrangement is envisaged. The only additional resource
18 requirements, therefore, are for the implementation of work on vulnerability and adaptation. It is expected
19 that a significant portion of these requirements will be covered by the VAF; but these resources would
20 have to be supplemented, in part, through the prudential use of consultant trust funds to mobilize
21 specialized skills and, in part, through the Bank budget for staff time.

ANNEX G

IFC's Approach to Environmental and Social issues: A Roadmap to Sustainable Investment

The approach of the International Finance Corporation (IFC) on environmental and social issues in project finance follows closely that of its sister body, the World Bank.

IFC's Strategy

IFC's approach to environmental and social issues in project financing is evolving from assuring compliance to the development of a sustainable development strategy, which is outlined in the "strategic directions" paper recently submitted to Committee of Development Effectiveness (CODE). This annex outlines IFC's vision of sustainable development and the substance of its approach.

IFC's management of environmental and social issues in investment projects has evolved over time to serve the particular needs of IFC's private sector focus while recognizing its status and responsibilities as a public institution. Its strategy has been built around two primary objectives.

First, IFC seeks to achieve a high level of environmental and social performance in its investments through the development and implementation of a robust management system. This system ensures the consistent application of its environmental and social policy and procedural framework. This includes building adequate capacity within financial intermediaries distributing IFC funds.

Second, IFC seeks to pursue investments with specific environmental benefits that are financially viable and to innovate in the area of "near-market" opportunities through appropriate use of commercial and concessional funding.

IFC believes that these foundations provide a firm basis on which to build a sustainable development strategy that seeks to maximize the overall financial, economic, environmental, and social return on its investments.

IFC's Management System for Environmental and Social Issues in Investments

IFC's management system has the following integral components:

- Policy and procedural framework
- Environmental and social analysis of projects
- Capacity and resources
- Quality Project Management
- Management/corrective action plans
- Investment Agreement conditionalities
- Portfolio supervision
- Disclosure, consultation, and transparency
- Accountability mechanisms

1 ■ System feedback.

2 IFC has a well-developed policy and procedural framework. IFC's environmental and social safeguard
3 policies are closely harmonized with the Bank's safeguard policies, with minor adjustments to adapt them
4 to the private sector context of its operations. IFC applies the World Bank Group's *Pollution Prevention
5 and Abatement Handbook 1998* (PPAH) to its investments, with high-level management clearance
6 required for any variation (see box 3.6 in chapter 3). To provide guidance for sectors in which IFC invests
7 for which no guideline is available under PPAH, IFC has developed its own guidelines. A full list of
8 IFC's environmental guidelines is available online at
9 <http://192.86.99.148/enviro/enviro/pollution/guidelines.htm>.

10
11 The Environmental and Social Review Procedure (ESRP), 1998, guides staff in the application of the
12 policy and guideline framework to the environmental and social analysis and processing of all
13 investments. The ESRP contains important developments in IFC's approach to financial intermediary
14 investments, local consultation and disclosure requirements, and the improved integration of social
15 analysis into the environmental assessment process. The ESRP requirements are integrated into IFC's
16 business processes. Early environmental and social input to investment reviews is required, and clearance
17 of environmental and social terms of IFC investment and project documentation occur with full
18 participation of the environmental and social development specialists. For an in-depth look at the terms of
19 IFC's ESRP is available online at <http://www.ifc.org/enviro/EnvSoc/ESRP/esrp.htm>.

20
21 While environmental and social professionals are very much part of the project teams, a direct line report
22 from the Director of the Environment and Social Development Department (CES) to the Executive Vice
23 President maintains independence from operational line management. The overall cohesion of
24 environmental and social inputs is ensured through a single clearance function, with specialists of all
25 disciplines integrated into teams that service investment sectors and regions. IFC believes that
26 environmental and social issues are equally important, mutually supportive, and benefit from joint
27 management oversight. IFC management has also supported CES through the provision of resources to
28 build a significant environmental and social management capacity.

29
30 As the need for environmental and social review of IFC projects has increased, so has the number of
31 specialists within the department. The number now working on project review for the Environment
32 Division has grown to 39 (full-time equivalent positions). This has prompted the need to develop and
33 implement a *Quality Project Management (QPM)* system to ensure that specialists (including those on
34 mission or based in the field) have access to the appropriate management tools in order to make informed
35 decisions and in doing so, promote consistency in project processing. In 1998, the Environment and
36 Social Review Unit commenced development of QPM, a program that provides all specialists with a
37 reference manual and a work flow that prompts key actions during the project cycle. An internal audit
38 program regularly reviews the performance of both the system and the individual project managers. QPM
39 has been operational for direct investment projects since March 2000. Financial Intermediary projects are
40 being incorporated in 2001.

41
42 It is often the case that projects, particularly for refurbishment or expansion require time and investment
43 to bring them to an acceptable standard. Projects may produce impacts (such as resettlement) that require
44 monitoring and action over an extended period. Financial Intermediary projects commonly require the
45 development of management systems and the building of capacity within the client organization. These
46 situations are dealt with through appropriate action plans, such as for environmental management,
47 resettlement, or corrective action.

48
49 Environmental and social investment agreement conditionalities commit the project sponsor to comply
50 with IFC policies and guidelines and, where appropriate, to a specific action program. IFC's own capacity

1 building initiatives for financial intermediaries are leveraged through strategic partnerships with
2 International Finance Institutions (IFIs), business schools, and others to deliver training and assistance to
3 clients.

4
5 IFC monitors the environmental and social performance of projects as part of its portfolio supervision.
6 This includes review of adherence to agreed environmental or corrective action plans, other specific loan
7 covenants and reporting requirements, and the development of environmental and social management
8 capacity. A risk rating for direct investments based on a range of criteria is used to apportion supervision
9 resources to areas of highest priority, and a similar risk rating is under development for financial
10 intermediaries. Environmental and social risk analysis is routinely integrated into Investment Department
11 portfolio reviews.

12
13 IFC relies on its disclosure policy and public consultation standards to ensure that interested parties have
14 an opportunity to be heard and exert influence with respect to specific projects. IFC recognizes the
15 importance of maximum transparency. Further, IFC's status as a public institution requires that IFC
16 establish a significant accountability mechanism to its member countries and civil society, particularly
17 with respect to its environmental and social performance.

18
19 Perhaps the most innovative aspect of IFC's environmental and social accountability is the establishment
20 of a Compliance Advisor/Ombudsman (CAO), an office designed to provide a nonjudicial, practical,
21 problem-solving approach to contentious aspects of projects. Independent of IFC and MIGA
22 management, this office reports directly to the president of the World Bank Group. The CAO has three
23 roles: (1) responding to complaints by persons affected by projects and attempting to resolve the issues,
24 using a flexible, problem-solving approach; (2) providing independent advice to the president and senior
25 management of IFC/MIGA; and (3) overseeing audits of IFC's and MIGA's environmental and social
26 performance, both on systemic issues and in relation to sensitive projects.

27
28 Feedback on the overall efficacy of the management system is synthesized from a number of sources,
29 including Operations Evaluation Group analysis; CAO investigations and feedback, Lessons of
30 Experience analysis; client surveys and interaction; and Civil Society representations, including NGOs. A
31 further policy/procedural review by the CAO office is anticipated in late fiscal 2002.

32 ***IFC and environmental projects***

33 Aside from seeking to mitigate and manage the impacts of its traditional projects, IFC has also established
34 units within several Investment Departments to focus on environmental projects. These include the
35 Utilities Group within the Infrastructure Department, which finances water, wastewater, and solid waste
36 management projects; and the Renewable Energy and Energy Efficiency Team within the Power
37 Department. In addition, the Privatization Policy and Transactions Groups within the Private Sector
38 Advisory Services Department have developed extensive experience in the area of water and wastewater.

