Analytical and Advisory Activities in Environmental and Natural Resource Management

A Review of Fiscal 2002–04 Activities

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Analytical and Advisory Activities in Environmental and Natural Resource Management
Acronyms and Abbreviations

AAA analytical and advisory activities
AFR Africa Region
BW Business Warehouse
CAI Clean Air Initiative
CAS country assistance strategy
CAW country analytical work
CDM Clean Development Mechanism
CEA country environmental analysis
CFC chlorofluorocarbon
COD consultations/country dialogue
CON conference/workshop
DECRG Development Economics Research Group
DFID Department for International Development (U.K.)
DPL development policy lending
EA environmental assessment
EAP East Asia and Pacific Region
EC European Commission
ECA Europe and Central Asia Region
ECM environmental cost model
EER energy-environment review
EIA environmental impact assessment
ENRM environment and natural resource management
ENS (other) environmental studies
ENV Environment Department
ESB Environment Sector Board
ESMAP Energy Sector Management Assistance Programme
ESSD Environmentally and Socially Sustainable Development
ESW economic and sector work
GEF Global Environment Facility
Analytical and Advisory Activities in Environmental and Natural Resource Management

GHG     greenhouse gas
GIS     geographic information system
IBRD    International Bank for Reconstruction and Development
IDA     International Development Association
IUCN    World Conservation Union (formerly, International Union for the Conservation of Nature and Natural Resources)
KM      knowledge management
LAC/LCR Latin America and the Caribbean Region
MDGs    Millennium Development Goals
MFE     Mainstreaming Fund for the Environment
MFMP    Multilateral Fund for the Implementation of the Montreal Protocol
MNA     Middle East and North Africa Region
NEAP    national environmental action plan
NEPAD   New Partnership for Africa’s Development
NSS     national strategy study
ODS     ozone-depleting substances
OECD    Organisation for Economic Co-operation and Development
OP      Operational Policy
OPCS    Operations Policy and Country Services
PCF     Prototype Carbon Fund
PEE     public environmental expenditure review
PEN     poverty environment nexus
PM      particulate matter
POP     persistent organic pollutant
PRSC    poverty reduction strategy credit
PRSP    poverty reduction strategy paper
RFT     Rain Forest Trust Fund
SAR     South Asia Region
SEA     strategic environmental assessment
TA      technical assistance
TFESSD  Trust Fund for Environmentally and Socially Sustainable Development
TNC     The Nature Conservancy
UNDP    United Nations Development Programme
USAID  U.S. Agency for International Development
WBI     World Bank Institute
WRM     water resources management
WSSD    World Summit on Sustainable Development
WWF     World Wide Fund for Nature

Unless otherwise indicated, all dollar amounts are U.S. dollars. The Brazilian currency, cited in chapter 3, is the real, R$. 

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Executive Summary

Analytical and advisory activities (AAA) provide a foundation for defining strategic priorities and for informing policy dialogue and decisions on projects and programs in World Bank client countries. Since the endorsement of the World Bank’s Environment Strategy, the Bank has made considerable progress in strengthening its environmental AAA work. Although good information exists about the types and amounts of environmental analytical products being delivered, there has been no qualitative analysis of environmental analytical work to assess the alignment of that portfolio with the objectives of the Environment Strategy. This report represents a first step toward reviewing recent AAA reports with environmental themes, identifying good practice, and presenting trends over time.

What the Numbers Say
All World Bank products, including analytical and advisory activities—notably, economic and sector work (ESW) and nonlending technical assistance (TA) studies—are now classified according to a coding system that affords better recording of environment and natural resource management (ENRM) activities and cross-sectoral activities. The new system permits disaggregation of ENRM activities into themes such as biodiversity, climate change, environmental policies and institutions, land resources management, pollution management and environmental health, water resources management, and other ENRM.

A quantitative review of AAA trends reveals that between fiscal 1999 and fiscal 2004, a sustained progressive increase took place in the overall numbers of ESW and TA products with ENRM objectives. Within the aggregate, formal environmental ESW—for example, country environmental analyses (CEAs), strategic environmental assessments (SEAs), other environmental studies, public environmental expenditure reviews, and energy-environment reviews—increased steadily from 2001 through fiscal 2004, with further increases projected for fiscal 2005. This trend can be traced to the Environment Strategy, which focused on strengthening environmental analytical and advisory activities as a key objective.

In terms of regional coverage, all but one of the Bank’s regions show a general increase in ESW and TA products during fiscal 1999—
analytical and advisory activities in environmental and natural resource management

2005, although trends within the period differ. Africa (AFR), East Asia and Pacific (EAP), and Middle East and North Africa (MNA) show a steady increase, while Europe and Central Asia (ECA) and South Asia (SAR) appear to be leveling off and Latin America and the Caribbean (LAC) shows a slight decline. In terms of thematic coverage, the environmental policies and institutions theme dominates in a third of all ESW and TA with a primary ENRM theme in fiscal 2002—04. It is followed by pollution management and environmental health, water resources management, and other ENRM, which together account for approximately 50 percent of the total.

Mainstreaming of environmental issues is evidenced by the fact that more than 80 percent of AAA products with environmental themes is in four key sectors: agriculture, fishing, and forestry (28 percent); energy and mining (19 percent); water, sanitation, and flood control (21 percent); and law, justice, and public administration (17 percent). Close to 60 percent of the identified ESW and TA products with primary ENRM themes in fiscal 2002—06 is managed by the Environment Sector Board. Of the remaining 40 percent, three-quarters falls under the supervision of the Rural Development, Water Supply and Sanitation, and Energy and Mining Sector Boards.

ALIGNING AAA WITH THE WORLD BANK’S ENVIRONMENT STRATEGY

The goal of the Environment Strategy is to promote environmental improvement as a fundamental element of development and poverty reduction strategies and actions. The Strategy has three interrelated objectives: (1) improving the quality of life by enhancing livelihoods, preventing and reducing environmental health risks, and reducing people’s vulnerability to environmental hazards; (2) improving the quality of growth by supporting policy, regulatory, and institutional frameworks for sustainable environmental management and by promoting sustainable private sector development; and (3) protecting the quality of the regional and global commons and seeking equitable solutions to global challenges.

To further these objectives, the Bank has focused on using analytical tools and proactive efforts to mainstream environmental issues into poverty reduction strategy papers (PRSPs) and country assistance strategies (CASs). New AAA tools such as country environmental analysis (CEAs) have been designed for this purpose, and the focus of traditional AAA is being realigned with the goals and objectives of the Environment Strategy. CEAs were launched in 12 priority countries or states during fiscal 2002—04. Through targeted environmental analytical work, support has been provided to about 17 priority PRSP countries, and strategic environmental assessments have been initiated in about 12 countries.

Several analytical studies are being undertaken to address poverty-environment linkages (for example, in Nigeria and East Asia). Other studies explore environmental linkages within and across key sectors such as water resources (e.g., southern Africa), forests (e.g., Brazil and Mongolia), energy and urban transportation (e.g., Guatemala and India), and rural development (e.g., Colombia). In particular, strategic upstream environmental ESW and TA studies related to the agriculture, fishing, and forestry sector reflect the emphasis that the
Bank’s Environment and Rural Development Strategies place on the linkages between sustainable rural development and natural resource management (e.g., in Africa, Brazil, and Mongolia). Through the use of strategic analytical tools, the Bank is supporting policy, regulatory, and institutional reforms and sustainable private sector development in client countries such as India, Tunisia, and Ukraine. Interventions designed to reduce poverty by improving local environmental quality and sustainable natural resource management while also providing regional and global benefits are being undertaken in, for example, Slovenia and Vietnam.

**Adjusting Resources**

The Bank’s analytical work on ENRM is supported through a mix of Bank budgetary allocations and Bank-managed bilateral donor trust funds. Given the emphasis on analytical work laid down in the Environment Strategy, budgetary allocations for environmental AAA have been steadily increasing over the past few years. Of the $22.0 million allocated to ENRM analytical work in fiscal 2002—04, 28 percent supported analyses on environmental policies and institutions; 20 percent, on water resources management; and 14 percent, on pollution management and environmental health.

The Mainstreaming Fund for the Environment (MFE), established in April 2001 to support the implementation of the Environment Strategy, has proved to be a valuable instrument for systematically addressing corporate priorities and mainstreaming the environmental agenda into Bank operations. In addition, trust funds such as the Trust Fund for Environmentally and Socially Sustainable Development (TFESSD) are playing an increasingly important role in supporting the analytical underpinnings for mainstreaming environmental management, and particularly in addressing environment-poverty issues in the country dialogue and in assistance programs.

In addition to budgetary resource adjustments, improvements in ESW recording and monitoring systems are also being made, in line with the Bank’s broad ESW reform initiative. Through the Environment Department’s Environment Strategy Papers and Environmental Strategy Notes, good practices and lessons learned from environmental analytical work, both within and outside the Bank, are disseminated to a wide audience of environmental, and poverty reduction practitioners. New Web sites and databases are being created to enable easy access to environmental data and information related to the Bank’s AAA work.

**Looking Ahead**

The review offers an overall encouraging picture of the World Bank’s progress in strengthening its environmental analytical work in the period following adoption of the Environment Strategy. Over the past few years, significant progress in the level and content of our environmental analytical work has been made. Our environmental analyses are increasing in number, are cost-effective in their preparation, and are aligned with the key objectives of the Environment Strategy. Upstream analytical work (CEAs and SEAs) is starting to play an important role in influencing CASs and lending operations. There has also been an improvement in the consideration of environmental issues as a country moves from an interim PRSP to a PRSP. These efforts, however, will have to be sustained...
over a number of years to solidify the Bank’s knowledge base and its ability to effectively assist client countries. As we move further toward strengthening our environmental AAA, several challenges will need to be addressed.

First, the profile of environmental ESW activities needs to be made more prominent, and the activities more strategic, by better tying them to planned lending operations and integrating them with the larger country support programs. The approval of the new policy on development policy lending (OP/BP 8.60) now demands that upstream environmental AAA work be carried out to ensure that environmental and natural resource considerations are incorporated early in the development policy lending design stage. For environmental AAA to be most effective and to serve as an important input, we need to better plan our environmental analytical work, timing it in advance of upcoming CASs, PRSPs, poverty reduction strategy credits (PRSCs), and lending operations.

Second, we need to continue to work toward targeting our environmental AAA to address the Millennium Development Goals (MDGs). While our analysis finds that environmental analytical work is fairly well aligned with the recent recommendations of the Task Force on Environmental Sustainability, there is still room for improvement, especially in addressing environmental linkages with the education, gender, and health MDGs.

Third, with the encouraging trend in recent AAA and the healthy pipeline of upcoming activities, it is critical to improve the coding of AAA products to capture environmental content in our work. This requires putting in place a systematic, outcome-based monitoring system that employs appropriate measurable indicators. These indicators will serve to monitor the alignment of the AAA portfolio, both internally with our strategic priorities and operational needs and externally with the critical environmental problems in our client countries.

Finally, given the impact and influence of environmental analytical work in incorporating environmental sustainability principles within CASs, development policy lending, and sectoral investment operations, there is a critical need to not only sustain but also bolster the level of budgetary and trust-funded support.
Chapter 1

Introduction

An essential and increasingly important element of the World Bank’s contribution to development is the analytical and advisory work that is carried out to support our client countries. Analytical and advisory activities (AAA) provide a foundation for defining strategic priorities and informing policy dialogue and decisions on projects and programs. These activities include economic and sector work (ESW), nonlending technical assistance (TA), knowledge management (KM), training, and research.

The 1999 report Fixing ESW: Where Are We? took stock of the Bank’s country economic and sector work program—its history and trends, its management and effectiveness, and reform efforts to date. The report showed that environmental ESW was among the most outdated work of this kind; in fiscal 1995-99, for example, only 25 percent of client countries had an environmental ESW product that was five years old or less. These findings, combined with recognition that analytical work plays an important role in influencing client countries’ policies and programs, resulted in a renewed effort to strengthen the Bank’s environmental AAA.

The World Bank’s Environment Strategy, endorsed in 2001, described analytical work as “the foundation for defining strategic priorities and integrating environmental concerns into projects and programs.” In line with this emphasis, the Strategy called for an adjustment in Bank work programs to foster new and improved environmental analytical work to support the Bank’s lending operations and enhance mainstreaming of environmental considerations within these operations (figure 1.1).

Since the endorsement of the Strategy, considerable progress has been made in strengthening environmental AAA work. The Bank is undertaking more strategic environmental analysis at the national and sectoral levels, and its AAA portfolio began to increase from fiscal 2000–01 onward. Country environmental analyses (CEAs) were launched in 12 priority countries or states in fiscal 2002–04, and strategic environmental assessments (SEAs) have been initiated in about 12 countries. Through targeted environmental analytical work, the Bank has provided support to about 17 priority countries preparing poverty reduction strategy papers (PRSPs).
Although good information about the kinds of environmental analytical product being delivered is available, there has been to date no qualitative analysis of the Bank’s environmental analytical work to assess its alignment with the objectives of the Environment Strategy. This report represents a first step in that direction: it reviews recent AAA reports with environmental themes, identifies good practices, and examines trends over time, taking into account AAA products in the pipeline. The qualitative review scrutinizes 75 analytical reports out of a total of about 300 ESW and TA products with environmental themes in fiscal 2002—04, using data from several Bank-wide databases (see annex A) and drawing on personal communications with regional colleagues. In addition, other publications produced by the Environment Anchor have been included in this qualitative review (see annex C). To capture overall trends, the quantitative analysis covers environmental AAA approved in fiscal 1999—2006, encompassing a total of 763 products (392 ESWs and 371 TAs) with assigned ENRM themes.

The report is organized as follows: chapter 2 presents trends in environmental AAA with respect to regional and thematic coverage, sectoral linkages, and sector board oversight; chapter 3 draws on a qualitative review of content to highlight recent analytical work that is aligned with the objectives of the Environment Strategy; chapter 4 reports on the allocation of resources (Bank budgetary allocations and trust funds) to support environmental AAA, as well as on progress in monitoring, knowledge sharing, and dissemination of AAA work; and chapter 5 summarizes the findings of the review and identifies remaining challenges. A wealth of detail relating to the analytical work covered can be found in the annexes, which include lists of environmental AAA studies and related publications, summaries of regional environmental AAA portfolios and trends and of activities funded through trust funds, and abstracts of the fiscal 2002—04 environmental AAA work reviewed.

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### Figure 1
**Key building blocks of the CEA**

<table>
<thead>
<tr>
<th>Strategic framework</th>
<th>Tools</th>
<th>Institutional realignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poverty-environment linkages</td>
<td>Analytical and advisory services</td>
<td>Incentives and accountability</td>
</tr>
<tr>
<td>Integrating environment into sectors, policies, and institutions</td>
<td>Environmental projects and programs</td>
<td>Training and skills mix</td>
</tr>
<tr>
<td>Synergies between local and global benefits</td>
<td>Safeguard tools</td>
<td>Funding and partnerships</td>
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<td></td>
<td></td>
<td>Monitoring and reporting</td>
</tr>
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Chapter 2

What the Numbers Say: A Quantitative Analysis of AAA

An ESW activity (a) involves analytical effort, (b) is undertaken with the intent of influencing an external client’s policies and programs, and (c) is owned by a specific Bank unit.

A TA activity (a) is a stand-alone capacity-building or other technical assistance activity and (b) does not have to involve significant analytical effort.

Analytical and advisory activities (AAA) are recognized by the World Bank’s Environment Strategy as the foundation for defining strategic environmental priorities and informing policy dialogue and decisions on projects and programs. The Bank’s AAA portfolio encompasses economic and sector work (ESW), nonlending technical assistance (TA), internal and external training, knowledge management (KM), and research. This review focuses exclusively on trends in two key components of AAA—ESW and TA—in recognition of their role in supporting the mainstreaming of environment in the Bank’s lending and investment operations in client countries (see also annex E). Accordingly, in this report the abbreviation AAA refers to ESW and TA products only (see box 2.1).

**Box 2.1**

**Defining economic and sector work (ESW) and technical assistance (TA) activities**

An ESW activity (a) involves analytical effort, (b) is undertaken with the intent of influencing an external client’s policies and programs, and (c) is owned by a specific Bank unit.

A TA activity (a) is a stand-alone capacity-building or other technical assistance activity and (b) does not have to involve significant analytical effort.

Economic and sector work produces formal and informal analytical reports on critical issues, at the country level or for specific sectors. The formal reports are planned and delivered under corporate production and peer review guidelines. ESW plays a key role in country assistance strategies (CASs) by providing inputs to the broader client policy dialogue, as well as for decision making on specific projects and programs. For environment and natural resource management issues, ESW formal reports include country diagnostic
reports such as country environmental analysis and energy-environment reviews (EER) and country advisory reports such as other environmental studies (ENSs), public environmental expenditure reviews (PEEs), and strategic environmental assessments (SEAs).

*Nonlending technical assistance* channels both Bank and donor resources to support client capacity building through the transfer of skills and knowledge, offering a powerful vehicle for improving policies and project design. TA activities are predominantly client managed, as opposed to Bank managed. Focused largely on capacity building and knowledge transfer, TA activities do not necessarily involve significant analytical effort, although the review identified a number of TA activities that have produced analytical reports of quality fully comparable to that of ESWs.

This chapter presents the findings of a review of the Bank’s environment and natural resource management (ENRM) economic and sector work and nonlending technical assistance, looking at selected trends across the fiscal 1999—2004 portfolio and the fiscal 2005—06 product pipeline. It specifically examines trends in aggregate ENRM activities, regional distribution of Bank operations, thematic coverage and distribution, sectoral linkages, and management oversight.3

The review is based on the Bank’s new multidimensional coding system, in which environment and natural resource management is one of 11 themes. The classification recognizes the cross-cutting nature of ENRM and the impetus for its mainstreaming across the entire spectrum of Bank operations (see box 2.2 and annex D).

The review sample encompasses all ESW and TA products with assigned primary and secondary ENRM themes for the period fiscal 1999—2006.4 This makes a total of 763 products—392 ESW and 371 TA. To better capture the overall product trends in terms of volumes and budget allocations, the review looks back to fiscal 1999. The thematic distribution analysis, however, extends back only to fiscal 2002, since comparable data are not available for the period before the 2002 Bank product classification and coding reform. Thus, the review is based on data from the Business Warehouse (BW) database for fiscal 2002 onward and on research using the Bank’s SAP database for the period fiscal 1999—2002. The review also used details of reports from the central electronic repository for final Bank documents (ImageBank) and draft versions of reports in preparation.

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**BOX 2.2**

**The Bank’s new coding system**

Under the Bank’s new multidimensional coding system, all lending and AAA products are assigned theme and sector codes. *Themes* capture the goals and objectives of Bank activities in line with its corporate advocacy and global public-good priorities. *Sectors* refer to the part of the economy supported by the Bank intervention and denote high-level, mutually exclusive groupings of economic activities based on the types of goods or services produced.

Up to five primary or secondary theme codes can be assigned to each lending and nonlending activity. The distribution of sectoral codes is expressed in percentages. Ideally, the coding should capture the thematic and sectoral scope of the activity, including the allocation of the expended funds.
AGGREGATE ENRM TRENDS

Between fiscal 1999 and 2005, the overall numbers of ESW and TA products with primary and secondary ENRM objectives increased progressively (figure 2.1). The aggregate number of these products is expected to more than double in the fiscal 2002—05 period.

Since the endorsement in July 2001 of the new Environment Strategy, which focuses on strengthening environmental analytical and advisory activities as a key objective, and in the context of the Bank’s overall emphasis on AAA products, the production of formal environmental ESWs, including CEAs, SEAs, other environmental studies (ENSs), public environmental expenditure reviews (PEEs), and energy-environment reviews (EERs), has increased steadily, from 10 formal environmental ESWs in fiscal 2002 to 16 in fiscal 2004. The number is projected to increase to 23 products in fiscal 2005 (see figure 2.2 and annex B).

Special attention to the comparison between the Bank-wide and the ENRM-specific ESW trends is warranted. As is evident in figure 2.3, the number of ESW products in ENRM has been growing at a slower rate, if at all, compared with Bank-wide trends.

Aggregating the ESW and TA data also reveals an interesting dichotomy of sometimes conflicting ESW and TA production trends prior to fiscal 2003. As the review of the individual reports from the study sample has shown, at least part of this discrepancy can be traced to possible coding misclassification. This review found more than a dozen examples of work coded as technical assistance that nevertheless displayed key ESW charac-

Figure 2.1

Number of ESW and TA products with primary and secondary ENRM themes, fiscal 1999–2005

Note: Includes supplementals.
Figure 2.2
Number of formal environmental ESW reports, fiscal 2002–05

Note: Fiscal 2005 projections are as of March 2005. The formal reports included are country environmental analyses (CEAs), other environmental studies (ENSs), energy-environment reviews (EERs), public environmental expenditure reviews (PEEs), and strategic environmental assessments (SEAs).

Figure 2.3
Trends in ENRM and Bank-wide ESW production, fiscal 2000–2005

Note: Fiscal 2005 projections are as of March 2005, including supplementals.
teristics. In addition, several multiyear products were coded as TA and ESW in alternate years. The current classification of TA activities instituted in fiscal 2003—04 and the accompanying review and recoding of the TA portfolio could be considered responsible for at least partially addressing this aberration, as evidenced by the more stable trends in fiscal 2003—05.

**TRENDS WITHIN THE REGIONS**

In the Bank’s six regions, there was a general increase in ESW products during the period fiscal 1999—2005 (see figure 2.4).

An examination of regional trends reveals the following results (see also annex F):

- **Africa** projects the greatest increase in absolute numbers of ESW products, from 3 in fiscal 2000 to 14 in fiscal 2004 and 21 planned for fiscal 2005. The environmental policies and institutions and water resources management themes dominate the region’s AAA (see figure 2.5).
- **East Asia and Pacific** almost doubled its ESW activities with primary ENRM themes, from 9 products in fiscal 2000 to 16 in fiscal 2004. Here too, the largest number of products falls under the environmental policies and institutions theme in fiscal 2002—05.
- **ENRM ESW activities increased fivefold in Europe and Central Asia between fiscal 2001 and fiscal 2003. The environmental policies and institutions theme has been the leading one in this region as well, accounting for a third of ESW products with primary environment themes in fiscal 2002—05.**
- **ENRM ESW production in Latin America and the Caribbean has actually decreased in absolute numbers since the fiscal 2000—01**

[Figure 2.4](#) Trends in ENRM ESW by region, fiscal 1999—2005

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period, but ESW work has been gradually increasing since fiscal 2003. The environmental policies and institutions theme dominates this region’s ENRM ESW activities, followed by pollution management and environmental health.

- **Middle East and North Africa** has moved from having no ENRM ESW products in fiscal 2001 to 16 products in fiscal 2004 and 10 planned for fiscal 2005. Water resources management dominates the portfolio, accounting for almost a third of all existing and planned products.

- **South Asia** ESW activities in ENRM increased during fiscal 2001—04. The environmental policies and institutions theme dominates the portfolio of this region as well, accounting for 45 percent of the product aggregate over the fiscal 2002—05 period.

**Coverage of Environmental Themes**

For this review, we looked at all ESW and TA products that are assigned at least one primary or secondary ENRM code. Unless otherwise specified, all the data given below refer to products with a primary ENRM theme. Up to five primary or secondary themes can be assigned to a single product, and the analysis thus captures theme coverage rather than product quantity. Looking at the general trends in the thematic coverage of the review sample, environmental policies and institutions emerges as the leading theme, accounting for 33 percent of all projects during fiscal 2002—04 (figure 2.6). Next come pollution management (20 percent), water resources management (14 percent), and other ENRM (16 percent).
The biodiversity and climate change themes account for a low percentage of the portfolio. An incremental increase is projected for the climate change theme in the fiscal 2005—06 pipeline, but biodiversity coverage is projected to decrease further over the same period. Some of the underrepresentation of global environment themes may occur because the review does not cover analytical work funded by various Bank partnerships or by the Global Environment Facility (GEF), which supports many biodiversity and climate change activities. Furthermore, a number of TAs and informal ESWs are financed, either in whole or in great part, by various Bank-managed trust funds (discussed in chapter 4), and these are often not captured by the Bank’s coding system.

**Linkages with the Sectors**

Taking advantage of the expanded information provided by the Bank’s new coding system, the review looked at sectoral linkages for the fiscal 2002—06 period, covering a total of 491 products. For this review, we looked at the sector mapping and TA products that are assigned at least one primary or secondary ENRM code. A single product could be assigned up to five sector codes (see Annex D), coming to a total of 100 percent; the analysis thus captures theme coverage rather than product quantity.

The objective of the analysis was to capture the direction and extent of environmental themes within the Bank’s AAA work, identifying key sectors and potential gaps. As figure 2.7 shows, more than 80 percent of the ESW/TA products is spread relatively evenly across four key...
sectors: agriculture, fisheries and forestry (28 percent); energy and mining (19 percent); water, sanitation, and flood control (21 percent); and law, justice, and public administration (17 percent).

**Sector Board Oversight**

All AAA products are mapped to a sector board, which is then responsible for product quality and oversight. The thematic and sectoral distribution of the ESWs and TAs reviewed follows closely that of the sector board mapping of the sample. Our review shows that about 60 percent of the identified ESWs and TAs with primary environment themes falls under the Environment Sector Board (ESB). Of the remaining 40 percent, three-quarters falls under the supervision of the Rural Development, Water Supply and Sanitation, and Energy and Mining Sector Boards.

**Summary**

Overall, the number of ESW and TA products with environmental and natural resource management themes has grown since the endorsement of the Environment Strategy in 2001. In particular, there has been an increase in upstream analytical work addressing environmental issues through products such as CEAs and SEAs. The coverage of environmental themes within the Bank’s regions shows differences that reflect regional environmental priorities. Progress in mainstreaming environmental issues within various sectors is evidenced by the wide spread of environmental themes in key sectors such as agriculture, fishing, and forestry; energy and mining; and water, sanitation, and flood control. In addition, a high proportion (40 percent) of ESWs and TAs with primary environment themes falls under the supervision of sector boards other than the ESB.
Aligning AAA with the Environment Strategy: A Qualitative Review

This chapter assesses the alignment of AAA with the objectives of the Environment Strategy, looking specifically at the strategic framework’s key areas of improving our understanding of poverty-environment linkages, integrating environment into sectoral operations, and affecting environmental institutional strengthening and policy making. The AAA work undertaken in fiscal 2002—04 that addresses each of these areas is highlighted; summaries of these products can be found in annex G. In all, 75 environmental AAA (both ESW and TA) were reviewed, out of a total of 304 products.

FOCUSING ON POVERTY-ENVIRONMENT LINKAGES

The Environment Strategy calls for a renewed focus on three areas where environment, quality of life, and poverty reduction are strongly interlinked: (1) enhancing livelihoods; (2) preventing and reducing environmental health risks; and (3) reducing people’s vulnerability to environmental hazards. Among other actions, this involves enhancing our knowledge of poverty-environment linkages and integrating environment into all relevant areas of the World Bank’s lending and nonlending activities in countries where environment is significant for poverty reduction efforts. This section presents an overview of the Bank’s analytical work that focuses on poverty-environment linkages and, in particular, on the incorporation of these linkages into poverty reduction strategy papers (PRSPs), which have emerged as a widely supported
framework for participatory development planning and for donor assistance in low-income countries.

**Integrating environment into PRSP processes**

Recognizing the imperative of linking good environmental management and poverty reduction, the Environment Strategy strongly emphasizes the need for better understanding of poverty-environment linkages in setting priority interventions and targeting effective interventions. This imperative is particularly strong for PRSP processes in countries where environmental factors could have a critical role in poverty reduction. The incorporation of environmental issues into the PRSPs of countries where linkages between environment and poverty are strong is expected to result in more effective actions and programs aimed at improving the quality of life, particularly for the poorest segments of the population.

Two recent reviews have reported on the extent to which environmental issues are being incorporated into PRSPs. *Poverty Reduction Strategies and Environment* (2002) found that in most cases, environmental inputs to PRSPs have taken the form of technical assistance support for participation in PRSP discussions rather than dedicated environmental AAA work. Where the latter work has been conducted, however, the impact has been significant. The Yemen PRSP, for example, was among the top performers in the 2002 review of environmental content in PRSPs and was a marked improvement over the 2001 interim PRSP, which contained little or no mention of environmental issues. A second review, *Status and Evolution of Environmental Priorities in the Poverty Reduction Strategies: An Assessment of Fifty Poverty Reduction Strategy Papers* (2004) found that PRSPs showed uneven attention to environmental issues but that good practice exists.

A series of recent reports seek to determine to what extent PRSPs define and adopt targets and indicators that align with those of the Millennium Development Goal on environmental sustainability, MDG 7. *Poverty Reduction Strategies and the Millennium Development and Environmental Sustainability: Opportunities for Alignment* (2004) reviews interim and full PRSPs in 50 countries and highlights good-practice examples of MDG coverage by PRSPs in, for example, Bolivia, Ethiopia, Mauritania, and Vietnam. Figure 3.1, showing the annual growth rates of water supply access in PRSP countries, indicates slow progress, with very few countries currently achieving the access rates needed to achieve the MDG 7 water supply target. Looking interim and full PRSPs, the analysis highlights an improvement in the focus on MDG 7 between the interim and full PRSP stages but also points to an overall need of the PRSPs paying stronger attention to this specific MDG.

Other studies have attempted to understand poverty-environment linkages better. *Linking Poverty Reduction and Environmental Management* (2003), for example, explores the policy challenges and opportunities associated with the poverty reduction—environment link and presents a number of measures that can be taken at the national and international levels to reduce poverty and enhance environmental quality. *Environmental Indicators Relevant to Poverty Reduction* (2002) presents a spatial analysis of natural resource indicators to illustrate their potential use in targeting and monitoring poverty reduction outcomes. The
report uses the case study of Ecuador to demonstrate how an indicator of potential resource degradation can be combined with a poverty map (figure 3.2).

**Enhancing livelihoods by improving sustainable management and protecting natural resources**

In most developing countries, poor people, especially those living in rural areas, tend to be highly dependent on natural resources for their livelihoods. In many cases they derive a significant portion of their household income from natural resources. *Counting on the Environment: Forest Incomes and the Rural Poor* (2004), a meta-analysis of 54 case studies, investigated the extent to which people in rural areas in developing countries depend on forest environmental income. The results indicate that such income represents a significant income source, making an average contribution to household income of some 22 percent in the populations sampled.
Ongoing World Bank analytical work offers a number of examples of how the Bank is following up on its commitment to enhance the livelihoods of the rural poor, directly through projects and programs and, at an upstream level, by providing policy support through various analytical activities. An example is the quantitative study *Nigeria Poverty-Environment Linkages in the Natural Resource Sector* (2003). To better understand the microlevel implications of natural resource degradation for poverty outcomes, two village-level surveys in two ecosystems were carried out (see table 3.1). The findings of the study reveal that about 20 percent of household income in Hadejia-Nguru and 35 percent in the Niger Delta comes from environmental resources. In Hadejia-Nguru the poorest half of the sample obtains 39 percent of its income from such sources, and in Niger Delta the figure is 60 percent, confirming that environmental degradation will have a greater impact on the poor than on the rich.

*Causes of Deforestation in the Amazon* (2003) examines the dependence of cattle ranchers on forests for their livelihoods. The study describes the expansion of ranching since the 1970s and investigates the economic and environmental costs and benefits of continued deforestation in Brazilian Amazonia, as well as the agents responsible for this process. The report finds that although rural income per capita tripled on average, from $410 in 1970 to $1,417 in 1995, the increase did not necessarily translate into improvements in the quality of life for the poorest local population groups.