39
40 In 1996, IFC created the Environmental Projects Unit (EPU) to act as a catalyst and incubator for projects
41 with specific environmental benefits. In developing projects for IFC's own account, the EPU operates as a
42 cost center that provides technical analysis and financial structuring services in order to prepare projects
43 for funding by the relevant Investment Departments. More recently, the EPU has begun to encourage the
44 identification and implementation of eco-efficiency improvements in mainstream IFC projects. In
45 supporting projects with environmental benefits, the EPU draws on IFC's own investment resources and,
46 where appropriate, concessional funding from sources such as the Global Environment Facility (GEF)
47 (see, for example, box 2.7 in chapter 2). The EPU also undertakes special initiatives such as identifying
48 projects to reduce greenhouse gas emissions under the Kyoto Protocol. For more information on the
49 activities of the EPU, visit its website at <http://www.ifc.org/ept>.

Looking ahead: The transition to sustainability

IFC's mission is to help reduce poverty and improve the quality of life by supporting the creation and expansion of a vibrant private sector. Private sector development has several dimensions, including financial, economic, social, and environmental. Development is sustainable if progress in one dimension does not come at the expense of the others.

IFC is launching a sustainability initiative that has the potential to significantly increase the development impact of its activities. Sustainability for IFC means incorporating a more opportunistic, added-value approach that goes beyond compliance, particularly in the environmental, social, and corporate governance aspects of its work. It means complementing the existing regulatory-based approach to environmental and social issues with one which is market-based and incentives oriented. This evolution is directly enabled by what is now a solid foundation of environmental and social management systems.

As we move beyond compliance, IFC will not compromise its minimum standards, but recognizes that achieving an appropriate balance between the dimensions of sustainability (financial, economic, social, and environmental) will depend on the circumstances and locality of the particular investment. This is not a one-size-fits-all philosophy, but an intention to operationalize sustainable development in a way that maximizes our overall development impact and role.

The sustainability initiative will manifest itself through IFC's investments, IFC's role as a leader in the financial sector, and its footprint in terms of the environmental and social impacts of IFC's physical presence and activities. IFC is currently assessing its approach and what would constitute an indication of success in each of these three areas of activity.

Sustainability, in its financial and economic dimensions, has always been at the core of IFC's approach. IFC is a long-term, not a short-term, financial investor, and it avoids investments where financial returns are predicated on unsustainable economic distortions. It also continually looks for opportunities to help clients and member countries create additional financial and economic value. The same approach is being extended to environmental, social, and corporate governance issues. IFC has developed world-class expertise in these areas and is now ready to move beyond its "do no harm" approach on environmental and social issues to one that more explicitly looks for opportunities to add value and materially enhance the positive development impact of a project or undertaking.

A primary focus will be on how actions that create environmental or social value or improve corporate governance can also create financial value for our clients. This financial value can take the form of tangible cost reductions, through eco-efficiency or cleaner technology; improved revenues, through better access to global supply chains, developing local supply chains, or the "branding" of products; reduced risks, through for example strengthened and positive interactions with the local community; or better access to financing. Many private firms in developed countries recognize this convergence of environmental and social value and financial value, and a few in developing countries are beginning to as well. As regulations and consumer behavior continue to change, these opportunities will proliferate.

The challenges of the transition to sustainable private sector development are large, but many companies are recognizing that meeting the challenges adds value in many areas of their business through customer and staff loyalty, product differentiation, resource efficiency, risk reduction, and innovation.

IFC has a role in helping to transfer emerging private sector sustainable practices to the developing country context in which it operates. It is not an easy task, but it is a role that IFC has performed in many other areas in the past. We believe that sustainable business practices converge with good management and that as a result sustainable businesses will be the long-term winners. As investors, maximizing long-

1 term shareholder value is one of our goals. It simply makes commercial sense—any business that puts its
2 supply chain at risk or ignores reputational issues is not acting in the interests of its shareholders, let alone
3 other stakeholders.

4
5 This is an area where IFC is already emerging as a leader amongst the private sector investment
6 institutions operating in the developing world, and our advice is increasingly sought by
7 other international financial institutions, commercial banks, and businesses. IFC guidance documents on
8 the value of public consultation and community development are landmark publications and widely
9 referred to by practitioners and businesses. They are available on-line at
10 <http://www.ifc.org/enviro/Publications/index.html>.

11
12 The building blocks of this transition are currently being put in place through internal discussions and
13 substantive consultations with all stakeholders are anticipated in the months ahead. We believe the
14 journey to sustainability will bring many benefits to our clients. Further, we believe it will also benefit
15 IFC. It will differentiate IFC from other financial institutions in our ability to add value; it will motivate
16 our staff; it will allow us to operate in high-risk areas with renewed confidence in our role and ability to
17 achieve sustainable outcomes; and, most important, it will contribute to our mission to reduce poverty and
18 improve people's lives.
19
20

ANNEX H

Multilateral Investment Guarantee Agency

Established as a member of the World Bank Group in 1988, the Multilateral Investment Guarantee Agency (MIGA) provides (a) an investment insurance (guarantee) program, which offers political risk coverage to foreign investors from any of its member countries; and (b) a technical assistance program, which assists developing member countries in attracting foreign direct investment. MIGA neither invests, grants, nor lends money to investors, nor does it propose or design projects. Like any other form of insurance, investors and lenders who want this coverage pay premiums.

MIGA's founders required the institution to make sure that the foreign investments that it insures contribute to the development of the host country. In order for investments to provide development opportunities for local communities, the projects must be environmentally and socially sound. Therefore, in carrying out its mission, it is MIGA's policy that all the foreign investments that it insures are carried out in an environmentally and socially responsible manner.

Environmental Policy

Since MIGA issued its first insurance contract in 1990, it has been applying World Bank environmental policies and guidelines to MIGA projects, often with the environmental counsel and advice of the International Finance Corporation (IFC). In fiscal 1998, MIGA began drafting its own specific environmental assessment and disclosure policies, which reflect its business as an insurer of foreign investments. These draft policies, and the procedures for implementing them, were the subject of extensive discussions by MIGA's Board and management. The Board approved MIGA's environmental assessment and disclosure policies and procedures in May 1999; they took effect with all new applications received in fiscal 2000. The policies and procedures are available on MIGA's web site (<http://www.miga.org>).

MIGA's Environmental Assessment Policy is the basic framework for MIGA's evaluation of the environmental and social soundness of a proposed project. The policy requires the project sponsors to carry out an environmental assessment (EA) of the project. As explained in the policy, the level of detail of this assessment varies with every project, and depends largely on the nature, magnitude, and significance of the project's impacts on the environment and local communities.

MIGA then uses this assessment as the basis for its review and evaluation. In carrying out this review and evaluation, MIGA considers the following features of the project:

- Ability to comply with the appropriate guidelines found in the World Bank Group's *Pollution Prevention and Abatement Handbook 1998*
- Compliance with host country environmental requirements
- Consistency with MIGA's safeguard policies regarding natural habitats, forestry, pest management, dam safety, projects on international waterways, resettlement, indigenous and vulnerable peoples, and cultural resources and property.

Application of the safeguard policies is focused on impact avoidance, minimization, and mitigation, and links impacts and benefits/compensation to the findings of the EA. Thus, MIGA has been applying an integrated approach to the safeguard policies, positioning the EA process (and the EA policy) as a key integrator. In this approach, the safeguard policies become the norms by which one evaluates whether

the proposed mitigation/compensation measures identified in the project's Environmental Impact Assessment (EIA) are reasonable and acceptable.

In its application of the safeguard policies, MIGA must ensure their applicability to private sector projects. In particular, application of the policies must recognize that (a) compensation, benefits, and mitigation measures must be project-oriented; (b) acceptable measures of compliance must in some form be clearly linked and identifiable through contract provisions, such as implementation of the project's proposed Environmental Action Plan, as appropriate to policy-related issues; (c) approximately 70 percent of MIGA's guarantee holders do not have a majority or controlling interest in a project, and are thus often constrained in their ability to change project design or implementation; and (d) the private sector has a partnership role with government and local communities in local development. Moreover, application of safeguards must clearly consider MIGA's narrowly defined role as an insurer with no ability to finance project improvements, and that the typical timing of MIGA's involvement in the project's development process occurs after approval of the EIA by the host country.

MIGA achieves harmonization in its application of the safeguard policies through several mechanisms. First, environmental review, clearance, and monitoring functions are centralized in its Evaluation Department, which is independent of the Guarantees Department. Second, MIGA's Environment Unit maintains frequent contact with IFC's Environment Department at the staff level, in order to share learning experiences and discuss emerging policy-related issues. Third, the application of the policies is integrated through the EA process, which provides an appropriate framework for assessing the "do-no-harm" spirit and intent of the policies and for evaluating the development benefit achieved through the proposed project-specific impact mitigation programs. Fourth, underwriting must take into full consideration the overall World Bank Group strategy, as proposed not only in the Country Assistance Strategy, but also in appropriate sector strategies such as energy, forestry, and environment. Consistency of the proposed investment guarantee with these strategies is then discussed at the Board level. Finally, the Board itself has a critical role in concurring with a decision to offer a guarantee, thereby serving as a final authoritative check on the consistency of MIGA's proposed action with World Bank Group strategies.

If the project is expected to have significant adverse environmental or social impacts that are particularly sensitive, MIGA requires the sponsors to carry out meaningful and timely consultations with directly affected local communities to discuss project-related environmental and social issues. Such consultations are particularly critical if the project requires resettlement or land acquisition involving vulnerable people. These consultations are not only key components of "process," as required by the safeguard policies, but also provide outcomes that may be used as measures of success in the implementation of the project and compliance with the safeguard policies.

Once a project has been reviewed and evaluated by MIGA for its development effects, including environmental and social soundness, MIGA prepares a report for Board discussion prior to providing political risk insurance. Much of this report focuses on the expected development effects of the proposed investment in the host country and the manner in which environmental and social issues have been addressed.

From an environmental and social perspective, the value of MIGA involvement in a project includes the following:

- MIGA's involvement brings a high degree of confidence that the project's design and implementation will be in accordance with relevant World Bank Group environmental guidelines and application of the safeguard policies to project-specific private sector investments.

- This involvement is particularly critical in those circumstances where governmental agencies, rules, or regulatory frameworks are lacking, ineffective, or tainted by corruption.
- MIGA's requirement for warranties and representations of compliance, the ability to monitor performance, and the ability to cancel a contract unilaterally or to deny a claim in the event of noncompliance add value to project implementation.

Evaluation

MIGA has an evaluation program that regularly selects projects from the agency's portfolio to compare the development effects that were initially expected with what actually happened. In the process of evaluating development effects, environmental and social concerns play a major role. Post facto evaluation of environmental performance is rated along with the other dimensions of development, using MIGA's environmental guidelines and safeguard policies as a benchmark for performance. This program, along with monitoring reports, site visits, and independent audits, are valuable tools for tracking MIGA's contribution to development.

Strategic Directions

MIGA's role in facilitating appropriate foreign direct investment through its guarantee program and technical advisory services complements the development roles of the IFC and the IBRD. In addition to ensuring that the investments it insures provide development benefits to the host country and local communities, MIGA seeks to support investments that provide significant environmental and social benefits.

Environmentally and socially sustainable development is not possible without individual opportunities for income and a sustainable livelihood. Ultimately, the key weapon in the battle against poverty is employment. In every country in every region in which MIGA has facilitated investment, the overwhelming message that surfaces from local communities during public consultations is the keen desire for employment. Even in societies that value traditional lifestyles, it is generally recognized that some forms of employment and income are needed to maintain families and traditions intact. MIGA's contribution is to facilitate environmentally and socially sound foreign investment that provides employment or the critical infrastructure needed to encourage employment opportunities.

ANNEX I

The Environment Strategy and the World Bank's GEF Program

Since the 1992 UN Conference on Environment and Development, the Global Environment Facility (GEF) has emerged as a facilitator and a funding mechanism for integrating global concerns into the development process. After a three-year pilot phase, the GEF was restructured in 1994 to provide for universal membership with greater transparency and participation in its affairs, and to serve as the financing mechanism for the global conventions on biodiversity and climate change. It also supports the objectives of the Convention to Combat Desertification—to the extent that they are impacted by actions under the other two conventions. In addition, the GEF has been designated to become the financing mechanism for the newly established Convention on Persistent Organic Pollutants. Together the United Nations Development Programme (UNDP), the United Nations Environmental Programme (UNEP), and the World Bank (WB) are serving as implementing agency for the GEF (see World Bank 2000e for a detailed review of the World Bank's global environmental work program, including that for GEF).

GEF assistance currently covers four focal areas: biodiversity, climate change, international waters, and the ozone layer. The Bank's GEF program is dominated by projects focused on biodiversity and climate change, which together account for more than 75 percent of the WB-GEF grants. Over the last decade, the WB as an implementing agency for the GEF has committed close to \$1.3 billion in grant funding to over 80 of its client countries for targeted global environmental objectives in 192 projects. These funds have catalyzed another \$6.0 billion in cofunding, including \$1.5 billion in funds from the World Bank Group (WBG).

The demand for grant funding through GEF is rising. The WBG's current pipeline of project concepts eligible for GEF consideration stands at an all-time high of close to 130 projects, excluding medium-sized projects, for a total estimated GEF funding of about \$1.6 million. This compares with \$230 million in average annual GEF commitments for WB-GEF projects over the last five years. Under these circumstances, it would be prudent for the WB to plan on demand from its client countries for GEF project funding to continue to exceed the GEF resources available. As a result, the further development of the WB's GEF program should use available GEF funding more strategically, matching GEF's corporate priorities with opportunities for mainstreaming the global environmental agenda and GEF in the country assistance dialogue.

The Role of the WB-GEF Program in the Environment Strategy

Against this background, how can the Bank's GEF program effectively support the objectives of the Environment Strategy? What opportunities are there to further strengthen the program's contribution to these objectives? And, how can these opportunities be pursued through the design and implementation of the Environment Strategy itself?

The Bank's Environment Strategy emphasizes the linkages between environmental conditions and human welfare, in particular health, livelihoods and vulnerability of the poor. It acknowledges that while environmental conditions that impact human welfare ultimately manifest themselves locally, their origins extend to the regional and global levels. Degradation of transboundary ecosystems, terrestrial or aquatic, have important local economic and social impacts. Available projections show that local costs to the

1 Bank's client countries of continued deterioration of the global commons are likely to be substantial.¹
2 Hence, the preservation of the regional and global commons has to be an explicit objective of a strategy
3 for promoting sustainable development and poverty reduction over the medium to long term.

4 The WB's GEF Program can play an important role in implementing the objectives of the Environment
5 Strategy in four main ways. *First*, it can provide a powerful extension to other WB instruments to help
6 address "the quality of the regional and the global commons." *Second*, it can generate local environmental
7 benefits in the pursuit of global environmental benefits and through mobilization of associated funding.
8 *Third*, it can offer modalities, not readily available under conventional WB lending, for engaging NGOs
9 and other parts of civil society in the country dialogue on environmental management. *Fourth*, it can
10 support the piloting of innovative ways for sustainable natural resource management with local-to-global
11 environmental links.