The *Soil Fertility Recapitalization Policy Note* (2004) is part of an analytical study to assess how best the Bank could invest in soil, land, and water management activities such as soil fertility, soil conservation, land restoration, rainwater harvesting, and watershed and river basin management to fight poverty and land degradation in Africa. The study estimates the effects of investments in soil, land, and water management activities on the performance and economic rates of return of projects. The analysis suggests that it might make sense from the economic and operational points of view to invest in soil and water management activities in Sub-Saharan Africa as a means of speeding agricultural productivity and poverty alleviation.

### Preventing and reducing environmental health risks

Premature death and illness due to major environmental health risks account for 20

<table>
<thead>
<tr>
<th>Category of constraint</th>
<th>Number of households</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overexploitation of resources due to population pressure</td>
<td>42</td>
<td>35.0</td>
</tr>
<tr>
<td>Deforestation</td>
<td>41</td>
<td>34.2</td>
</tr>
<tr>
<td>Pollution from oil</td>
<td>25</td>
<td>20.8</td>
</tr>
<tr>
<td>Flooding</td>
<td>1</td>
<td>0.8</td>
</tr>
<tr>
<td>None</td>
<td>9</td>
<td>7.5</td>
</tr>
<tr>
<td>Soil erosion/loss of fertility</td>
<td>2</td>
<td>1.7</td>
</tr>
<tr>
<td>Total</td>
<td>120</td>
<td>100.0</td>
</tr>
</tbody>
</table>

*Table 3.1 Perceived constraints on natural resource management in households in Niger Delta, Nigeria*
percent of the burden of disease in the developing world. Environment-related diseases, notably diarrhea, acute respiratory infections, and malaria, are leading causes of child mortality and morbidity, accounting for some 40 percent of under-five mortality.

The Environment Strategy Paper *Health and Environment* (2001) highlights the links between environment, public health, and poverty and discusses the implications for the Bank’s strategy for addressing environmental health concerns. A key finding is that water supply and sanitation projects and urban projects make up the largest portion of the pollution management and environmental health—related portfolio (and a sizable proportion of the Bank’s overall lending portfolio), underlining the need to pay even greater attention to maximizing the health benefits of these projects.

The World Bank is undertaking several analytical activities that have environmental health components related to indoor air pollution and water supply and sanitation. In South Asia, for example, the aim of the regional *Urban Air Quality Management Program* (2002—04) is to reverse the trend toward deterioration of urban air quality through the development and implementation of cost-effective, viable policies and efficient enforcement mechanisms. In fiscal 2002—04 as many as 20 dissemination notes on technical and policy issues were published; many of them focusing on health issues (see www.worldbank.org/sarurbanair). For example, the note *Health Impacts of Outdoor Pollution* (2003) presents an excellent overview of health effects and, using the example of Mexico City, provides guidance for estimating health impacts in South Asia, where studies based on measured ambient concentrations of particulate matter have not yet been done. *Economic Valuation of the Health Benefits of Reduction in Air Pollution* (2003) uses the same example to present methods for the economic valuation of changes in illness and premature mortality and discusses the appropriateness of applying to South Asia health benefit estimates from studies in other regions.

The note *Science of Health Impacts of Particulate Matter* (2003) surveys current research on the characteristics of particulate matter (PM), such as size, number, and composition of particles, and on the mechanisms by which particulate matter affects human health. The *Environment Monitors* on air quality for Thailand and the Philippines (2002) also estimate health costs. The report *India Household Energy, Indoor Air Pollution, and Health* (2002) is a comprehensive study that emphasizes the benefits of switching to modern fuels and also of housing improvements. The study includes an exposure assessment and modeling of indoor air pollution in Andhra Pradesh (see figure 3.3).
Reducing people’s vulnerability to environmental hazards

 Millions of poor people are vulnerable to natural disasters and environmental hazards. Climate change will exacerbate this threat, causing increased displacement and loss of life, disruption of agriculture, and destruction of natural, social, and physical capital. The losses are expected to be most acute in the poorest countries. Poor people’s economic dependence on natural resources makes them particularly vulnerable to environmental degradation. In addition, environmental disasters and environment-related conflicts may have regressive impacts because the poor are least able to cope with their effects.

In fiscal 2002 a major analytical exercise to investigate poverty-environment linkages in Cambodia, the Lao People’s Democratic Republic (PDR) and Vietnam was initiated. In the first phase of this Poverty-Environment Nexus (PEN) Study (2002), poverty data for the three countries were mapped using geographic information systems (GIS) and were then overlaid with individual environmental variables for visual assessment of spatial associations. The three environmental indicators chosen for the study were deforestation, access to sanitation, and fragile lands.

The data from the Lao PDR and Vietnam show evidence of poverty-environment linkages for fragile soils. An overlay of a map of Vietnam’s poor population on a GIS-generated map of steeply sloped land (shown in figure 3.4) points to potential poverty-environment linkages in marginal lands, especially in the northern and central highlands. By establishing evidence of the vulnerability of poor people to specific environmental problems, studies such as this offer valuable inputs to the

![Figure 3.3](image-url)

Mean 24-hour respirable suspended particulate matter concentration by fuel and house area, India

- Mixed
- Wood
- Kerosene
- LPG

<table>
<thead>
<tr>
<th>Fuel</th>
<th>Kitchen Area</th>
<th>Living Area</th>
<th>Outdoors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wood</td>
<td>500</td>
<td>300</td>
<td>100</td>
</tr>
<tr>
<td>Kerosene</td>
<td>200</td>
<td>150</td>
<td>50</td>
</tr>
<tr>
<td>LPG</td>
<td>100</td>
<td>50</td>
<td>10</td>
</tr>
<tr>
<td>Mixed</td>
<td>800</td>
<td>600</td>
<td>300</td>
</tr>
</tbody>
</table>

- 24-hour mean (µg/m³)
Aligning AAA with the Environment Strategy: A Qualitative Review

Anjali Acharya, Milen Dyoulgerov and Eri Tsutsui

The Macroeconomic Growth and Water Variability in Mali (2004) study informs and quantifies the extent to which hydrological variability (floods and droughts) affects the economic performance of sectors identified in the country assistance strategy as expected to be sources of growth. Recommendations drawn from the analysis include strengthening flood mitigation planning, with demonstration of costs and benefits, developing stronger technical capacities, and improving communication strategy for managing flows. The study Flood Management in the Tara and Lim Basins (2004) focuses on flooding problems in two river basins in Serbia and Montenegro. It analyzes historical floods, past and current flood protection measures, possible links between hydrological rainfall-runoff behavior and forest management, and the socio-economic situation in the river basins. Through this analysis, the report identifies localized flood threats to human settlements, infrastructure (roads and bridges), and the structural safety of mine-tailing dams, notably in Mojkovac.

Integrating Environment into Sectors

Recognizing that environmental issues should be considered and incorporated into the early stages of the decision-making process across all economic sectors, the Environment Strategy underscores the importance of integration (mainstreaming) of environment in sectoral projects, programs, and policies. This imperative has been gaining even more momentum with the endorsement of recent Bank strategies (and their updates) in water resources, forests, energy, urban transportation, and rural development. The objectives put forth in each of these strategies are fully consistent with those of the Environment Strategy and effectively apply the latter to the specific challenges of conservation and wise use of forest ecosystems, sustainable land use, energy efficiency, and water resources management. The new strategies have encouraged the preparation of numerous Bank analytical studies to explore environmental linkages within and across sectors. This section provides an overview of the analytical work addressing environmental linkages in the key sectors of water resources and sanitation, energy and mining, transportation, agriculture, fishing, and forestry, and rural development.

Water, sanitation, and flood protection

The linkages among water supply services, water resources management, and environ-
ment are becoming apparent, particularly in water-stressed and resource-degraded areas. Environmental dimensions, as embodied in legal and regulatory instruments governing water allocation, environmental assessment, and pollution, are a crucial element of the overall water resources management framework. The Bank’s new Water Resources Strategy, endorsed by the Board of Directors in February 2003, emphasizes the need for a cross-sectoral approach to translate these linkages into effective policies, projects, and programs.

Some recent examples of analytical work explore the environmental dimensions of water resources management at both regional and country levels. The Europe and Central Asia (ECA) Water Resources Strategy (2003) presents key water management issues and challenges in the region at the country and subregional levels; reviews the World Bank’s water portfolio to date, highlighting good practices and missed opportunities; and outlines a strategic direction for World Bank engagement in water resources management. The report also addresses policies and investments that affect water resources management broadly at the river basin or tributary level (e.g., infrastructure for multipurpose storage, flood management, water quality and source protection, and water allocation). One volume of the strategy is devoted to the challenges facing southeastern Europe and contains an analysis of key issues and strategic directions for improved water resources management at the national and transboundary levels. An interesting section of the report is that discussing the potential use of economic instruments and demand management policies and other water-related regulations in the region.

Defining and Mainstreaming Environmental Sustainability in Water Resources Management in Southern Africa (2002) provides a framework for defining tools for sustainable management of water resources in the region (see box 3.1). It offers guidance for operationalizing complex concepts related to the impacts on the water environment of changes in the amount, timing, and quality of water resulting directly from water development activities and indirectly from land use and other activities within the river basin. Another report, Towards a Water-Secure Kenya: Water Resources Sector Memorandum (2004), proposes a plan of action that will put water resources management on a sound footing in Kenya. The note provides an economic rationale for extending the water resources reforms being undertaken by the government of Kenya and highlights the need to broaden the ownership of the reforms to include other sectoral ministries and community groups.

In 2003 the Environment Department produced a series of Water Resources and Envi-

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**BOX: 3.1**

**A conceptual framework for water resources management in southern Africa**

The report Defining and Mainstreaming Environmental Sustainability in Water Resources Management in Southern Africa recommends a conceptual framework for sustainable water resources management that rests on three key principles.

1. Recognizing the environment as the resource base.
2. Recognizing the economic value of goods and services provided by water resources.
3. Mainstreaming environmental sustainability criteria into water resources policy and management.
ronment Technical Notes intended to improve the knowledge base for applying environmental management principles to water resources management. Each note provides a concise introduction to the theory and practice of one of eight water resources management issue areas: (1) environmental issues and lessons, (2) institutional and regulatory issues, (3) environmental flow assessment, (4) water quality management, (5) irrigation and drainage, (6) water conservation and demand management, (7) waterbody management, and (8) selected topics (interbasin transfers, desalinization, and climate change).

The ESW report Managing the Marine and Coastal Environment of Sub-Saharan Africa (2003) focuses on downstream, coastal, and marine issues and assesses trends in social transformation and ecosystem losses in the coastal nations of Sub-Saharan Africa. The study contributes to the development of a strategic agenda for addressing priority issues and areas in partnership with international, national, provincial, and local stakeholders, both public and private, and is an integral part of a much broader coastal zone management effort in the Africa Region. The report Economic Value of Coastal Resources in Palau (2004) assists the government of Palau in determining the economic value of coral reefs and water resources, including the economic value of natural resources, fisheries, tourism, and coastal protection value. Based on this economic valuation, a set of policy implications and recommendations is being prepared to help in informed decision making. A host of AAA studies in fiscal 2002–04 focused attention on water resources management at the country level. Vietnam Environment Monitor 2003, on water, for example, underscores the importance of water and environmental resources to the country’s social and economic development and highlights past and ongoing efforts in water resources development and management. The report identifies emerging environmental management challenges in the water resources sector and develops a set of indicators for monitoring changes. It includes subregional water profiles.

Issues relating to sanitation and hygiene, wastewater treatment, and water conservation also play a major role in improving health and living conditions. The Bank’s new Water and Sanitation Business Strategy, endorsed in 2003, identifies the safeguarding of the environment as one of the four thematic priorities that establish the business line for the sector. The Business Strategy emphasizes the growing concern about water scarcity in countries with rapidly growing populations and extreme climatic variability. It asserts that improved sanitation and wastewater management are essential for environmental protection, and it ties in with the targets for improving water supply and sanitation set by the Millennium Declaration and further elaborated at the World Summit on Sustainable Development (WSSD).

The multidisciplinary report Brazil: Managing Water Quality (2003) offers a good example of mainstreaming environmental issues into the design and discussion of sector-based projects. The report examines how environmental issues have been addressed in Brazil’s water sector within the contexts of the federal government’s activities and Bank sector operations. It illustrates the importance of integrated approaches to water quality management and pollution control in urban river basin settings, the need to prioritize invest-
ments in a resource-constrained environment, and the value of developing appropriate institutional and legal frameworks for sustainable river basin management at the municipal and state levels, as well as at the federal level. The report highlights the need for substantial investments in environment; potential investment requirements for urban sewerage alone are estimated at R$30 billion to R$40 billion (table 3.2).

Philippines Environment Monitor 2003 surveys water quality and the availability and pollution of surface, ground, and coastal waters, by region. It identifies the sources of water pollution, describes the effects of wastewater discharges on human health, and estimates the avoidable costs to fishery production, tourism, and public health stemming from pollution. The avoidable annual cost to health alone is estimated at 3.3 billion pesos a year, 2.3 billion pesos of which are direct income losses (table 3.3).

Apart from water resources management and coastal resources, several recent analytical studies have looked at issues related to wastewater management. Environmental

<table>
<thead>
<tr>
<th>Water-related diseases</th>
<th>Morbidity cases, age 15–65</th>
<th>Mortality, age 15–65</th>
<th>Losses in GDP (millions of pesos)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diarrhea</td>
<td>512,527</td>
<td>2,978</td>
<td>1,649.23</td>
</tr>
<tr>
<td>Cholera</td>
<td>179</td>
<td>—</td>
<td>0.04</td>
</tr>
<tr>
<td>Typhoid and paratyphoid</td>
<td>7,710</td>
<td>663</td>
<td>348.53</td>
</tr>
<tr>
<td>Viral hepatitis</td>
<td>3,429</td>
<td>—</td>
<td>0.71</td>
</tr>
<tr>
<td>Diphtheria</td>
<td>15</td>
<td>—</td>
<td>0.00</td>
</tr>
<tr>
<td>Infectious hepatitis</td>
<td>—</td>
<td>571</td>
<td>296.01</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2,294.52</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: GDP, gross domestic product. GDP per capita per year (2000 prices): 43,167 pesos. GDP per capita per day (2000 prices): 69 pesos. Morbidity cases: 10 days for typhoid; 3 days for other waterborne diseases. Mortality: income loss to economy estimated at 12 years.


**Energy and mining**

The latest progress implementation report of *Fuel for Thought* (1999), the World Bank’s environmental strategy for the energy sector, notes considerable progress in promoting more efficient use of traditional fuels and their replacement by modern ones in order to protect human health from urban outdoor air pollution. In several countries, energy-environment reviews are being carried out that address cross-sectoral environmental impacts associated with energy production and consumption at the local, regional, and global levels. The *Energy-Environment Review (EER) Policy Note* (2004) for Iran, for example, recounts the process and achievements of the EER in Iran with special reference to the use of cost-benefit analysis as a tool for diagnosis, communication, and the framing of solutions. The report makes recommendations for actions to be taken by the government to realize more efficient use of resources and a diminution of other environmental impacts without causing adverse effects on other media, such as water and soil.

Other analytical work on energy and environment issues has been financed under the joint UNDP—World Bank Energy Sector Management Assistance Programme (ESMAP). Recent ESMAP papers include *Household Fuel Use and Fuel Switching in Guatemala* (2003), which suggests that expenditure, education, household size, region, ethnicity, electrification status, and gender composition, as well as prices and opportunity costs of firewood, are important in influencing fuel choice. Another ESMAP paper, *The Population, Energy and Environmental Program (EAP): An Initiative for Understanding and Sustainable Development in the Amazon Region* (2002), follows the origins, progress, and results of the Energy and Environmental Program, which seeks to achieve understanding through dialogue and the formulation of initiatives encouraging the integration and development of hydrocarbon projects in a way compatible with the sustainable development of the Amazon region.

Two recent studies look at the restructuring of the gas sectors in Turkey and Russia. In Turkey the *Gas Sector Strategy Note* (2004) serves to assist policymakers by proposing a pragmatic and flexible program of change that will enable Turkey to develop a modernized gas market structure. The report summarizes a strategy for accelerating the liberalization of the natural gas market in Turkey in line with the objectives of the Natural Gas Market Law of 2001 and makes recommendations in four key areas: water, energy, solid waste, and natural resource management. *Reform of the Russian Gas Sector* (2004) identifies structural issues and key challenges in the Russian gas sector and offers several recommendations for reform of the natural gas sector. *Lebanon: Hydrocarbon Strategy Study* (2004) seeks to assist the government of Lebanon in formulating a comprehensive, long-term strategy for the future development of the hydrocarbon industry in Lebanon and, in particular, the introduction and utilization of natural gas (see box 3.2).

Some studies focus on the impacts of fuel choice on indoor air quality. *India Household Energy, Indoor Air Pollution, and Health...*
(2002) presents specific policy measures for increasing the effectiveness of energy sector interventions aimed at reducing indoor air pollution, such as provision of better stoves and fuels, with a particular focus on poorer customers. It also looks at the determinants of success for a stove program, drawing on lessons from six best-practice case studies and from international experience.

The mining sector has the potential to cause significant environmental problems, including soil, air, and surface and groundwater pollution and land degradation that can affect the health and safety of nearby communities. In September 2001 the World Bank Group launched a consultative Extractive Industries Review to discuss with concerned stakeholders its future role in the extractive industries. After completion of the consultation process, the Review Committee issued a final report in December 2003 that included recommendations designed to guide involvement of the World Bank Group in the oil, gas, and mining sectors. The formal response of World Bank management to the review's recommendations is still in the public consultation stage, but the Bank is already acting to incorporate most of the recommendations into its programming and operations.

The Bank is also carrying out analytical work such as the Review of the Environmental and Social Policies and Practices for Mining in Mongolia (2003), which examines mining practices in the Zaamar and Tolgoit areas and identifies the main environmental and safety issues. The report proposes piloting environmental and socioeconomic baseline studies in the Tsagaan-Suvargin district, strengthening institutional capacity in the inspection system, and initiating social management of the mining sector, including compensation for lost land use and relocation assistance. Indonesia Environment Monitor 2003 describes Indonesia's mining sector, which consists of large-scale, medium-scale, and artisanal and small-scale mines. The report estimates the annual costs and benefits from mining activities in Indone-

**BOX 3.2.** Lebanon Hydrocarbon Strategy Study

The study summarizes the expected benefits from the introduction of natural gas into the Lebanese energy market:

1. **Reduction of power production costs.** The conversion from fuel oil to gas by major power plants in Lebanon has been estimated to generate annual savings between $90 million and $140 million. In addition, estimated savings of about $10 million annually would result from reduced operation and maintenance costs.

2. **Environmental benefits.** The introduction of natural gas is also expected to have a significant positive impact on the environment, especially on air quality. The potential benefits to Lebanon have been estimated in terms of avoided damage costs, and the results indicate a reduction in environmental and health damages of between $740 million and $1.8 billion for the period 2005–20.

Small-scale mining in Tolgoit, Mongolia
sia (table 3.4). Compared with large-scale mining, which has had a relatively limited impact on the country’s environment, artisanal and small-scale mining operations tend to be heavy polluters relative to their output.

Transportation

Like the energy sector, urban transportation has a significant impact on climate change, air quality, and human health. Recognizing this, the Urban Transport Strategy (2002) incorporates environment as an important element. The strategy identifies quality of life of the poor as an area of focus. Recognizing that poor people tend also to be the most vulnerable to environmental pollution, the strategy highlights the need to better understand the environmental impacts of the urban transportation sector through targeted sector work, technical assistance, incentive mechanisms, and infrastructure lending.

A World Bank Technical Paper, Urban Air Quality Management: Coordinating Transport, Environment and Energy Policies in Developing Countries, looks at the key issues involved in mitigating vehicle emissions that cut across sectors, examines the priorities for air quality management programs, and reviews experience, including that of the Bank, with air quality management efforts. It draws lessons from this assessment and offers recommendations for priorities in developing coordinated assistance strategies in the environment, urban transportation, and energy sectors (box 3.3).

Two Environment Monitors in the East Asia and Pacific Region focus on outdoor air quality. These reports document the sources of pollution and air quality indicators, provide estimates of the health and nonhealth impacts of air pollution, and discuss policy responses to air quality issues. The 2002

**BOX 3.3**

**Key steps in developing a pollution abatement strategy**

1. **Identify the main environmental concerns** on the basis of assessment of risks to human health and environmental resources and relative source contributions.

2. **Use cost-effectiveness as the primary criterion** for selecting optimal strategies across sources and sectors.

3. **Build mechanisms for cross-sectoral coordination** to implement the selected strategies.

---

Table 3.4 Estimates of annual costs and benefits of mining activities, Indonesia (millions of U.S. dollars)

<table>
<thead>
<tr>
<th></th>
<th>Environmental expenditures</th>
<th>Land reclamation[^a]</th>
<th>Productivity lost (annualized over 7 years)</th>
<th>Value of Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large-scale/coal</td>
<td>10</td>
<td>5–7</td>
<td>1,300</td>
<td></td>
</tr>
<tr>
<td>Large-scale/metal</td>
<td>65</td>
<td>100</td>
<td>3,500</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(500)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medium-scale/coal</td>
<td>3</td>
<td>4–6</td>
<td>82</td>
<td>425</td>
</tr>
<tr>
<td>Artisanal/small-scale</td>
<td>No data</td>
<td>177</td>
<td>(1,000)</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>78</strong></td>
<td><strong>286–290</strong></td>
<td><strong>82</strong></td>
<td><strong>5,225</strong></td>
</tr>
</tbody>
</table>

[^a]: Annual equivalent of rehabilitation cost over 10 years at a 12 percent discount rate. Numbers in parentheses refer to estimates of total reclamation costs over a 10-year period.
Monitor for the Philippines uses graphics to effectively highlight trends in air quality indicators. Both the Philippines Monitor and the Thailand Monitor for 2002 explore the linkages between air pollution and health. For both reports, background studies were commissioned to estimate the costs of the health impacts of fine particular matter (PM$_{10}$) in selected urban areas (for Thailand, see table 3.5). Findings from public perception surveys commissioned for both reports offer clear guidance to public policy decision makers. Thus, the Metro Manila survey indicated that 72 percent of the residents surveyed were alarmed by air pollution and that 73 percent did not believe the government was doing enough to control it. Similarly, three out of four Bangkok residents rated air pollution as the most significant pollution problem they face while expressing skepticism about the prospects of seeing it reduced.

A retrospective study, Ten Years of Progress and Challenges in Urban Air Quality Management in India (2004), presents an analysis of urban air pollution data with a focus on particulate air pollution from 1993 to 2002 in Delhi, Kolkata, Mumbai, Hyderabad, and Chennai. The report investigated the main factors affecting air quality in each city, as well as significant differences among cities. By drawing lessons on actions taken to improve urban air quality, this study contributes to the continuing policy discussions on this issue in India. Smaller sections of other studies, such as the Mongolia Environment Monitor 2004 and the Iran Energy-Environment Policy Note (2004), include discussions on air pollution.

### Agriculture, Fishing, and Forestry

Agriculture depends fundamentally on natural resources and has an important role in their conservation. This is emphasized in the updated version of the Rural Development Strategy, which was endorsed by the Bank’s Board of Executive Directors in October 2002. The strategy promotes optimizing the use of the natural resource base to meet agricultural productivity goals and to protect the long-term productivity and resilience of natural resources. It notes that protecting natural resources and the environment will require greater efforts to ensure the sustainability of intensive agricultural production systems, as well as careful management of natural re-

<table>
<thead>
<tr>
<th>City</th>
<th>PM$_{10}$ (ìg/m$^3$)</th>
<th>Population (millions)</th>
<th>Mortality rate</th>
<th>Excess deaths</th>
<th>Chronic bronchitis cases (millions of dollars)</th>
<th>Cost (millions of dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangkok</td>
<td>64</td>
<td>5.7</td>
<td>0.0065</td>
<td>1,092</td>
<td>4,550</td>
<td>424</td>
</tr>
<tr>
<td>Chiang Mai</td>
<td>57</td>
<td>1.6</td>
<td>0.00985</td>
<td>390</td>
<td>1,080</td>
<td>56.8</td>
</tr>
<tr>
<td>Nakhon Sawan</td>
<td>51</td>
<td>1.1</td>
<td>0.0058</td>
<td>134</td>
<td>630</td>
<td>26.1</td>
</tr>
<tr>
<td>Khon Kaen</td>
<td>66</td>
<td>1.8</td>
<td>0.006</td>
<td>324</td>
<td>1,476</td>
<td>59.2</td>
</tr>
<tr>
<td>Nakhon Ratchasima</td>
<td>51</td>
<td>2.6</td>
<td>0.0055</td>
<td>286</td>
<td>1,426</td>
<td>56.8</td>
</tr>
<tr>
<td>Songkhla</td>
<td>41</td>
<td>1.2</td>
<td>0.0061</td>
<td>104</td>
<td>464</td>
<td>21</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>14</strong></td>
<td><strong>2,330</strong></td>
<td><strong>9,626</strong></td>
<td><strong>643.9</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: PM$_{10}$ is fine respirable particulate matter 10 microns or less in aerodynamic diameter; ìg/m$^3$, micrograms per cubic meter.
sources in less favorable and more fragile production environments.

Land resources management is an example of the application of both the environment and natural resource management (ENRM) theme and the rural development theme. *Land Policy and Land Reform in Sub-Saharan Africa: Consensus, Confusion, and Controversy* (2004) addresses the establishment of secure and formalized property rights in land and the redistribution of property rights in land (the transfer of land from large to small farmers). *Assessment of Potential Impacts of Social Land Concessions* (2004) focuses on understanding the impacts of alternative policy measures that will regulate access to and utilization of land in Cambodia.

A number of strategic upstream environmental ESW and TA studies focus on the linkages between sustainable rural development and natural resource management and explore core agriculture, fishing, and forestry sector issues. Examples include *Building a Sustainable Future: The Africa Region Environment Strategy* (2002); the *Mongolia Forestry Sector Review* (2003); the *Biodiversity Strategy for the Europe and Central Asia Region* (2003); and the *Africa Soil Fertility Recapitalization Policy Note* (2004).

In addition to the studies identified in this review, as many as 38 ESW and TA studies managed by the Rural Sector Board in fiscal 2002—04 focus primarily on ENRM issues.

*Agriculture*. The Colombia Agroecology study (2003) reviews the potential for agroecological activities and proposes an incentive framework to support the development of agroecology in the country. The report presents an evaluation of international practices on agroecology, with special emphasis on the conditions for the success or failure of the recommended policy instruments and incentive frameworks. It includes a comparative analysis of government policies to support agriculture and World Trade Organization commitments.

*The Logic of Deforestation of the Brazilian Amazon* (2003) strives to understand the dynamics and logic of deforestation in Brazilian Amazonia by identifying the main agents involved in the process, the economic motives behind their activities, and the possible economic returns and by evaluating in monetary terms the economic and social costs of deforestation compared with sustainable forest management. The study confirms that large and medium-size cattle-ranching operators are the principal agents responsible for deforestation. The policy recommendations include (a) changing the focus of policies toward cattle ranchers, as the key driving force of deforestation, while recognizing their interests and private economic gains, and (b) formulating policies to halt further expansion of the frontier in areas that are still unaffected and to encourage intensification of agriculture and cattle ranching in areas undergoing consolidation.

*Forestry*. In October 2002 the World Bank’s Board of Executive Directors approved a new *Operational Policy on Forests* and endorsed a new *Forest Strategy* that supports the policy. These documents chart a path for the Bank’s engagement in forests that is designed to attain the goal of poverty reduction without jeopardizing the environmental values that are intrinsic to sustainability. This balance will be achieved through a more proactive approach
to identifying and protecting critical forest conservation areas while supporting improved management of production forests outside these areas. The Forest Strategy’s objectives of conservation and wise use of forest ecosystems are fully consistent with those embodied in the Environment Strategy.

Analytical work in forestry in fiscal 2002–04 with a focus on environmental themes includes forest policy strategies, policy notes, and investigative studies. The *Indonesia Forest Policy Strategy* (2003), for example, presents arguments on five strategic opportunities (box 3.4) to support good governance in decentralized forest management with the aim of attaining the closely related goals of sustainable forest and natural resource management and poverty reduction. Although the strategy focuses on the forestry sector, the principles apply equally to decentralized natural resource management in general. The report includes a section on donor responses, as well as an excellent table on needs and opportunities for donor assistance to the forest sector that identifies the Bank’s comparative advantage.

The *Mongolia Forest Sector Review* (2003) analyzes how potential developments and changes in the forest sector can more effectively support the rural poor in that country. The findings served as direct input to the Mongolia Country Assistance Strategy. The review recommends forming consultative groups on forestry to work with government agencies on developing prioritized action plans and coordinating appropriate technical assistance. It suggests pilot projects in community forest management, major expansion of the improved household stove program, and feasibility studies and “seed” support for large-scale commercial production of briquettes.

**BOX 3.4**

**Strategic opportunities for supporting good governance in decentralized forestry land management in Indonesia**

1. Better district-level service delivery in support of good governance of natural resources
2. Community-based forestry resource management integrated with local governance from the village level to the district government level
3. Strengthening of analytical capacity for reform of sectoral and related policies and institutions, coupled with effective outreach of the knowledge gained.
4. Specific initiatives as catalysts for reform, e.g., control of illegal logging and protection of biodiversity
5. “*Bridging the divides*”: mainstreaming of relevant aspects of the above measures in other Bank projects

*Causes of Deforestation in the Amazon* (2003), mentioned earlier in this chapter, aims at achieving coherence and a better understanding of the factors associated with the expansion of deforestation in Brazil and the public policies attempting to arrest it. The main contribution of the study is its demonstration that beef cattle ranching in eastern Amazonia and on the consolidated frontier is highly profitable from the private perspective and that it produces rates of economic return higher than those obtained from the same activity in the country’s traditional cattle-ranching areas. Using a limited environmental valuation, the study estimates the economic costs of deforestation in Amazonia in monetary terms, which enables quantification and comparison of benefits (table 3.6).
**Fishing.** Two recent ESW reports focus on the fishery sector. The *Guinea-Bissau Fishery Strategy Sector Note* (2004) and the *Republic of Senegal Fishery Strategy Sector Note* (2004) both aim to promote the sustainable management and development of the fisheries sector. Both reports include an assessment of (1) the potential of the fisheries resources; (2) current gaps in fisheries resource management; (3) cost and benefit sharing between national and international operators in the sector; and (4) specific actions and next steps necessary to rationalize sector governance (i.e., fisheries resource management, benefit distribution) and improve the development of local fisheries and benefit sharing.

**INTEGRATING ENVIRONMENT INTO POLICIES AND INSTITUTIONS**

In order to bring about long-term economic growth and sustainable development, the Environment Strategy stresses the need to support policy, regulatory, and institutional reforms and sustainable private sector development in client countries. This section surveys the World Bank’s analytical work in a number of areas related to environmental regulations and institutions. The work includes the use of strategic analytical tools such as country environmental analysis (CEA) and strategic environmental assessment (SEA), among others (see figure 3.5). Other focused analytical work includes institutional capacity analyses, public environmental expenditure reviews, and support to client countries in strengthening their environmental assessment systems and practices.