12 ***Extending the Bank's ability to support global and regional issues***

13 The Bank's lending and nonlending for national sustainable development can generate important and
14 complementary regional and global environmental benefits. For example, support for energy pricing
15 reforms will reduce greenhouse gas emissions through more efficient energy use and incentives for
16 renewable energy development. Forestry sector development based on policy and institutional reform
17 will contribute to the conservation and sustainable use of biodiversity in important ways.

18 However, going beyond such complementary opportunities will require compensation from the global
19 community, which in effect would raise the rate of return on country investments. International resource
20 transfers have to perform that function as long as the markets for trading global environmental services
21 are "missing." GEF was established to do just that—to underwrite and catalyze resource transfers to meet
22 the costs of actions with global environmental objectives that would not have been pursued in the absence
23 of that "global premium." As a GEF implementing agency, the WB remains committed to effectuate such
24 transfers, wherever they are consistent with the country assistance dialogue.

25 At the regional level, riparian countries linked to transboundary terrestrial or aquatic ecosystems are
26 unable to capture the full value of the environmental services that they can potentially create. This
27 constrains action to address environmental degradation of such threatened ecosystems, while important
28 segments of the world's poor depend on these resources for their health and livelihood. With access to
29 GEF resources, the WB is able to help riparian countries and stakeholders agree and act on regional
30 environmental priorities. For example, the Bank works with the GEF and other partners to support the
31 development and implementation of regional conventions or agreements for the management of
32 international river basins, shared lakes, regional seas, and shared groundwater aquifers.

33 ***Leveraging actions for improved local environmental conditions***

34 GEF-funded activities, while justified with respect to expected global environmental benefits, also
35 generate important benefits to the local environment and economy. For example, domestic and global
36 environmental benefits frequently converge in the conservation and sustainable use of biodiversity and
37 their ecosystems. In India, for example, a blend of GEF and IDA resources is facilitating a change in the
38 management of protected areas, encouraging foresters to work with local communities and seek solutions
39 that address both conservation and community needs. In such cases, GEF project funding can be an
40 important way to help directly support health and local livelihood benefits and reduce losses of ecosystem

¹ According to the *Third Assessment Report of the Intergovernmental Panel on Climate Change* (IPCC 2001), adverse climate-change impacts would amount to losses of at least a few percent of the global GDP, and that the effects of climate change are expected to be greatest in developing countries in terms of loss of life and relative effects on investment and the economy.

1 services. Such local benefits are frequently magnified by GEF's ability to leverage client country and
2 donor investment decisions.

3 The energy sector provides another example of global to local linkages. In China, access to \$100 million
4 of GEF resources to help accelerate energy conservation and renewable energy development was an
5 important consideration in China's decision to borrow regular Bank resources for these purposes. The
6 WB-GEF Fuel Efficient Boilers Project is transferring clean-coal boiler technologies to China, which will
7 improve air quality and people's health in all the major industrial areas while reducing carbon emissions
8 (see box 3.4 in chapter 3). The WB-GEF Second Beijing Environment Project, which is designed to
9 convert at least 2,500 of the city's coal-fired boilers to clean natural gas, is expected to reduce carbon
10 emissions by 2.5 million tons per year and sulfur and particulate emissions by 800,000 and 550,000 tons
11 respectively over 20 years.

12 ***Facilitating the engagement of NGOs and civil society***

13 One of the most important developments of the last two decades has been the emergence of a strong NGO
14 movement. NGOs today represent a powerful force providing technical assistance and policy advice to
15 governments and societies all over the world. The Bank has strengthened its capacity to engage NGOs
16 effectively, but until recently lacked meaningful tools to support them directly.

17 GEF's program for medium-sized projects has provided a way forward.² There are now 45 such projects
18 in 29 countries under implementation, involving \$34 million in GEF funding, and another 50 project
19 proposals at various stages of preparation. The clear majority of these projects effectively involve NGOs
20 in project preparation and/or implementation and often support highly innovative approaches to the
21 sustainable use of biodiversity. Examples include establishment of a new communal reserve to be
22 managed by indigenous people in Vilcabamba, Peru; sustainable biodiversity management in the
23 agricultural landscape and mountain meadows of Slovakia; and incentives to farmers in El Salvador to
24 maintain traditional systems of biodiversity-friendly coffee production under forest cover.

25 ***Promoting innovative solutions to financial sustainability of ecosystem management***

26 The GEF operational strategy puts a premium on finding new and innovative ways of supporting
27 management practices for natural resources that are environmentally friendly and globally replicable. In
28 this context, the Bank has started to demonstrate effective use of GEF resources to promote the financial
29 sustainability of globally (and locally) sustainable natural resource management practices (see box I.1).

30 **Toward more Strategic Use of WB-GEF Resources**

31 The "quality of life" is closely linked to the "quality of growth," and "quality of the regional and global
32 commons" and alleviating poverty will not be sustainable in the long run if the global ecosystems
33 continue to deteriorate. From this perspective, all GEF projects can be said to contribute to
34 environmentally sustainable development and poverty reduction. GEF eligible interventions can also help
35 more directly, for example by reducing GHG emissions in ways that improve local air quality while
36 meeting energy demands. Clearly, some GEF funding opportunities, because of their design and choice
37 of technologies, have greater potential for such synergy. Focusing on these opportunities will help to
38 maximize the impact of the WB-GEF Program. Such targeting is particularly important whenever
39 demand from client countries for access to GEF resources exceeds available funds.

² The GEF Medium-Sized Grant Program (for amounts up to \$1 million) offers a streamlined and fast-tracked way of engaging all elements of civil society in the management of local environment resources linked to global benefit generation.

Strategic priorities for the WB-GEF program

Biodiversity: GEF grants aimed at the conservation and sustainable use of biodiversity have already started to diversify from their earlier emphasis on freestanding protected area management projects. The direction is toward landscape-focused interventions with strong links to rural livelihood (see, for example, box A.5 in annex A). Moving further in this direction would involve setting priorities that would:

- Generate multiple benefits (social, ecological, and economic) and have strong and explicit health, livelihood, or vulnerability linkages.
- Build in protection and sustainable use of ecosystem services in mainstreaming development, for example by conserving wetlands for flood control or incorporating an ecosystem view in rural infrastructure development.
- Involve protected area management within a broader landscape context supporting mainstream rural goals related to poverty reduction, watershed management, and dryland and forest management.

Climate change: The close links between greenhouse gas (GHG) emission reductions and improvements to local air quality are at the center of the Bank's Climate Change Strategy (see annex F), which emphasizes the need for synergy with national economic and environmental concerns in all WB-GEF climate change interventions. The implementation of the Environment Strategy should therefore prioritize GEF assistance in the following areas:

- Renewable energy is often the least cost option for providing electricity and other energy forms in rural areas. Improving energy access for household lighting, water pumping, grain processing, small cottage industry, rural health centers, and schools has direct economic and social benefits to rural residents. It also results in improved indoor air quality whenever it replaces traditional biomass fuels.
- Management reforms, energy efficiency improvements, and fuel switching for municipal heating systems (in northern climates) can benefit the urban poor economically and will reduce urban and indoor air pollution, while improving thermal efficiency and reducing GHG emissions.
- In developing countries, the transport sector is responsible for a significant and generally growing share of energy consumption and urban air pollution. Measures to reduce energy intensity in the transport sector—such as land-use planning, traffic management, non-motorized transport, and more efficient technologies—can have human health and livelihood benefits, especially to the poor, in addition to reducing GHG emissions.
- Forest regeneration through community participation can offer substantial economic benefits to millions of poor households, while increasing forest cover, sequestering carbon, and reducing pressure on natural forests.

Box I.1

WB-GEF projects demonstrate innovative approaches to financing sustainable natural resource management with global and local benefits

Recovering the value of ecosystem services. The Costa Rica Ecomarkets project exemplifies how national and global environmental benefits can be effectively channeled to local communities. Small landowners receive payment for the environmental services provided in their lands when forest cover is maintained. The services include water quality (to be recovered from water utilities), scenic beauty (to be recovered from the tourism sector), carbon sequestration (to be recovered from carbon certificates), and biodiversity conservation (paid by the GEF on an incremental cost basis).