**Country environmental analysis (CEA)**

The World Bank Environment Strategy identifies country environmental analysis as a key upstream analytical tool for helping client countries define their environmental priorities and for influencing decisions on policies and programs. The CEA approach goes beyond the traditional general analysis of environmental issues in review papers to evaluate systematically the environmental priorities of development in client countries, the environmental implications of key policies, and countries’ capacity to address their priorities.

The objective of CEA is to provide a framework for systematically linking country-level environmental analytical work with the strategic planning process and to facilitate

<table>
<thead>
<tr>
<th></th>
<th>Annual value</th>
<th>Present value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Discount rate (%)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct use value</td>
<td>37.7</td>
<td>377</td>
</tr>
<tr>
<td>Timber products</td>
<td>28.5</td>
<td>285</td>
</tr>
<tr>
<td>Nontimber products</td>
<td>0.2</td>
<td>2</td>
</tr>
<tr>
<td>Ecotourism</td>
<td>9.0</td>
<td>90</td>
</tr>
<tr>
<td>Indirect use value: carbon stocking</td>
<td>18.0</td>
<td>180</td>
</tr>
<tr>
<td>Option value: bioprospecting</td>
<td>21.0</td>
<td>210</td>
</tr>
<tr>
<td><strong>Existence value</strong></td>
<td>31.2</td>
<td>312</td>
</tr>
<tr>
<td><strong>Total (rounded)</strong></td>
<td>108</td>
<td>1,080</td>
</tr>
</tbody>
</table>

Table 3.6  Estimates of the costs of deforestation in Brazilian Amazonia (U.S. dollars per hectare, unless otherwise specified)
both dialogue within a country and coordination among development partners. CEAs have been completed in three countries and are under way in another nine. (See figure 3.6; for more information, see http://www.worldbank.org/cea.) In fiscal 2004 a report was prepared on international experience in developing country-level environmental analytical tools (see box 3.5).

In fiscal 2002—04 CEAs were completed in Belarus, the Arab Republic of Egypt, Serbia and Montenegro, and Tunisia. Additional new CEAs were launched in several countries, including India, Ethiopia, the Dominican Republic, and Bosnia and Herzegovina. In India the report Uttar Pradesh Environment Monitor (2004) uses the driving force—pressure—state—impact—response framework to analyze seven priority environmental issues: water pollution, water shortages and flooding, urban outdoor air pollution, indoor

**BOX 3.5**

**International experience with country environmental analysis**

For more than a decade, the World Bank and other international development organizations, nongovernmental organizations, and client countries have been developing country-level environmental analytical tools to provide inputs to development policies regarding sustainable development issues. The report *Country Economic Analysis: A Review of International Experience* examines international experience with such tools, in particular those prepared and used by multilateral and bilateral donor organizations.

The main purpose of the paper is to review and catalog the key features of selected tools and to help guide the reader to databases and organizations that provide further information. The paper illustrates the richness and variety of the tools available for undertaking country-level environmental analytical work.
air pollution, solid waste management, land degradation, and forest and biodiversity loss. This framework is used effectively to organize information and analyses from a variety of sources and to present in tabular form the responses from a variety of government departments as a first step toward promoting coordination.

The Country Environmental Analysis for Serbia and Montenegro (2002) reviews the existing situation in the environment sector, identifies priority areas for policy changes or investments, and considers the role of the government, the private sector, and donors in implementing this agenda. The CEA assesses macroeconomy-environment linkages and measures that affect the long-term sustainability and financial viability of the priority area. The aims of the Tunisia Country Environmental Analysis (2003) are (a) to facilitate the integration of environmental issues into the development strategies of other sectors that have a demonstrated impact on the sustainable development of the country and (b) to improve, adapt, and strengthen institutional capacity and decision-making processes in support of the objective of environmental mainstreaming. The Dominican Republic CEA (2004) includes in-depth, comprehensive coverage of environmental issues and the legal, institutional, and policy framework. It also sets forth recommendations for institutional and policy reforms and outlines the role of the Bank in supporting the country’s Secretariat for Environment and Natural Resources in reform efforts.

Some CEAs are more specific, focusing on estimating the costs of environmental degradation. Cost Assessment of Environmental Degradation in Egypt (2002) and Costs of Environmental Degradation in Morocco (2003) represent a first step toward the use of envi-
vironmental damage cost assessments for priority setting and as an instrument for integrating environment into economic and social development by providing estimates of damage and remediation costs for several areas of the environment (see box 3.6). These studies also provide an analytical framework that can be applied periodically.

**Strategic environmental assessment (SEA)**

Strategic environmental assessment provides a framework for evaluating environmental linkages at the sectoral, regional, or policy level. The Environment Strategy suggested using SEAs to address complex cross-sectoral environmental issues and to integrate environment at early stages of sectoral decision making and planning. Based on its review of pertinent international experience and its own practice, the World Bank has adopted the following interim operational definition for SEA:

SEA is an approach for upstreaming environmental and social issues to influence development planning, decision making, and implementation processes at the strategic level.

Bank experience points to two broad types or interpretations of SEA. One is derived from classic environmental impact assessment (EIA) approaches and views SEA as a methodology for assessing the environmental impacts of a specific proposed policy, plan, or program (PPP). The other interpretation owes more to regional planning or policy analysis perspectives and views SEA as a process for incorporating environmental objectives into PPP preparation; this is sometimes described as an “objective-led” approach (see figure 3.7). The flexibility of SEAs offers various possibilities for influencing the quality and outcomes of a range of operations, with the emphasis on helping clients mainstream environmental sustainability into their policies, programs, and plans.

In 2001 the World Bank commissioned a background paper on SEA that was discussed internally and was published as background for the Environment Strategy. A review of Bank experience with sectoral and regional environmental assessment in lending activities since the late 1980s demonstrates the existence of a strong foundation for initiating a Bank-wide SEA Structured Learning Program. Box 3.7 lists specific examples of sectoral and regional environmental assessments that have been prepared with World Bank assistance over the past decade. Bank SEA work is increasingly being successfully integrated into lending operations, as opposed to self-standing AAA.

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**BOX 3.6**

**Costs of environmental degradation in Egypt and Morocco**

**Egypt.** The damage cost of environmental degradation in 1999 is estimated at 3.2 to 6.4 percent of gross domestic product (GDP), with a mean estimate of 4.8 percent. Of the total damage cost, about two-thirds comes from damage to health—mainly due to lack of safe water and sanitation and to air pollution; the other third stems from natural resource degradation, in particular, soil degradation.

**Morocco.** The annual damage cost of environmental degradation in Morocco for 2000 is estimated at 2.75 to 4.65 percent of GDP. The cost of water resources degradation and inadequate water supply and sanitation represents the largest share (1.0 to 1.45 percent of GDP), followed by indoor and outdoor air pollution (0.6 to 1.5 percent).
SEA has been collected and is available online as part of this learning program (see http://www.worldbank.org/sea).

**East Asia and Pacific Region Environment Monitors**

The annual *Environment Monitor* series initiated in 2000 in the EAP Region presents snapshots of key environmental trends in individual client countries. Its purpose is to inform stakeholders and the general public about key environmental changes as they occur, in an easy-to-understand format, with the aim of engaging these audiences. Current programming calls for a general country monitor to be issued every five years. In the intervening years, the publication focuses on specific themes. Using charts and graphs, the Monitors benchmark trends in environmental indicators in areas such as water and air quality and natural resource conservation (see figure 3.7).
3.8 for an example). In some cases the Monitors also provide an overview of the country’s legal and institutional framework.

Between 2000 and 2004, 17 Environment Monitors were completed in 7 East Asian countries (see figure 3.9). Whereas initially the Monitors focused on the state of the environment and on trends, subsequent Monitors have begun to put forward action plans and have included more information on institutions. For example, the Vietnam Environment Monitor 2002 offers a preliminary analysis of institutional capacity, with relevant indicators. The Papua New Guinea Environment Monitor 2002 reviews institutional responsibilities and the legal framework for each of its five thematic sections—land and people, mining, oceans and inland water resources, water resources and environmental health, and risk and disaster management—and describes the overall structure of the Department of Environment and Conservation. The Cambodia Environment Monitor 2003 includes data on staffing and budget allocations in the central, provincial, and district offices of the Ministry of Environment. This information sets initial benchmarks against which to measure trends over time.

Public environmental expenditure reviews (PEEs)

Public environmental expenditure reviews are becoming an important tool for providing accurate information to environment and finance ministers and to civil society on the sources and uses of funds for environmental activities. PEEs have been recently completed or are under way in several countries, as independent reports or as substantive input by environmental specialists into traditional public expenditure reviews. The Ukraine Public Environmental Expenditure Review...
Aligning AAA with the Environment Strategy: A Qualitative Review

Anjali Acharya, Milen Dyulgerov and Eri Tsutsui

(2003) informs the country’s programmatic structural adjustment loan through a detailed analysis of Ukraine’s system of environmental expenditure, with a particular focus on public expenditures. It examines the extent to which the present system meets national environmental objectives and identifies ways in which it can be improved and made more cost-effective (see box 3.8). Another report, Environmental Sequencing Strategies for EU Accession—Priority Public Investments for Wastewater Treatment and Landfill of Waste (2004), reviews the Bulgarian government’s strategies for public expenditure required for compliance with the European Union’s directives on urban wastewater and landfilling of waste to 2015. The report is aimed at helping the government intensify the internal dialogue on the planning of public finance for compliance.

Despite the importance of public expenditures for a country’s environmental policy, regulatory, and institutional framework, experience with PEEs is still modest, and the methodologies are diverse. The Environment Strategy Paper Public Environmental Expenditure Reviews: Experience and Emerging Practice (2003) aims at filling the knowledge gap by comparing different approaches and distilling best practice. The report summarizes the findings of a review of 10 PEEs conducted by the World Bank, examines the definitions and classification frameworks for environmental expenditure that have been used in the World Bank and elsewhere, and reviews donor experience with PEEs in an effort to establish a general methodological framework for carrying out PEEs in the future.

Environmental assessment capacity evaluation

Environmental assessment (EA) systems are an important part of a country’s environmental

BOX 3.8
Ukraine Public Environmental Expenditure Review

The objective of the Ukraine PEE was to identify how environmental expenditure can be made more effective. The review focused on answering the following key questions:

- Is the pattern of environmental expenditure consistent with national priorities and objectives?
- How efficiently are environmental expenditures allocated, and what actions can be taken to make the use of resources more efficient?
- Is overall expenditure on environmental protection adequate? Is the division between the public and private sectors appropriate?
- Are the sources of finance efficient from a public finance perspective, and what actions can be taken to increase the efficiency with which such funds are mobilized?
regulatory and institutional framework. The World Bank has supported the strengthening of EA capacity in client countries through a variety of instruments, including technical assistance programs, training activities, and development grants. Each Bank region has selected an array of tools adapted to the conditions of its client countries. In many cases, although substantial knowledge may exist about a country’s EA legislation and regulation, very little is known about on-the-ground implementation capacity and the effectiveness of the country’s EA system. The study How Well Is Environmental Assessment Working in Russia? (2002) was designed to improve knowledge in this area through a systematic assessment for possible replication elsewhere. For this assessment, the team developed a preliminary framework and piloted it at the federal level and in three selected regions of Russia (see box 3.9).

National environmental action plans (NEAPs)

Following the 1992 Rio Earth Summit, many countries began to develop strategies to address their environmental problems through national environmental action plans (NEAPs). The NEAPs are frameworks within which environment and sustainable development issues are identified and prioritized to form the foundation for a plan of action. The core of the framework consists of identifying the most appropriate policies, revising legislation, and modifying institutional structures or developing new ones.

In the 1990s the World Bank was one of the principal supporters of the NEAP process, and, along with other donors, it provided funding to support NEAP implementation in numerous countries. This assistance has diminished with the development of newer analytical tools such as the CEA. In fiscal 2002—04 the Bank assisted in the completion of only two NEAPs, those for Turkmenistan and Togo.

The Turkmenistan National Environmental Action Plan (2003) contains extensive information, covering, among other topics, environmental education and international environmental agreements. The NEAP process is described in detail, with diagrams that may be useful in the development of similar plans. The Togo National Environmental Action Plan

BOX 3.9
Evaluating Russia’s environmental assessment capacity

In May 2000 the Russian government abolished the State Committee for Environmental Protection and assigned its functions to the Ministry of Natural Resources. These developments gave rise to concerns about the soundness of the environmental management system. A study was undertaken to examine the implementation capacity and effectiveness of Russia’s environmental assessment (EA) system. The study placed special emphasis on the following aspects of the EA system:

- **Proportionality.** The scope of EA should be commensurate with the environmental impact of development actions.
- **Equity.** The process should be transparent and applied equitably, without bias toward any party.
- **Efficiency.** The process should be undertaken within the minimum time and resources consistent with the required scope of assessment.
- **Effectiveness.** The process should meet its mandated requirements and objectives, consistent with accepted international principles.
Anjali Acharya, Milen Dyoulgerov and Eri Tsutsui (2003), by contrast, describes in very general terms the state of the environment, the country’s environmental institutions, and the environmental and social impacts of the main economic sectors and outlines a plan of action for dealing with key environmental challenges. Consultations were held in the country’s five economic regions to identify priority issues and then to determine strategic options and policies to be reflected in regional environmental action plans.

**Building on Synergies between Local and Global Benefits**

Protecting the global and regional commons is a key component of the World Bank’s Environment Strategy. Developing countries are likely to be most threatened by global environmental impacts because larger shares of their populations depend on natural resources for their livelihoods and because these countries are less able to afford mitigation and adaptation measures.

The Bank’s analytical work to protect the global and regional commons aims to strengthen the positive linkages between poverty reduction and environmental protection. Many interventions designed to reduce poverty by improving local environmental quality and sustainable natural resource management also yield regional and global benefits. For example, community-based forest management projects can support sustainable livelihoods while reducing forest loss, preserving biodiversity, and creating carbon sinks.

**Biodiversity**

Genetic varieties, species, and plant and animal communities have critical uses as food, sources of new crop varieties, commodities, medicines, pollinators, soil formers, and moderators of climate and hydrology. Biodiversity loss can undermine client countries’ economic development both now and in the future. During fiscal 2002—04, the Bank undertook analytical work on biodiversity issues in the form of strategy documents, action plans, and portfolio reviews.

The *Europe and Central Asia (ECA) Biodiversity Strategy* (2003) highlights the importance of incorporating biodiversity conservation and management issues into Bank analytical work, including agricultural and environment reviews but also public expenditure, governance, and economic reports. It points out the necessity of mainstreaming biodiversity conservation and management into Bank investment operations such as land reform and agricultural services, irrigation and drainage, water and wastewater, and river basin, forestry, and watershed management. The strategy further discusses the development of sustainable financing mechanisms. Because of the public-good
aspect of biodiversity conservation, public funding is one such mechanism, but gradual development of other sources of finance should also be promoted.

The *Africa Biodiversity Portfolio Review* (2002) evaluates the portfolio of biodiversity projects implemented in Africa during the past decade in the context of the questions enunciated in the 2001 *Strategic Framework for Conservation of Biological Diversity in Sub-Saharan Africa* and the 2000 *Strategic Framework for Linking Global Environment to National Sustainable Development for Sub-Saharan Africa*. For its evaluation, the review uses seven categories: (1) geographic focus and system boundaries, (2) design, (3) institutional setting, (4) financing structures, (5) mainstreaming, (6) sustainability, and (7) integration of lessons learned.

Analytical work aimed at preparing and updating biodiversity action plans and strengthening conservation capacity were carried out in Slovenia, Indonesia, and Mongolia. The *Slovenia Biodiversity Conservation Strategy* (2002) aims to prepare a biodiversity strategy and action plan to prioritize issues for the conservation and sustainable use of the country’s biodiversity and to identify actions to address these issues, in accordance with Slovenia’s obligations under the Convention on Biological Diversity. The *Indonesia Biodiversity Strategy and Action Plan* (2003) reviews the needs and priority actions outlined in the 1993 plan to identify what has been achieved and examine what could not be implemented and why. The new action plan presented for 2003—20 aims, among other things, at improving the ability of local communities to sustainably manage biodiversity on the basis of local knowledge and wisdom (see box 3.10).