Trust funds for financing sustainability. One of the greatest challenges for conservation is how to cover the recurrent costs of parks and protected areas. Access to GEF resources has enabled the WB to help country partners establish several national trust funds. Trust funds in Bolivia, Mexico, Peru, and in Eastern Europe (Transcarpathian mountains) are helping to support protected-area networks. In Uganda, the Bwindi Trust Fund provides resources for national park management to strengthen protection of the gorilla populations. About 60 percent of the income is used to provide sustainable livelihoods for local people as an alternative to agricultural encroachment into the park.

1 *Transboundary water resource management.* Past WB-GEF projects have generally been poorly linked to
2 WB assistance for rural development and watershed management in river or inland-sea basins. The
3 importance of such links needs to be recognized in project preparation and design. In some cases, GEF
4 assistance for regional management of water utilization may be directly linked to national sustainable
5 development goals, as in the case of the Mekong River and Aral Sea projects. In other cases, GEF
6 assistance for management of forests and agricultural lands or the control of point-source pollution is a
7 means of managing the “quality of shared water resources,” which has direct links to rural livelihood and
8 health among riparian communities.

9 *Desertification and land degradation.* By supporting enhanced carbon management or conservation and
10 sustainable use of biodiversity, WB-GEF funding can positively contribute to more sustainable land
11 management, including control of land degradation and desertification. Local environmental and
12 developmental benefits from such interventions are expected to include improved health, nutrition, and
13 food security.

14 ***The mainstreaming challenge***

15 Global environmental issues and the role of the GEF can never be of equal importance to all countries.
16 There are, however, clearly circumstances where global environmental issues and GEF assistance would
17 be expected to play an important role. In these countries the successful pursuit of the above strategic
18 priorities depends on further progress in mainstreaming the global environment and the GEF in the
19 country assistance dialogue. At the level of country operations, such mainstreaming would be
20 demonstrated by an acknowledgment of the Bank’s role in assisting the country in implementing its
21 obligations under the global environmental conventions and in using GEF grant resources for such
22 purposes in the country dialogue. Where this occurs, we would also expect to find GEF funding
23 opportunities more closely linked to and blended with upstream IDA/IBRD project identification.

24 Recently completed Country Assistance Strategies (CASs) do not suggest that such expectations are being
25 met. Further progress will depend on the development of “in-house” capacity and incentives to pursue a
26 client dialogue that integrates global environmental concerns within national sustainable development
27 programs. Most important, little progress will be made unless there is a readiness and capacity on the
28 client side to address global environmental concerns and their links to national development objectives
29 and priorities.

30 ***Capacity building***

31 The capacity among Bank staff and management to understand the two-way linkage between global
32 environmental concerns and national sustainable development and poverty reduction needs to be
33 strengthened. This means increasing the understanding of both the technical issues involved (the impact
34 of climate change, loss of biodiversity and ecosystems, and trans-boundary water resources issues), their
35 effect on the options for national sustainable development, and the role of the GEF in helping to address
36 them.

37 To achieve this, action is required on three fronts. *First*, an enhanced environment knowledge
38 management system will help to broaden and deepen the awareness among staff and management of
39 global environmental concerns and their links to local economic and environmental issues. *Second*,
40 efforts must be stepped up to develop and disseminate the necessary analytical tools to measure the value
41 of environmental services and to analyze the effectiveness of options to mitigate environmental
42 degradation, including those related to carbon mitigation and sequestration. *Third*, the application of
43 these tools in relevant sector work and environmental assessments must be promoted. This means
44 addressing conservation and sustainable use of biodiversity in forestry and water sector work, and
45 examining CO₂ emission reduction options in local pollution studies or energy-environment reviews.
46 These actions need to form part of the Bank’s overall environmental training program.

Such strengthened in-house capacity needs to be employed to build local capacity among our client country institutions. This calls for technical training, strengthening of administrative and managerial functions in key agencies, and support for networking of professionals within and between countries. The objective should be to help senior officials, planners, and technicians, such as those in agricultural or forestry ministries/agencies, recognize the importance of conservation or sustainable use of biodiversity and carbon sequestration to sustainable production, or to enable energy sector planners and engineers to see the opportunity to use climate-friendly technology to reach their goal of local pollution management.

A supportive incentive framework

Building effective capacity to address the global environment and GEF in the country assistance dialogue requires a supportive framework of accountability and incentives as outlined in the main text of this report. Within this framework the following actions would help to specifically address the challenge of mainstreaming the global environment and GEF:

- WB units and staff responsible for the development of sectoral strategies for forestry, water, energy, and rural development should be held accountable for addressing links between relevant global environmental concerns and the objectives of such strategies, and the role of international financing mechanisms (Relevant bodies: GEF, Montreal Protocol (MP), and Prototype Carbon Fund (PCF)).
- Senior management should urge regional management to adopt strategic objectives for their GEF programs, including use of internal eligibility criteria for the allocation of GEF funds. Regional GEF strategies should form part of the regional environment strategies and their annual business plans. The latter would set out annual GEF program targets; accountability would reside with the country directors. Such targets would in turn be reflected in the region's internal WPAs and results agreements.
- Results agreements and performance evaluations need to be used systematically as an important tool for managers to manage and reward staff for implementing global environmental and GEF targets of regional environment strategies and their associated annual business plans.
- MDs in their regular meetings with Regional management should systematically follow up on progress in the implementation of annual business plans for Regional environmental strategies, including the GEF program. The ENV Sector Board should annually assess outcomes of the annual business plans, including their global environmental and GEF components, and provide comments to Regions on proposed plans.
- The Bank should move toward a competitive internal process for allocation of available GEF resources for project funding—between regions as well as within regions—that promotes a GEF portfolio that meets strategic priorities.
- Highly publicized awards for environmental excellence should include special awards for best performance in mainstreaming global environmental issues in country dialogue (country-director level) and in mainstreaming GEF in IDA/IBRD projects (Task-Manager level).
- The Bank should continue the process of streamlining and mainstreaming GEF into Bank processing and portfolio management; reduce transactions costs by building on current initiatives to promote a more programmatic allocation of GEF resources over longer time periods; ensure that the WB's new accounting, budgeting, and operations monitoring systems fully cover all WB-GEF products and needs; and work with the GEF Council to see how the external review and approval cycle can be further simplified and streamlined.

ANNEX J

Consultation Process and Feedback

In early May 2000, the World Bank initiated a broad-based consultation on the emerging Environment Strategy based on the Progress Report and Discussion Draft, *Toward an Environment Strategy for the World Bank Group*, and on the six draft Regional Environment Strategies (summaries of the regional strategies can be found in annex A; the full documents are available on the Internet at www.worldbank.org/environment/strategy).

Background

The discussion paper, *Toward an Environment Strategy for the World Bank Group*, outlined key development and environment challenges facing the Bank's client countries. It summarized some of the lessons learned by the Bank and its clients in the past, and laid out a framework and key principles for the Bank to focus its assistance on in addressing environmental issues. The report underlined the need to link the environmental agenda more closely with development goals, particularly poverty reduction. It identified three key development objectives to (1) improve environmental factors that adversely affect people's health; (2) enhance people's livelihoods through sustainable natural resource management; and (3) reduce peoples' vulnerability to environmental risks and natural disasters. The report also identified three areas of focus for Bank assistance: (1) integrating environmental considerations into strategies and actions for poverty reduction; (2) helping to establish conditions for sustainable private-sector-led growth; and (3) addressing regional and global environmental challenges.