**BOX 3.10 Traditional wisdom in marine biodiversity management in Indonesia**

The *sasi* system developed by traditional peoples in the eastern part of Indonesia regulates the utilization of natural forest and marine resources by indigenous as well as immigrant communities. In general, *sasi* consists of restrictions on entering, harvesting in, or carrying on any activity in a designated area for a given period of time. *Sasi* is based on religious regulations and has a penalty system and supervisory bodies consisting of village government, religious leaders, and other village elite. *Sasi* arrangements regulate, for example, sea cucumbers in Kei and Nolloth Islands, lompa fish in Haruku, and marine areas on the northern coast of Papua. In Haruku lompa may only be caught with nets and should not be taken as long as other fish are available. The start of *sasi* is determined by certain natural signs known to the local communities. If caught and convicted by the *adat* (village) council, violators face penalties that can take the form of social punishment (excommunication) or fines and property confiscation. Like many other traditions, however, the *sasi* practice is being eroded.

*Assessment of Biological Diversity Conservation of Mongolia* (2003) assesses current conservation measures and their management; laws and institutional arrangements for sustainable use of biodiversity; indigenous and traditional knowledge; impacts of tourism; and information and telecommunication systems in the special protected areas. In addition, it reports on a public survey on biodiversity conservation.

managing forest biodiversity over the past decade. The review includes all projects and project components financed through the International Bank for Reconstruction and Development (IBRD), the International Development Association (IDA), the Global Environment Facility (GEF), and the Rain Forest Trust Fund (RFT) that contribute directly to conservation and sustainable use of forest ecosystems and forest biodiversity. Looking ahead, the report highlights the importance of implementing the Bank’s new Operational Policy on Forests (OP 4.36) and emphasizes the need to mainstream biodiversity into regular development lending and poverty alleviation programs while minimizing the potential negative impacts of non—forest sector lending on forests and forest biodiversity.

An Environment Department publication, *Mainstreaming Biodiversity in Development: Case Studies from South Africa* (2002), provides best-practice examples and lessons learned in promoting biodiversity conservation in the context of sustainable development. Many of the case studies are relevant to other countries and other sectors, demonstrating synergies between biodiversity conservation and poverty alleviation, innovative solutions to shared needs, and opportunities to mainstream biodiversity at the local level as part of ordinary people’s lives.

*Thailand Environment Monitor: Biodiversity* (2004) focused exclusively on biodiversity and protected areas. Launched at the IUCN Conference in November 2004, the report presented six major challenges for conservation and sustainable use of Thailand’s biodiversity: integrating biodiversity conservation into economic planning and into production landscapes; improving protected area management; improving enforcement of existing biodiversity-related regulations; improving research on and monitoring of biodiversity; planning for the medium-and long-term financing of biodiversity conservation; and harnessing markets and the private sector for biodiversity conservation and sustainable use (see box 3.11).

In addition to the World Bank’s ESWs and TAs, there are several stand-alone publications on biodiversity. For example, *Biological Resource Management: Integrating Biodiversity Concerns in Rural Development Projects and Programs* (2002) examines how to better accommodate biological resource concerns in rural development projects where poverty alleviation and welfare improvement are the primary aims and considerations. In addition, a number of reports deal with payment for environmental services (conservation financing); these include *How Much Is an Ecosystem Worth? Assessing the Economic Value of Nature*.
Value of Conservation (2004) and Paying for Biodiversity Conservation Services in Agricultural Landscapes (2004). There are also portfolio reviews and case studies that summarize the efforts of the World Bank Group to support the efforts of client countries and partners to conserve and manage biodiversity in a sustainable way, such as Cornerstones for Conservation: World Bank Assistance for Protected Areas 1988—2003 (2003), and Ensuring the Future: The World Bank and Biodiversity 1988—2004 (2004).

Climate change
Climate change is projected to cause significant increases in famine and hunger in many of the world’s poorest areas. Decreasing precipitation will worsen conditions in many arid and semiarid areas, especially in Sub-Saharan Africa. Rising sea levels could displace millions of people from small-island states such as the Maldives and from low-lying delta areas of Bangladesh, China, and Egypt, while increasing temperatures could lead to a rise in the incidence of vector-borne diseases such as malaria and dengue fever.

The main objective of the Vietnam National Strategy Study on Clean Development Mechanism (CDM) (2003) is to analyze the country’s CDM potential and produce a strategy for the development of a CDM market. The report discusses a wide range of issues facing CDM implementation in Vietnam, including policy status, greenhouse gas (GHG) abatement potential, and market opportunity. It also analyses the institutional setup required. Projecting a dramatic rise in emissions from the energy sector, the report suggests that now is the right time for Vietnam to position itself in the CDM market.

National strategy studies (NSSs) were carried out in Ukraine and Indonesia in 2003 to promote the integration of global climate change issues into countries’ sustainable development. The National Strategy of Ukraine for Joint Implementation and International Emissions Trading (2003) examines how selling emissions credits could benefit Ukraine’s economy. The report reviews recent climate policy developments in Ukraine and in member countries of the Organisation for Economic Co-operation and Development (OECD) and includes an analysis of Ukraine’s GHG mitigation potential and costs (see table 3.7). It further explores market opportunities in GHG emissions reduction, points out capacity-building needs for participation in the Kyoto Protocol, presents project suggestions, and defines a plan of action to 2008. Highlighting the country’s lack of an adequate institutional infrastructure to deal with emissions credits, the report stresses the need to develop an appropriate legislative basis for regulating Joint Implementation with other countries or for applying the International Emissions Trading framework.

Climate Change and Agriculture: A Review of Impacts and Adaptations (2003), commissioned jointly by the World Bank’s Environment and Rural Development Departments, has a global focus. Its aims are (1) to survey the typology of primary measures undertaken at the macro and micro levels for adaptation to the impacts of climate change on agriculture and (2) to improve understanding of the underlying processes and conditions necessary for successful identification and design of appropriate adaptation measures for dealing with future climate change impacts in developing countries. The report emphasizes the benefits of considering mitigation and adapta-
tion concurrently, building on existing knowledge concerning the measures that developing countries could use to make their agricultural sectors more resilient to climate change. In addition to Bank analytical work, several reports on climate change have been issued by the GEF. For example, *Climate Change Mitigation in the Urban Transport Sector: Priorities for the World Bank* (2003), reviews the Bank’s urban transport strategy (2002), reflecting a concerted effort to identify priorities for the sector within developing countries. The study then compares these priorities with the emerging global environmental objectives of the GEF’s Operational Program.

The World Bank’s carbon finance initiatives, including the Prototype Carbon Fund (PCF), are viable and innovative mechanisms for combating global climate change by catalyzing a global carbon market that reduces transaction costs, supports sustainable development, and reaches and benefits the poorer communities of the developing world. The report *State and Trends of the Carbon Market Report 2004* shows a growing carbon finance market. The report cautions, however, that in order to profit from this market, developing countries and transition economies need to act quickly because it takes several years to develop an emissions reduction project, and there is no strategy for the time period beyond 2012.

### Ozone depletion

The World Bank assists client countries in meeting their ozone-depleting substance (ODS) consumption reduction targets for 2005 by formulating programs that support strategic interventions in sectors where ODSs continue to be used and, where necessary, by preparing project proposals for incremental cost funding from the Multilateral Fund for the Implementation of the Montreal Protocol (MFMP). *India: Strategy for the Phaseout of CFC in the Chiller Sector* (2002) is one example of the Bank’s work in this area. The report incorporates broader strategic context and project programmatic issues with the aim of providing Indian decision makers with a comprehensive assessment of the options they face and supporting the formulation of policy measures.

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**Table 3.7 Projected greenhouse gas (GHG) emissions and reduction potential, Ukraine**

(millions of tons of CO₂ equivalent)

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Energy-related CO₂</td>
<td>672</td>
<td>289</td>
<td>453</td>
<td>2,265</td>
</tr>
<tr>
<td>Other GHG emissions</td>
<td>242</td>
<td>96</td>
<td>151</td>
<td>755</td>
</tr>
<tr>
<td>CO₂ removals</td>
<td>–52</td>
<td>–52</td>
<td>–52</td>
<td>–261</td>
</tr>
<tr>
<td>Total GHG emissions, less removals</td>
<td>862</td>
<td>333</td>
<td>552</td>
<td>2,760</td>
</tr>
<tr>
<td>Kyoto assigned amount (rounded)</td>
<td>860</td>
<td>4,300</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surplus AAU—all gases (rounded)</td>
<td>300</td>
<td>1,500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surplus AAU-only energy-related CO₂ (rounded)</td>
<td>220</td>
<td>1,100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Additional reduction potential (&lt;8 $/t CO₂e)</td>
<td>150</td>
<td>750</td>
<td></td>
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</tbody>
</table>

*Note: AAU, assigned amount unit.*
technical assistance programs, and investment projects to be implemented through one of the MFMP implementing agencies. A number of study components were deployed to produce estimates of the incremental cost to India of complying with its Montreal Protocol obligations in the chiller sector and to assess the cost-abatement tradeoffs involved in accelerating the phaseout of CFC-based equipment (see figure 3.10).

The primary objective of India: Phaseout of Carbon Tetrachloride (CTC) (2004) is to develop a comprehensive sector strategy for the phaseout of use of CTC as a process agent in India. The strategy builds on the existing policies and ODS phaseout strategy of the government of India and is consistent with ongoing activities, such as the projects for chlorofluorocarbon (CFC) production and consumption sector phaseout and the proposed projects for CTC phaseout in the pharmaceutical sector. This report will serve as a basis for the development of a CTC production phaseout strategy and for the development of a policy framework that will be supportive of CTC phaseout in solvent and other emissive applications.

Several of these analytical studies also contribute toward developing countries’ commitments under the various international conventions on biodiversity, climate change, ozone depletion, and persistent organic pollutants (POPs). The convention on POPs, adopted in May 2001, is the most recent. A study in India, Issues and Options in Addressing the Objectives of the Stockholm Convention on Persistent Organic Pollutants in India and the South Asia Region (2004), assesses the opportunities and constraints associated with initiating and supporting activities.

Note: Based on manufacturers’ suggested life.
relating to POPs in partnership with India, other countries of South Asia, GEF, and other interested parties and stakeholders. In addition, several other stand-alone publications (not officially ESW) deal with issues relating to POPs. For example, Toxics and Poverty: The Impact of Toxic Substances on the Poor in Developing Countries (2002) takes a critical look at the linkages between toxic exposures and poverty and the implications for policy. The Global Pursuit of the Sound Management of Chemicals (2004) describes the international chemicals agenda from a historical and global perspective and reviews current international agreements, programs, and initiatives and current and emerging issues and opportunities related to sound chemical management.
The Environment Strategy recognized that complementary institutional realignment is required for achieving the adjustments in the strategic framework needed to address the environmental challenges of development and in Bank tools to assist our clients. The Strategy envisioned that most of the funding requirements associated with the proposed actions, including AAA strengthening and improved monitoring and reporting, would be met by realigning budget allocations in response to changes in work program priorities, by delivering on such priorities more efficiently, and by strengthening partnership work. A proportionally small incremental need for resources in the form of the Mainstreaming Fund for the Environment (MFE) was further identified, to bring about effective mainstreaming of the environment in the country assistance dialogue and programs. This section reviews progress toward institutional realignment in the context of efforts to strengthen AAA work through (1) improving funding and partnerships and (2) monitoring and reporting on Strategy implementation.

**FUNDING**

The Bank’s analytical work on environment and natural resource management is supported through a mixture of Bank budgetary allocations and Bank-managed donor trust funds. The latter—for example, the Trust Fund for Environmentally and Socially Sustainable Development (TFESSD)—have been playing an increasingly important role in financing analytical work on environmental issues, as discussed later in this chapter.

Looking to optimize the Bank’s budget allocations for ENRM AAA, the Environment Strategy envisaged that most of the funding requirements associated with the actions it proposed could be met by realigning allocations in response to changes in work program priorities and by delivering on these priorities more efficiently. A review of budgets for ESW and TA in fiscal 2002–04 reveals interesting spending patterns across regions and issues (see below). In addition, the Mainstreaming Fund for the Environment, also discussed in this section, was set up to provide supplemental resources to bring about effective
mainstreaming of environment in country assistance dialogues and programs.

**Bank budget for ESW and TA**

In line with the Environment Strategy’s emphasis on analytical work, the Bank has increased the budgets allocated to ENRM AAA. The review shows that in fiscal 2002—04, $22.0 million of Bank budgetary funds was devoted to ENRM analytical work. The Bank budget for environmental AAA increased from $6.4 million in fiscal 2002 to $7.0 million in fiscal 2003 and $8.6 million in fiscal 2004 (figure 4.1). Of the $22.0 million, 28 percent was allocated to environmental policies and institutions, 20 percent to water resources management, and 14 percent to pollution management and environmental health (figure 4.2).

A regional perspective on budget allocations for fiscal 2002—04 (figure 4.3) shows that the Africa and the EAP Regions allocated the largest amounts (about $4.7 million, or 21 percent of the Bank-wide allocation each) to analytical activities. About a quarter of the investments in Africa were dedicated to water resources management while a large proportion of the EAP funding went toward environmental policies and institutional issues. At around $4.1 million, ECA has also made considerable investments in AAA work allocating the largest portion of its budget on environmental policies and institutions. The LAC, SAR, and MNA Regions each spent between $2.0 million and $2.8 million on environmental analytical work. A high proportion of MNA’s budget for this work went for water resources management issues; in the other two regions priority has been given to environmental policies and institutional issues (38 percent in South Asia and 35 percent in Latin America and the Caribbean).

**Figure 4.1**

*ESW and TA budgets for ENRM compared with total Bank, fiscal 2002–04*

(Thousands of U.S. dollars)
Conclusions and the Challenges That Remain

Figure 4.2
Thematic distribution of ENRM ESW and TA budgetary allocations, fiscal 2002–04

- Biodiversity, 5% ($1,067)
- Climate change, 6% ($1,403)
- Other ENRM, 29% ($4,452)
- Environmental Policy & Institutions, 28% ($5,918)
- Water Resources Management, 20% ($4,438)
- Land Administration & Management, 7% ($1,620)
- Pollution Management & Environmental Health, 14% ($3,150)
- Other ENRM, 20% ($4,438)

Figure 4.3
Regional distribution of environmental ESW and TA budgets, fiscal 2002–04

- OTH 7%
- AFR 21%
- SAR 11%
- MNA 13%
- LCR 9%
- ECA 19%
- EAP 21%
- OTH 7%
Mainstreaming Fund for the Environment (MFE)

The Mainstreaming Fund for the Environment was established in April 2001 to support the implementation of the World Bank’s new Environment Strategy, which was adopted in the same year. Box 4.1 summarizes the criteria for selecting MFE activities.

In 2002 the Environment Department carried out a detailed review of progress in MFE-funded activities over the first 18 months of the program. About 20 task team leaders, resource management analysts, and sector managers were interviewed to collect the experiences of regional staff with the MFE, their views about the fund’s effectiveness, and their recommendations for improvements. The review found that the MFE is seen as a valuable instrument for addressing corporate priorities systematically and for mainstreaming the environmental agenda into Bank operations. MFE funds have been most useful in leveraging funds from country and sector management units for the purposes of mainstreaming environmental issues, providing seed money for developing innovative approaches and new methodologies, and improving flexibility and response time (figure 4.4). A review of fiscal 2003 and 2004 activities supported by the MFE is under way.

The following outputs and outcomes were achieved in fiscal 2002—04:

**Mainstreaming in PRSPs and PRSCs.** MFE activities in this category were undertaken in about 23 countries in fiscal 2002—04. They included poverty-environment workshops, training and capacity development, preparation of environment-poverty map overlays (see box 4.2), and integration of environmental indicators into poverty assessments and poverty reduction strategy credits (PRSCs). An improvement in environmental content between interim and full PRSPs as a result of MFE activities can already be observed, using a methodology developed by the Environment Department to review the incorporation of

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**BOX 4.1**
**MFE funding criteria**

Activities proposed for MFE funding must do one or more of the following:

1. Support the mainstreaming of environmental issues in IDA countries in accordance with World Bank, IDA-12, and IDA-13 commitments, with a strong emphasis on mainstreaming environment in PRSPs and poverty reduction strategy credits (PRSCs)
2. Link corporate environmental priorities with country programs, concentrating especially on up-front country-level diagnostic work to contribute to CAS preparation in priority countries
3. Facilitate cross-sectoral and cross-institutional approaches and work programs
4. Support regional and subregional environmental activities that focus on at least one of the above criteria.

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**BOX 4.2**
**Poverty-environment mapping in Albania**

MFE activities in Albania included a workshop on poverty-environment linkages and joint work with government officials to facilitate the incorporation of environmental issues into the PRSP final draft and the CAS. The CAS summarizes key environmental issues and includes an environment project that aims to protect Albania’s coastal and marine natural resources, promote sustainable tourism development, and reverse environmental degradation in a heavily polluted area where the health of the poor is in jeopardy.
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Subsequent reviews will further evaluate the effectiveness of MFE activities supporting the environmental dimensions of interim and full PRSPs.

**Country (or state) environmental analysis and input to CASs.** MFE funds have been successfully used to provide environmental inputs to CASs through the preparation of country- or state-level environmental analyses. Pilot analyses have been carried out in three countries with MFE support (for an example, see box 4.3). These analyses evaluate systematically the environmental priorities for development and poverty reduction strategies in client countries, the environmental implications of key policies, the countries’ institutional capacity to address their priorities, and their performance.

**Cross-sectoral and cross-institutional approaches.** In fiscal 2002—04 the MFE supported 27 cross-sectoral activities related to the integration of environmental issues through tools such as strategic environment assessment, which provides a framework for evaluating linkages with environment at the sectoral, regional, or policy level.

**Regional and subregional environmental priorities.** In fiscal 2002 very few MFE-supported activities addressed regional or subregional environmental issues. An example of one that did was the development of a framework for a regional integrated disaster management strategy in the Caribbean countries (see box 4.4). In fiscal 2003 and 2004, however, more regional activities were funded by the MFE. Examples include **Clean Air Initiatives (CAI)** in the LAC Region (2003) and **Poverty and Environment** in Africa (2004).
increased the environmental content of PRSPs and CASs. Initial MFE allocations were disbursed in accordance with the regions’ specific priorities. For example, the Latin America and the Caribbean Region used a good part of its MFE funds for the disaster management strategy for the Caribbean area. In Africa many environment- and water-related activities received MFE funding; South Asia emphasized urban air pollution; and in Europe and Central Asia the MFE supported a variety of inputs into CASs and PRSPs. Continued funding is needed to expand environmental mainstreaming to more sectors and countries and to additional regionwide activities.

Trust Fund for Environmental and Socially Sustainable Development (TFESSD)

Trust funds play an important and catalytic role in supplementing the Bank budget for analytical work and nonlending services. As part of the institutional realignment, the Environment Family has agreed with two donor countries—Norway and Finland—on a restructuring of their trust funds to align these funds with the objectives of the Environment Strategy. One such fund is the broad, multidonor, umbrella Trust Fund for Environmentally and Socially Sustainable Development (TFESSD), which encourages cross-sectoral work in environment, social development, poverty reduction, social protection, and human development issues and which has average resources of approximately $12 million per fiscal year for these four windows.

The TFESSD was set up in December 1999, initially as a Norwegian-funded comprehen-
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The trust fund’s environment window supports activities in the priority areas of action set out in the Environment Strategy: (a) strengthening analytical and advisory activities; (b) addressing environmental priorities through project design; (c) building country capacity for good environmental management; and (d) others.

Over the past few years, the TFESSD has come to play an increasingly important role in supporting the analytical underpinnings for mainstreaming environmental management efforts in the country dialogue and assistance programs. The active TFESSD portfolio as of October 31, 2004, stood at 144 projects. The environment window has 47 active projects, of which 37 (79 percent) are directed toward strengthening AAA work, one of the four priorities for action. As of October 2004, $24 million has been disbursed and committed to these projects. Figure 4.5 illustrates the distribution of the 37 projects, which are listed in annex H.

Focusing on poverty-environment linkages. Several projects funded by the TFESSD address poverty-environment linkages. For example, the Poverty-Environment Nexus project investigates the correlation between poverty, environmental degradation and health in the poorest regions of Cambodia, the Lao PDR, and Vietnam. Poverty-environment linkages are also being explored in Africa through several studies (see box 4.5). Egypt Poverty and Natural Resources seeks to determine the impacts of environmental factors, degradation of environmental resources, lack of basic infrastructure, and poor behavior practices on farmers’ incomes and people’s health in rural areas.

Figure 4.5
TFESSD projects (environment window) for strengthening AAA

- Environmental Governance, 16%, 6 projects
- Environment in Sectoral Planning and Programs, 24%, 9 projects
- Environment in PRSPs and CASs, 8%, 3 projects
- Methodology and Tool Development, 24%, 9 projects
- Poverty Environment Linkages, 28%, 10 projects

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BOX 4.5
Africa Strategic Environment and Poverty Program

The overall objective of the activities undertaken under the Africa Region environment program is to better understand the linkages between environment and poverty through a balance between new and innovative analytical work and institutional capacity-building activities. Some examples of studies under this program are as follows:

- *Household energy, environmental health, and poverty* (Ethiopia and Zambia)
- *Linkages between soil fertility (nutrient degradation) and poverty* (Ethiopia)
- *Linkages between natural resource management and poverty* (Tanzania–mainland and Zanzibar)
- *Sustainable water resources management and poverty* (Botswana, Malawi, Mozambique, South Africa, Zambia, and Zimbabwe, as well as regional partners—the Southern African Development Community and the New Partnership for Africa’s Development, or NEPAD)
- *Economic Analysis of Natural Resources Sustainability in Mozambique* (Mozambique)

*Environmental Income and the Poor,* for example, synthesizes existing data on environmental income for poor people in order to (1) improve the gathering of data on environmental income among the poor for poverty assessments; (2) enhance the targeting of natural resource interventions so as to contribute to the livelihoods of the very poorest; and (3) inform the policy debate on the role of environmental income as a safety net during periods of crisis and as a contribution to long-term poverty reduction.

Environmental health linkages are being explored through studies in South Asia and East Asia. In South Asia TFESSD funds supported cross-sectoral work on indoor air pollution in India, as well as a major evaluation of the impacts of rural water supply and sanitation programs on child health. In China two related studies are attempting to quantify the costs of air and water pollution (see box 4.6).

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**BOX 4.6**
Mainstreaming environmentally sustainable development (MESD) in China

The aims of the China MESD program, which consists of four separate trust funds, are to improve the effectiveness of the country’s environmental institutions and to strengthen the poverty-environment linkage in rural development. One trust fund is supporting the development of an environmental cost model (ECM), which quantifies the costs of water and air pollution in China by analyzing in detail the critical effects of water and air pollution on human health in particular but also on agriculture, forestry, materials and water scarcity and indoor air pollution. This study is closely related to the major component of another trust fund, *China: Valuation of Environmental Health Risk (VEHR) and Poverty Environment Linkages,* which focuses on the valuation of environmental health risks by setting specific prices on the environmental health burdens from water and air pollution.
The objective of the Iran Energy-Environment Review (EER) is to assist the government in better integrating environmental objectives with energy sector development and investments. In the transportation sector the Clean Air Initiative in Sub-Saharan African Cities promotes the adoption of urban air management strategies based on the reduction of pollution from motorized transport and helps raise awareness about the dangers of pollution and about preventive measures. Within this program, a major effort has been undertaken to eliminate lead from gasoline in Sub-Saharan African cities by the end of 2005.

Integrating environment into policies and institutions. The TFESSD has also funded activities that support environmental institutions. In the project Strengthening the Environmental Initiative of the New Partnership for Africa’s Development (NEPAD), for example, the trust fund contributed to strengthening the capacity of the NEPAD Secretariat to develop and implement the NEPAD Environmental Action Plan through support for the development of environmental assessment guidelines for NEPAD, a workshop on climate change for NEPAD member states, and information, travel, and logistical support. Funding for Environment Watershed Externalities and the Role of Local Institutions contributes to improving our collective understanding of the roles local institutions can play in internalizing natural resource externalities in the context of watersheds in India.

Building on synergies between local and global benefits. Finally, the TFESSD finances activities that address local-global environmental linkages. In Tanzania the project Options for Alleviating Poverty through Sustainable Management of Marine and Coastal Areas is designed to (1) assess best practice and identify feasible options for improved governance of coastal and marine resources in selected areas by developing long-term strategic plans; (2) carry out economic valuation of coastal and marine resources in locally, nationally, and globally significant “hotspots” along the Tanzanian coastline; (3) assess socioeconomic trends and poverty-environment linkages in coastal areas; and (4) identify the elements to be incorporated within a long-term program for sound governance of marine and coastal areas. The first activity funded under Mainstreaming WB/WWF Forest Alliance Targets in Africa Regional Country Programs co-financed an analytical piece and a case study tracing the dynamics and outcomes of Cameroon’s forestry policy reforms from the mid-1990s to the present.

Monitoring and Knowledge Sharing and Dissemination

Effective monitoring of the quality of the environmental AAA portfolio and improving its knowledge sharing and dissemination functions are critical for ensuring accountability and improving both the Bank’s and its clients’ capacity to learn from experience. The capacity to monitor the environmental content of the Bank’s AAA portfolio has greatly improved following the Bank-wide ESW reform process and the introduction of a new coding system to classify lending and nonlending activities. The Environmental Database developed by the Strategy Implementation Team now provides a one-stop portal for up-to-date environmental AAA portfolio information and trend analysis. A number of other Web portals have been developed to improve dissemination capacity.
and provide increased access to the Bank’s environmental AAA products.

**Monitoring the ENRM AAA portfolio**

At the end of fiscal 1999, the Bank launched a broad-based ESW reform initiative, the first phase of which targeted specifically the Bank’s ESW recording and monitoring systems (see box 4.7). The first phase of the reform exercise has already produced significant improvements in ESW programming, recording, and monitoring. New ESW modules available in the Bank’s institutional databases allow for better monitoring of the implementation of the ESW program. These efforts have enabled the inclusion of ESW portfolio analysis in the Quality Assurance Group’s Annual Report on Portfolio Performance and in the Quarterly Management Report for the World Bank’s Board of Executive Directors.

In addition to the reform exercise, the new coding system allows for allocation to AAA products of up to five (out of a total of seven) ENRM thematic codes. This change in coding allows much higher accuracy in capturing not only the Bank’s stand-alone ENRM AAA products but also the environmental objectives of its much larger cross-sectoral AAA work. The new system supports the operational and strategic planning of AAA work at both regional and corporate levels, and it improves the consistency of internal and external reporting.

The new coding system does have some limitations. The level of detail for ENRM analyses is limited to the seven designated ENRM themes, but ENRM activities such as those addressing coastal and marine ecosystems, mountain biodiversity, and the like do not always fall neatly within the existing codes. In adjusting to the new coding systems, task team leaders face a difficult job of selecting from a number of potentially overlapping themes falling under different thematic areas. (For example, do environmental policies and institutions come under the ENRM or the public sector governance thematic area?)

To help meet planning and reporting needs at all levels of the Bank’s operations, the Environment Strategy Implementation Team has created the Environment Database as a one-stop shop for up-to-date information on projects and AAA products with ENRM themes. The database offers a user-friendly interface for extracting information on lending and nonlending activities with ENRM themes from several Bank-wide institutional databases. In the case of AAA products, the database search criteria permit the extraction of product information across thematic and sectoral areas, product types, geographic areas, completion status, and so on and provide direct linkages to product-specific documentation. The database portal also offers the

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**BOX 4.7**

**The 1999 ESW reform**

To strengthen accountability for the strategic content, delivery, costs, and quality of ESW products, Phase I (fiscal 1999–2001) of the 1999 ESW reform focused on the Bank’s ESW governance framework, that is, quality assurance recording and monitoring systems.

Building on the improvements achieved, Phase II (fiscal 2002–04) is focusing on strategic content, coverage, participation, partnerships, dissemination, and impact.
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semiannual Environment Factsheets prepared by the Strategy Implementation Team. Among other things, the factsheets provide the Bank’s Environment Family with analyses of ENRM AAA portfolio trends.

Knowledge sharing and dissemination

Key aspects of the World Bank’s knowledge-sharing and knowledge management efforts include capturing and systematically organizing the wealth of knowledge and experience gained from staff, clients, and development partners and making this knowledge readily accessible to a wide audience, internally and externally. Knowledge is shared through thematic teams and communities of practice, advisory services, and various Web, learning, publications, and partnership initiatives.

Effective and efficient knowledge sharing both fosters and is characterized by accessibility, speed, quality, and innovation. For example, the ongoing transition to a Bank-wide uniform Web design format is expected to significantly streamline knowledge-sharing efforts and improve the accessibility and usability of AAA reports and other AAA products for both internal and external audiences.

The World Bank Environment Web portal (www.worldbank.org/environment) is recognized as best practice and provides easy access to all Environment Strategy—related AAA work, including the World Bank Environmental Strategy Papers and the Environment Strategy Notes. A dedicated AAA Web page offers linkages to the Bank’s analytical work on country-level environmental analysis (www.worldbank.org/cea) and strategic environmental assessment (www.worldbank.org/sea) and to World Bank Institute (WBI) resources, the Bank’s research portal, and the ENRM documents and reports available through the ImageBank—the central

Figure 4.6
Country Analytical Work (CAW) Website

<table>
<thead>
<tr>
<th>CAW Joint Website Country Analytic Work</th>
<th>A website to facilitate coordination &amp; cooperation on country analytic work</th>
</tr>
</thead>
<tbody>
<tr>
<td>Search</td>
<td>Home SUBSCRIBE to CAW Newsletter</td>
</tr>
<tr>
<td>About Us</td>
<td>The CAW website has been developed to facilitate coordination and cooperation among countries and donors with goals toward improving development impact and cost-effectiveness for both capacity building and knowledge sharing.</td>
</tr>
<tr>
<td>CAW Newsletter</td>
<td>Country analytic work encompasses the analysis and advice necessary to strengthen policy dialogue, develop and implement country strategies, and carry out sound lending operations. Through an active exchange of information, all partners stay up to date on development challenges and successes in a particular country or region with the benefit of common thematic activities and diverse opinions.</td>
</tr>
<tr>
<td>Partners</td>
<td>The CAW website provides a Document Library with access to project documents from partner agencies; contact the CAW team for the agency people with whom to communicate; Main Product Toolkits for the main diagnostic products; Procedures for conducting analytic work; and Examples of Best Practices, plus more to explore. For more information on our Partner Agencies, please visit the Partners page.</td>
</tr>
<tr>
<td>What’s New?</td>
<td>Sample of posted documents:</td>
</tr>
<tr>
<td>Document Library</td>
<td>- (ADB)</td>
</tr>
<tr>
<td>Contact Points</td>
<td>- (UNDP)</td>
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<tr>
<td>Main Product Toolkits</td>
<td>- (OECD)</td>
</tr>
<tr>
<td>Country Studies</td>
<td>- (IMF)</td>
</tr>
<tr>
<td>Examples of good Practice</td>
<td>- (UNDP)</td>
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<tr>
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<td>- (ADB)</td>
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<td>User Login</td>
<td>- (UNDP)</td>
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analytical and advisory activities in environmental and natural resource management


The joint Country Analytical Work (CAW) Website (www.worldbank.org/caw) offers another powerful tool for expanding cooperation on country analytical work across the development spectrum (see figure 4.6). The Website is a one-stop repository for country-level AAA reports, including environmental reports. It serves as a forum for sharing AAA products and planning schedules with other multilateral financing institutions and with multilateral and bilateral donors.
In line with the recommendations of the Environment Strategy, our efforts have focused on improving the mainstreaming of environmental issues, through improved analytical tools and a proactive effort, into poverty reduction strategy papers (PRSPs) and country assistance strategies (CASs). Besides designing new AAA tools such as country environmental analyses, we are realigning the focus of traditional AAA with the Strategy’s goals and objectives. This review, while limited to environmental AAA (formally coded as such) and a sample of other work, concludes that progress has been significant to date and that, compared with other networks of comparable size, the resources available to AAA have been very cost-effectively used.