The World Bank initiated the consultation process to hone the conceptual framework and regional strategies, and to improve our mutual understanding of the developmental and environmental challenges underlying the proposed framework. We also sought to identify new ways we could work together with our development and environment partners to reverse poverty and environmental degradation.

The Consultation Process

The consultation was comprised of workshops with client and donor countries, including representatives of government, civil society, private sector, and academia; a dialogue with several of our multilateral and bilateral partners; meetings with international NGOs; and a broad-based information dissemination and feedback process through e-mail and the internet.

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. Table J.1, at the end of this annex, summarizes the schedule of the formal consultation meetings. The Bank is grateful to the Government of Norway for its financial support to the African, Latin American, and South Asian consultations, the Governments of Japan, Sweden, and Switzerland for their support to several Regional meetings, as well as the Governments of Canada, Germany and the United Kingdom for their support of multi-stakeholder and donor meetings. Detailed reports of the consultation meetings and outcomes, mostly prepared by independent facilitators or record-keepers, are available on the Environment Strategy Consultation website on the internet at <http://www.worldbank.org/environment/strategy>.

A dedicated Environment Strategy Consultation link was established on the World Bank web site that contained the Discussion Draft, background papers, schedules, updates, links to open discussion spaces, e-mail contacts, and a questionnaire. On the web site, visitors could download strategy documents, access

various relevant links, subscribe to an electronic newsletter, provide comments directly to the environment strategy team, and respond to the Environment Strategy Questionnaire. Box J.1, below, summarizes the volume and nature of the site traffic and the countries from which queries and comments were received. Box J.2 describes the feedback received through the questionnaire.

The value of consultations was inestimable. They provided a forum for face-to-face discussions, promoted greater dissemination of information about the issues, and have led to a better understanding among the participants of our mutual concerns. Feedback was animated, thoughtful, and always challenging. Overall, there was a consensus that the environmental issues we are confronting worldwide are urgent, and that urgency should more visibly inform the work of the Bank and the Strategy.

Feedback

In general, there was broad support among those who gave us feedback for the conceptual framework outlined in the Discussion Draft, although there were some differences among participants. Conversations in developed countries tended to focus on broad concepts and global issues, whereas discussions in client countries tended to focus on local environmental concerns and concrete implementation issues. In some meetings, particularly in donor countries, a number of participants regarded growth, itself, as antithetical to environmental sustainability. In others, particularly in client countries, the general view was that environmental activities must be integrated with growth planning. Overall, the discussions could be grouped in three broad areas: (1) the development context; (2) the role and past performance of the Bank; and (3) specific implementation issues concerning the Bank's operations and environmental assistance.

Development context

Most participants agreed that environmental objectives need to be systematically linked with development goals, particularly poverty reduction. Many participants in both client and donor meetings preferred to use the concept of sustainable development as an organizing principle. A number of participants in developed countries were concerned that the Discussion Draft subsumed environment into poverty alleviation, and participants in workshops in Africa and Central and Eastern Europe felt strongly that the environmental objectives should be discussed in the context of quality of growth, rather than poverty alleviation alone. Although poverty was acknowledged as a pervasive problem, environmentally sustainable development was viewed as the key to resolving both environmental and poverty concerns.

The Discussion Draft referred to a broad definition of poverty that encompassed dimensions of opportunity, security, and empowerment, as defined in the World Development Report 2000/01. The Draft recognized that the sustainable use of natural resources is fundamental to long-term reduction of poverty. There was a common view among participants, however, that poverty reduction strategies have had a focus that is too narrow and short-term and have failed to adequately identify the environmental linkages.

Box J.1 Environment strategy consultation through the Internet

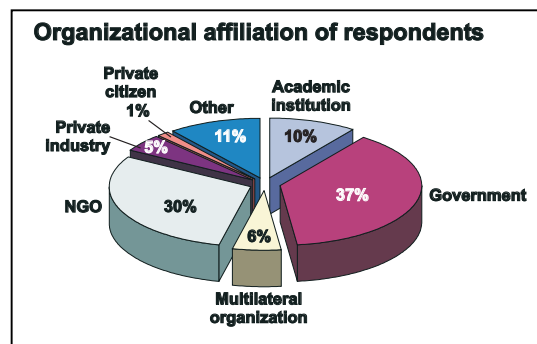
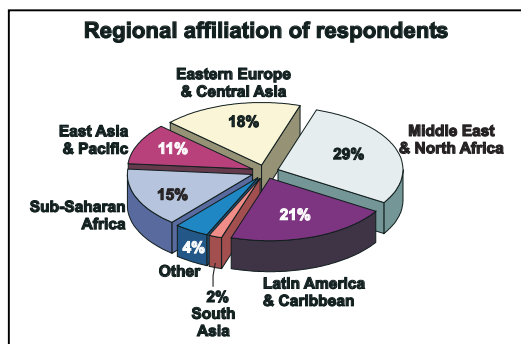
Between August 2000 and the end of January 2001, the Environment Strategy Consultation web site received nearly 35,000 download requests for various papers. Almost 15,000 people downloaded the strategy Progress Report/Consultation Draft, and more than 2,000 people from 98 countries registered by e-mail to receive future updates on the strategy. In addition to the Bank's Environment Strategy Consultation web site, the LAC and ECA Regions organized separate, but linked, regionally focused on-line discussions. By November 2000, the LAC web site itself had more than 2,000 visitors, had tapped a network of over 100 NGOs, and received on-line comments from 18 countries. In June 2001, the Environment web site will disseminate the final drafts of the World Bank Environment Strategy and the associated regional strategies. It will continue to provide a venue for future discussions on strategic directions for the Bank's environmental efforts.

Box J.2

Results of an environment strategy questionnaire

As part of the consultation process, more than 230 representatives of governments, NGOs, academia, and other members of civil society with a wide range of geographic, institutional, and professional backgrounds were surveyed through a multiple-choice questionnaire to collect standardized feedback on the key aspects of the proposed strategic framework and regional strategies. The questionnaire was available on-line on the environment strategy website and distributed at consultation meetings and workshops. The respondent group was not a representative sample, therefore the results are only for illustrative purposes.

The responses indicated broad support for the proposed strategy. Across all regions, about 85 percent of the respondents agreed or strongly agreed with linking environmental issues with poverty reduction, and the two largest groups of respondents—NGOs and the government—did not differ significantly on this issue. Support was similarly strong—about 85 percent—for the proposed development objectives: improving health, securing livelihoods, and protecting people from vulnerability to natural disasters. The strongest dissent—up to 15 percent—came from respondents in ECA, while the strongest support—100 percent—came from Eastern Africa.



More varied were the views of the role of the World Bank in developing markets for global environmental goods, such as carbon credits or payments for ecosystem services. Overall, about 72 percent of the respondents thought that the Bank should have a role in this area, while about 10 percent disagreed. There were strong regional differences, however. In EAP and MNA, for example, close to 40 percent were indifferent to or opposed to this role, and in Southern Africa, 25 percent were against the Bank assuming a role in developing markets for global environmental goods.

The proposed regional priorities identified in the strategy were supported by about 74 percent of the respondents. The highest agreement was in EAP (83 percent) while the lowest was in Southern Africa (64 percent). Regarding the Bank's effectiveness in the Regions, the highest marks were given to the assistance in water resource management, while the Bank's role in forestry and land-use management received low marks. The views on effectiveness of different instruments varied across Regions. In some Regions, for example, MNA, lending was considered more effective than nonlending services, while in others, for example, Southern Africa and LAC, analytical work, information sharing, and technical assistance scored the highest. Overall, only 38 percent of the respondents said that the environmental performance of Bank projects was satisfactory; 23 percent said that it was unsatisfactory.

- 1 Some participants, particularly from donor countries, questioned the basic framework of the Strategy.
- 2 They challenged the World Bank's emphasis on long-standing growth-based models of development,
- 3 arguing that new models are needed that are founded on ecological principles. The World Bank's stress
- 4 on markets and perceived reliance on the ability of the private sector to address environmental challenges
- 5 were criticized. In addition, many felt the strategy should more clearly address the links between
- 6 environmental quality, security, and conflict, as well as the relationship between better environmental
- 7 management and the role of civil society, equity, empowerment, and good governance. In many of the
- 8 meetings, there was consensus that how people view and utilize their environment is driven by much
- 9 more than purely economic factors, and environmental issues cannot be separated from social

1 considerations. Finally, participants advocated that the gravity of current environmental conditions be
2 more clearly stated in the Strategy, and that the links between local and global environmental issues be
3 emphasized.

4 ***Role of the Bank***

5 Many participants requested that the Bank acknowledge and strengthen its leading position as a global
6 role model, facilitator, and catalyst. Many emphasized that the World Bank had a responsibility to set
7 high international benchmarks for good environmental practice. Some urged the Bank to lobby
8 developed countries to improve their environmental responsibility, and make larger financial
9 commitments to aid developing nations in their efforts to both develop and foster sound environmental
10 management.

11 There were clear regional differences on the role participants felt the Bank was best positioned to play.
12 For example, Central European countries wanted the Bank to play more of the knowledge bank role,
13 whereas in Russia and the Western newly independent states (NIS), participants emphasized the advisory
14 role of the Bank on policy, and in Central Asia, participants stressed the financial role of the Bank.

15 A number of those who provided feedback wanted the World Bank's Environment Strategy to address in-
16 depth a very broad range of development issues in which they argued the Bank played a critical role, such
17 as trade, globalization, population, bio-safety, governance, food security, and private sector
18 accountability. Many of these issues have important linkages to environmental trends and management.
19 Some of these themes, such as global warming and government capacity, the Strategy has incorporated.
20 Other issues, such as food security and private sector accountability, are being, or will be, addressed
21 through other documents, sectoral strategies, or programs within the Bank. In 2002, the World
22 Development Report will comprehensively explore the broad inter-linkages of sustainable development.

23 ***Implementation issues***

24 There was a general call in the consultations for the World Bank to make changes within its own
25 operations in several critical areas:

- 26 ■ Mandate a longer time-frame for policy analysis, planning, and assistance programs in order to better
27 internalize the long-term impacts of development decisions on the social and physical environment
- 28 ■ Support strategic environmental assessments and other in-depth, cross-sectoral environmental
29 analyses early in country-policy dialogues
- 30 ■ Support increased transparency and accountability on the part of both borrowers and the World Bank,
31 by instituting regular reporting to external stakeholders, using clear performance indicators.

32 Much of the feedback on implementation focused on the Bank's need to engage in more participatory and
33 community-based approaches to development—and pay more attention to in-country capacity building at
34 all administrative levels. Many asked that the Bank find mechanisms to implement agreements with local
35 governments and nongovernmental agencies, and to support more bottom-up initiatives.

36 ***Response to the Consultations***

37 The consultations have helped to shape the Strategy in terms of both its presentation of the key issues and
38 its action plan. Some of the issues that were raised within the consultations, although gratefully
39 acknowledged, have not been integrated into the Strategy. In some cases, they were too broad, or beyond
40 the reach of the Strategy at this time, although they are recognized as indeed critical. Others issues are, or
41 will be, incorporated into the World Bank's work program, but the foundations within the Bank are not
42 yet firm enough for the Strategy to present an explicit action plan for them. The Environment team in the
43 Bank felt it was essential that the Strategy's discussion and action plan be focused on a few specific

1 priorities and recommendations, to heighten the likelihood of short- and medium-term success in
2 implementation. Implementation of the Strategy will be systematically monitored, and feedback provided
3 to revisit and updated its emphasis on priorities.

4 In response to requests that the Strategy be framed more in the context of sustainable development, we
5 have put larger emphasis on discussing environmental challenges within a sustainable development
6 framework. Development goals and key areas of assistance are integrated under three major objectives:
7 (1) quality of life; (2) quality of growth; and (3) quality of the regional and global commons.

8 In the action plan, the Strategy reflects several of the main recommendations of the meetings:

- 9 ■ The Strategy emphasizes the need to move environmental analysis earlier in the policy dialogue and
10 to facilitate cross-sectoral analysis. A commitment has been made to apply strategic environmental
11 assessments (SEAs) and country environment profiles to aid this process. These analytical tools will
12 be applied more systematically to Bank core activities and help integrate longer-term, spatial,
13 ecological, and social concerns.
- 14 ■ It emphasizes that strengthening environmental management and safeguard capacities is a chief
15 priority of the World Bank. The Strategy makes a commitment to in-country training during the
16 process of carrying-out EAs and SEAs; during the course of multi-stakeholder dialogues associated
17 with project related work; and during the preparation of CASs, PRSPs, and other policy related work.
- 18 ■ It supports the linkage of local and regional/global concerns by committing Bank staff to identifying
19 in their analytical work the overlaps between environmental goals at the local, regional, and global
20 levels. It also commits the Bank to helping client countries build their capacity to benefit from trade
21 in local and global environmental goods and services and to participate in regional trade with global
22 benefits.
- 23 ■ The Strategy makes a commitment to greater transparency and accountability regarding the World
24 Bank's environmental performance. It commits the World Bank to supporting the development and
25 dissemination of environmental and sustainability indicators in client countries; it launches an
26 Environmental Performance Reporting unit within the Environment Department of the World Bank,
27 for the purpose of reporting to both internal and external clients on the Bank's performance.

28 The World Bank's Environment Strategy—both as a document and an action plan—must be viewed as
29 part of an iterative process. The intent of the Strategy is not to bring to closure any of the issues it
30 addresses and especially not to cut short the general debate underway among stakeholders on
31 development directions. To promote continued dialogue, the Strategy proposes a framework for
32 revisiting, evaluating, and adjusting progress and for maintaining on-going communication with clients
33 and development partners including governments and civil society on the World Bank's role,
34 performance, and priorities.

35

Table J.1 World Bank environment strategy consultation schedule

<i>Date</i>	<i>Venue</i>	<i>Participants</i>
<i>Latin America and Caribbean</i>		
September 21 – 22	Cartagena, Colombia	Govt., NGOs, Private Sector (PS), Academia (Acad.)
October 16 – 17	Rio de Janeiro, Brazil	Govt., NGOs, PS, Acad.
November 7 – 8	San Jose, Costa Rica	Govt., NGOs, PS, Acad.
<i>Sub-Saharan Africa</i>		
September 13 – 14	Nairobi, Kenya	Govt., NGOs, PS, Acad.
October 10 – 11	Pretoria, South Africa	Govt., NGOs, PS, Acad.
October 23 – 24	Ouagadougou, Burkina Faso	Govt., NGOs, PS, Acad.
December 13-14	Paris, France	African Govt., NGOs, Acad.
<i>Europe and Central Asia</i>		
September 5 – 7	Berlin and Bonn, Germany	Govt., NGOs, PS, Acad.
September 11 –12	London, United Kingdom	Govt., NGOs, PS, Acad.
September 14	Amsterdam, the Netherlands	Government
September 18 – 19	Moscow, Russia	Govt., NGOs, PS, Acad.
September 21 – 22	Tbilisi, Georgia	Govt., NGOs, Acad.
October 14 – 16	Szentendre, Hungary	Govt., NGOs, PS
May 14, 2001	Bern, Switzerland	Govt, NGOs, Private Sector
<i>South Asia</i>		
October 4	Pakistan	Government
October 9 – 10	Pakistan	Govt., PS, NGOs, Acad., Multi-lateral Agencies
October 14 – 16	Dhaka, Bangladesh	NGOs
October 17 – 18	Delhi, India	Government
November 18 – 20	Colombo, Sri Lanka	Govt., NGOs, Int'l Donor Ag.
<i>East Asia</i>		
May 22-27, 2000	Tokyo, Japan	Govt, NGOs, Private Sector
October 4 – 5	Bangkok, Thailand	Governments, NGOs
<i>Middle East and North Africa</i>		
October 9 – 10	Amman, Jordan	Governments, NGOs
November 19 – 21	Amman, Jordan	Govt., NGOs, PS, Int'l Donor Ag.
<i>North America</i>		
November 20	San Francisco, CA	NGOs, Private sector
January 18	Washington, DC	Government
March 22-23	Ottawa, Canada	Govt., NGOs, Private sector
<i>Global</i>		
May 8, 2001	Washington, DC (GEF/NGO)	NGOs
May 9, 2001	Washington, DC (GEF Coun.)	Governments
June 4-5, 2001	Washington, DC (OED/WB)	Govts, NGOs, Private Sector

ANNEX K

Selected Partnerships

<i>Partnership</i>	<i>Scope/ VPU</i>	<i>Start</i>	<i>End</i>	<i>Overall objective</i>	<i>Partners and donors</i>
Africa Water Resources Management Initiative	Regional/ AFR	1997	on-going	Support countries to build capacity in the process of formulating and implementing national water resources management strategies Facilitate collaboration among riparian states Enhance ongoing multi-country efforts for joint development of scarce water resources	Canada (CIDA), France, Germany (GTZ), Japan, Netherlands (BNPP), Norway, Sweden (SIDA), Switzerland, UK (DFID), US (USAID), UNDP, UNEP, FAO, IUCN, AfDB, Development Bank of Southern Africa (DBSA)
Alliance for Forest Conservation and Sustainable Use	Global/ ESSD	1999	2005	Promote forest conservation and the adoption of international best practices in forest management	BMZ, BNPP, NORAD, WWF, other NGOs
Critical Ecosystems Partnership Fund	Global/ ESSD	2000	2005	Safeguard the world's threatened biological hotspots in developing countries by enhancing local livelihoods through improved NRM	Conservation International (CI), GEF, international and local NGOs, local community groups, other donors
Forest Market Transformation Initiative	Global/ ESSD	1998	on-going	Promote dialogue and pilot activities to assist turning market forces toward more forest-friendly practices	DGIF, Forest Trends, Netherlands, SDC, UK (DFID), US (State Department, in discussion)
Global Environment Facility	Global/ ESSD	1991	long-term	Forge international cooperation, and finance actions to address four critical threats to the global environment: biodiversity loss, climate change, degradation of international waters, and ozone depletion	FAO, IFAD, IFC, Regional Development Banks, UNDP, ENEP, UNIDO, NGOs, global environmental convention secretariats
Global Mechanism to Combat Desertification	Global/ ESSD	2001	on-going	Focus attention, resources, and knowledge on combating desertification by mobilizing and channeling financial resources, to increase financial effectiveness and ensure a holistic and equitable approach to resource distribution	Secretariat of the CCD, FAO, GEF, IFAD, Islamic Development Bank, other Regional Development Banks, UNDP, UNEP
Integrated Land-Water Management Action Program for Africa	Regional/ AFR	2001	on-going	Develop, implement and mainstream a coordinated and integrated action program to mobilize resources from the GEF, the IAs and other partners to address issues of land and water degradation Identify and promote the development of GEF eligible projects	AfDB, GEF, GM, UNDP, UNEP
Interagency Task Force on Forests	Global/ ESSD	1998	on-going	Support international policy dialogue on forests, coordinate interagency work, and promote outreach beyond the UN system. Encourage a global dialogue on forests and country level coordination through the support of National Forest Programs	DGIF, Finland, Germany (GTZ), Japan (JICA), UK (DFID), SDC, and others

<i>Partnership</i>	<i>Scope/ VPU</i>	<i>Start</i>	<i>End</i>	<i>Overall objective</i>	<i>Partners and donors</i>
International Coral Reefs Initiative	Global/ ESSD	1995	on-going	Promote the sustainable use and conservation of coral reefs for future generations Assess the impact of climate change on coral reefs	Australia, France, Sweden, UK, US GEF, IUCN, UNEP, UNESCO/IOC, UNDP
Managing the Environment Locally in Sub Saharan Africa	Regional/ AFR	1996	on-going	Empower local authorities and communities for better environmental planning and management, with an emphasis on benefiting the poor, and using knowledge management as the primary tool	European Commission (EC), Norway, Sweden
Mediterranean Environment Technical Assistance Program	Regional/ MNA	1990	on-going	Assist 15 countries with a common Mediterranean coastline to strengthen environmental policy, regulatory and institutional frameworks and environmental management capacity Develop projects and mobilize resources for environmental improvement	Canada, EC, European Investment Bank (EIB), Finland, Italy, Japan, Luxembourg, Switzerland, UNDP and others
Mesoamerican Biological Corridor	Regional/ LCR	1997	on-going	Align conservation and development interests, bolster protected area and buffer zone management and, through improved stewardship of private and tribal lands which link parks and reserves, establish greenways and corridors	Denmark (DANIDA), Germany (GTZ), US (USAID), UNDP, foundations, and NGO's
Millennium Ecosystem Condition Assessment	Global/ ESSD	2000	2004	Assess scientifically how world ecosystem changes will affect the ability to meet human demands for food, potable water, health, biodiversity and other ecosystem goods and services	GEF, the Packard, Rockefeller and Turner Foundations; secretariats of global environmental conventions (BCD, CCD and Ramsar); FAO, Norway, UNDP, UNEP, UNESCO, WRI, other environmental NGOs, and the international scientific community
Multilateral Fund for Implementation of Montreal Protocol	Global/ ESSD	1991	medium-term	Assist developing country parties to the Montreal Protocol, whose annual per capita consumption and production of ozone depleting substances (ODS) is less than 0.3 kg, to comply with the control measures of the Protocol	UNDP, UNEP, UNIDO, and the scientific and technical community via the OORG
National Strategy Study Program	Global/ ESSD	1998	on-going	Assist interested host country governments to assess their role in the Clean Development Mechanism (CDM), identify potential investment projects, and develop national policies regarding the CDM	Australia (AusAID), Finland, Germany (GTZ), Switzerland (SECO)
Nile Basin Initiative	Regional/ AFR	1997	on-going	Achieve sustainable socioeconomic development through the equitable utilization of, and benefit from, the common Nile Basin water resources	Canada, Denmark, Finland, GEF, Germany, Netherlands, Norway, Sweden, UK, UNDP, US
Pilot Program to Preserve the Brazilian Rainforest	Regional/ LCR	1992	2005	Identify ways to conserve the tropical rain forests of the Amazon and Brazil's Atlantic coast, and promote sustainable development in these regions	Amazon and Atlantic Rain Forest Networks of NGOs in Brazil, EC, France, GEF, Germany (GTZ, KfW), Italy, Japan, Netherlands, UK (DFID), UNDP, US
Prototype Carbon Fund	Global/ ESSD	2000	2012	Address climate change and promote the finance and transfer of climate-friendly technology to developing countries through purchases of greenhouse gas emissions reductions from clean-technology projects in these countries, and through dissemination of knowledge gained from these transactions	23 participants contributing a total of \$145m in funding, including 6 Governments (\$10m each: Canada, Finland, Japan (FBIC), Netherlands, Norway, Sweden) and 17 private companies (\$5m each)
UNDP-World Bank International Waters Partnership	Regional/ MNA/ ESSD	1999	2001	Establish increased cooperation in supporting riparian states in addressing complex issues of sustainable and equitable development in the Nile Basin, Red Sea and other basins	UNDP