Growing, Cost-Effectively

A look at the trends shows a steady increase in the Bank’s ENRM ESW and TA activities over the past three years, from 82 products in fiscal 2002 to 119 products in fiscal 2004, with projected increases for fiscal 2005 and 2006. Simultaneously, the Bank budget for environmental AAA has also been growing, from $6.4 million in fiscal 2002 to $8.6 million in fiscal 2004. This represents an increase from 5.9 to 6.4 percent of total Bank AAA over the same period.

To assess the cost-effectiveness of environmental ESW products (those mapped to the Environment Sector Board), costs relating to these products were analyzed and compared with those for other sector boards. The data show that in fiscal 2004 the actual average completion costs of ESW products managed by the Environment Sector Board were the lowest in comparison with sector boards that manage analytical work (CEAs and SEAs), in particular, is beginning to play an important role in influencing CASs and lending operations.

PROGRESS TO DATE

Over the past few years, we have made substantive progress in the level and content of our environmental analytical work. Environmental studies are increasing in number; they are cost-effective in their preparation; and they are aligned to address the key objectives of the Environment Strategy. Upstream
Influencing country assistance strategies and lending operations

The objective of country assistance strategies is to identify the key areas in which Bank Group support can best assist client countries to achieve sustainable development and poverty reduction. By analyzing and highlighting environmental issues and priorities within these countries, environmental analytical work provides critical inputs into CASs and helps influence the environmental content of the subsequent program of lending operations and nonlending work envisaged for these countries.

A recent review of environmental content in CASs has identified good practices in several countries (table 1.1, annex I). A preliminary look at the programming of environmental AAA in the countries with the highest overall scores for the treatment of environmental issues within their CASs shows that 55 percent of them had completed one or more ENRM ESW or TA products prior to or in the same year as the CAS. Looking at specific criteria such as identification of environmental concerns and priorities, the percentage increases to 75 percent among countries with the top ranking CASs. Examples include Brazil, where AAA work has brought to the forefront critical issues relating to land management, deforestation, and water resources management; Vietnam, where AAA work has highlighted urban management; and Mali, where studies on climate vulnerability and water resource management have emphasized the importance of adaptation.

In addition to CASs, environmental AAA work can play an important role in informing the Bank’s lending operations. A cursory examination of this review’s findings indicates that ESW and TA studies can provide critical environmental inputs to both investment and development policy lending (DPL) portfolios, particularly within key sectors through the

Table 5.1 Average annual completion cost of ESW products by selected sector boards, fiscal 2004

<table>
<thead>
<tr>
<th>Sector board</th>
<th>Number of ESW products</th>
<th>Actual completion cost per product (thousands of dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy and Mining</td>
<td>28</td>
<td>87.1</td>
</tr>
<tr>
<td>Environment</td>
<td>19</td>
<td>82.0</td>
</tr>
<tr>
<td>Gender and Development</td>
<td>15</td>
<td>85.3</td>
</tr>
<tr>
<td>Health, Nutrition, and Population</td>
<td>31</td>
<td>82.7</td>
</tr>
<tr>
<td>Procurement</td>
<td>26</td>
<td>83.9</td>
</tr>
<tr>
<td>Social Development</td>
<td>18</td>
<td>114.0</td>
</tr>
<tr>
<td>Rural Development</td>
<td>51</td>
<td>126.2</td>
</tr>
<tr>
<td>Social Protection</td>
<td>24</td>
<td>127.7</td>
</tr>
<tr>
<td>Transport</td>
<td>13</td>
<td>103.5</td>
</tr>
<tr>
<td>Urban Development</td>
<td>11</td>
<td>109.1</td>
</tr>
<tr>
<td>Water Supply and Sanitation</td>
<td>11</td>
<td>96.4</td>
</tr>
</tbody>
</table>

Note: Includes supplementals.

Source: Business Warehouse.
mainstreaming of environmental issues. For example, an upcoming Brazil environmental DPL project has been built on the foundations of recent analytical work that includes studies on the sustainable development of the Amazon (forest management and causes of deforestation), water resources management, urban air pollution, water supply and sanitation, and associated environmental health implications. Similarly, the *Ethiopia Country Environmental Analysis* has provided the analytical basis for environmental input into the country’s latest poverty reduction strategy credit (PRSC); and the Guinea-Bissau *Sustainable Fisheries Management Strategy* has informed that country’s recently approved Coastal and Biodiversity Management Project. A snapshot of the fiscal 2005 portfolio of Bank lending operations with primary environmental objectives reveals several examples of environmental analytical and technical assistance work carried out in preceding years and feeding into these lending operations (see table I.3, annex I). An in-depth analysis of linkages between the scope of environmental AAA and its influence on subsequent lending operations with environmental objectives is needed to establish a clear correlation.

In addition to influencing CAS and lending operations, it is important to undertake environmental AAA that looks at critical environmental problems in client countries. An ongoing collaboration between the Environment Department and the Development Economics Research Group (DECRG), *Aligning Resources with Investment Priorities*, overlays the Bank’s environmental lending and nonlending data on maps showing various environmental indicators (see figure 5.1). This

**Figure 5.1**

*Actual environmental investment*  
($US million)

Source: DECRG calculations based on information from the World Bank databases.
exercise not only discovers gaps; it will also help identify opportunities for future ENRM analytical work and lending.

**Aligning with the objectives of the Environment Strategy**

Formal as well as informal ESW and report-based TA projects are being designed and undertaken to address poverty-environment issues, integrate environmental considerations into sectors and institutions, and build on local-global linkages. Through this review, we have been able to assess how well we have been aligning our AAA with the key objectives of the Environment Strategy and, in particular, to identify the areas where we need to do more (see table 5.2).

The review reveals that substantial efforts are still needed in the incorporation of environmental issues in PRSPs. Even through consideration of environmental issues has improved as a country moved from an interim PRSP to a PRSP, the evidence is rather uneven. In addition, more studies are needed on the ways in which poor people are dependent on natural resources for their livelihoods. Additional analytical work is needed on devising strategies and policies to protect vulnerable populations from natural disasters and climate variability. Although several analytical studies have dealt with the protection of the global and regional commons (biodiversity, climate change, and so on), more studies that focus on building the synergies between local and global benefits are needed.

In other areas, such as environmental health, and within sectors such as water, sanitation, and rural development, some progress has been made in mainstreaming environmental issues. We have begun to systematically include environmental health issues such as sanitation and hygiene, indoor air pollution, urban air pollution, and toxics (pesticides) in our analytical work. Within key sectors, we have made good progress in the water and sanitation sector (environmental health links) and the rural development sector. In the latter sector, extensive analytical work has been undertaken on forestry issues (e.g., forest management strategies), some analytical work has been done on agricultural issues (e.g., agroecology), and new work is being initiated on fisheries.

The current level of effort needs to be sustained in other sectors, such as energy and mining and transportation, where we have moved further ahead in incorporating environmental considerations. Energy-environment reviews are addressing cross-sectoral environmental impacts associated with energy production and consumption, while ESMAP-funded reports investigate fuel use and its impact on indoor air pollution. Several AAA products are examining the priorities for air quality management programs and attempting to estimate the costs of health impacts from urban air pollution. Our upstream analytical work, through CEAs (launched in 12 countries) and SEAs (initiated in 12 countries), is meeting Strategy targets and needs to be sustained. In addition, other focused analytical work, such as institutional capacity analyses and public environmental expenditure reviews, is examining institutional and policy issues in our client countries.

**Challenges That Remain**

Over the past few years, since the endorsement of the Environment Strategy, we have
made good progress in strengthening our environmental analytical work. However, challenges remain. While responding to the impetus from the newly approved policy on development policy lending, we will have to strategically program our upstream analytical work. We also need to better align the focus of our analytical work to help our client countries achieve the Millennium Development Goals. Finally, we have to improve the timing and monitoring of our AAA work even while sustaining and bolstering budget allocations.

Meeting the demands of development policy lending and adjusting strategic fit

Following up on the approval of the new OP/ BP 8.60 on development policy lending, the Bank will need to systematically ensure that environmental and natural resource considerations are adequately addressed at the DPL design stage. Identification of perceived environmental and natural resource risks of policy reforms will require understanding of (often complex) institutional systems, policies, and capacity in client countries. Because of their fast-disbursing nature, these operations may not lend themselves to detailed analysis in tandem with the lending cycle. A practical way to go forward in this area will be to take advantage of the programmatic approach and look at the policy lending operations pipeline to identify operations that deal with environmentally sensitive sectors such as agriculture, energy and mining, forestry, transportation, and water and sanitation. This can be followed by ex ante analytical work, either as stand-alone ESW or as part of the broader country program.

Historically, our AAA studies on environment and natural resource management issues have been more or less ad hoc and have often stood alone as pieces of analytical work. To accord a higher priority to environmental AAA work, it will be crucial to make it part of a larger strategic program of support, tied in with planned investment lending. This strategy may also help justify the allocation of budgetary resources for AAA. For example, the Thailand Country Development Partnership for Environment (2004) provides a framework for a knowledge partnership between Thailand and the World Bank for improving environmental quality, which is one of the four pillars of the national development agenda. The objective is to improve environmental quality by supporting the implementation of a medium-term reform agenda with the corresponding capacity-building, technical assistance, analytical, advisory, and investment needs.

Better alignment with the Millennium Development Goals

Environmental sustainability was identified as one of the eight Millennium Development Goals (MDGs). A recent Task Force on Environmental Sustainability called attention to the fact that long-term success in meeting all the MDGs depends on environmental sustainability. In table 5.3 we assess our progress in implementing the Environment Strategy in the context of environmental linkages with the poverty reduction, health, education, and gender MDGs.

In its recent report, the Task Force made 10 key recommendations on making progress in environmental sustainability to help governments, the private sector, and civil society in countries achieve the MDGs. For this review, we have briefly assessed the focus of the Bank’s environmental analytical work, as well
as other sector analytical work, vis-à-vis the issues identified in these recommendations. As table 5.4 shows, our environmental analytical work is fairly well aligned with the Task Force recommendations. For example, studies on the costs of environmental degradation are serving to correct market failures and distortions.

Nevertheless, there remains room for improvement. Some reports are beginning to look at the environment in relation to the MDGs. For example, the ECA report Meeting the Environment Millennium Development Goal in Europe and Central Asia (2003) reviews the status of the region’s 28 countries with respect to the environmental Millennium Development Goal, MDG 7. Taking into consideration the linkages between MDG 7 and the health and poverty goals, as well as the cost of meeting the MDG targets, the report identifies priority areas for Bank support.

**Improving timing and monitoring**

In addition to recommendations on the content and thematic focus areas for future AAA, a number of improvements can be made in the timing of products, the monitoring of effectiveness and outcomes, and the allocation of adequate resources.

*Getting the timing right.* Conducting environmental analytical work such as ESWs at the start of the new CAS cycle is considered instrumental for facilitating the integration of environmental issues into CASs in a meaningful way and for mainstreaming environmental concerns into other non—environment sector strategies. Yet the record of programming ENRM ESW and TA in advance of upcoming CASs is mixed at best, even in the case of CASs scoring high on treatment of ENRM issues (table I.1, annex I).

Similarly mixed is the analysis of the environmental ESW and TA pipelines for “priority” countries—those whose CASs should recognize and address critical environmental issues (table I.2, annex I). For example, in some countries, such as Ethiopia, Jordan, and Tajikistan, several environmental ESWs have been conducted or are planned before the 2006 CASs. In other priority CAS countries, including Lesotho and República Bolivariana de Venezuela, no environmental ESWs have been carried out in the past few years or are planned in advance of the scheduled 2006 CASs. It is important to note that even if environmental ESWs are undertaken before or concurrently with CAS preparation, the content of these ESWs may not necessarily be linked to the environmental issues identified in the CAS. To analyze the extent of the linkage between the content of environmental ESWs and the inclusion of environmental issues in CASs requires an in-depth review.

*Monitoring effectiveness and outcomes.* With the encouraging trend in recent AAA, including a healthy pipeline of activities for fiscal 2005 and 2006, it becomes critical to put in place an outcome-based monitoring system for AAA. On a Bank-wide scale, the Results Secretariat, established in 2004, is helping countries strengthen their ability to manage for results, improving the Bank’s own focus on results, and working with other development agencies to encourage a common approach. Within the Environment Family, the systematic use of indicators will help us see directly how AAA programs are working toward
the objectives of the Environment Strategy and the MDGs. An Environment Department publication, *Indicators of Environment and Sustainable Development* (2003), summarizes lessons learned in developing countries and applies them to the MDGs. The report lists the outputs of the World Bank’s work on environment and sustainable development indicators and presents a selection of similar work by other organizations.

**Improving monitoring and reporting.**

Historically, AAA has not been adequately recorded, and monitoring and recording have been relatively ad hoc. With the advent of the 1999 ESW reform process (which identified environmental AAA as among the most outdated such products) and the Environment Strategy, new impetus was given to strengthening AAA, including its monitoring. The new coding system has made monitoring considerably easier, as environmental objectives are captured within the seven environmental subthemes, which do not compete with sectoral allocations.

Considerable improvements are being made in our knowledge of the environmental analytical work carried out by the Bank. To better track trends in AAA, including thematic allocations and regional profiles, the new Environment Database includes search functions to extract data on AAA in a user-friendly format. In the course of fiscal 2004 and fiscal 2005, several Environment Strategy roundtables discussed progress on various AAA tasks in the regions, highlighted good practices, and shared experience and lessons learned. The Environment Strategy Papers and Environment Strategy Notes continue to capture new and exciting AAA work.

Despite these improvements, there remains a need to provide guidance to task team leaders on the coding of AAA work in order to better reflect environmental content in these activities. Confusion remains concerning product coding for ESW and TA products, as well as in thematic allocations. Targeted training to correct misclassifications is being delivered to task team leaders in regional environment units.

**Sustaining resource allocations**

Bank budgets, supplemented by the Mainstreaming Fund for the Environment (MFE) and by trust funds, are supporting the strengthening of environmental AAA work along the lines envisioned in the Environment Strategy. An analysis of cost-effectiveness shows that the Environment Sector Board has the lowest average completion costs for ESWs among sector boards with similar numbers of products.

In addition, interviews with task team leaders in regional environmental units have revealed that the MFE is a valuable instrument for raising the level of environmental dialogue in several countries and increasing the environmental content of PRSPs and CASs. Trust funds such as the TFESSD are playing an increasingly important role in supporting the analytical underpinnings for mainstreaming environmental management efforts in the country dialogue and assistance programs. Of the 47 projects funded through the TFESSD environment window, 37 are directed toward strengthening AAA work.

Given these current resource allocations and the evidence of how environmental analytical work is “greening” CASs, development policy
lending, and sectoral investments, it is imperative to not only sustain but also bolster the level of budgetary and trust-funded support. Through targeted environmental analytical work in our client countries, financed through the Bank and donors, we will be able to infuse the principles of environmental sustainability into our policies and assistance programs.
### Table 5.2 Summary of progress in aligning AAA with the objectives of the Environment Strategy

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Progress to date</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Poverty-environment linkages</strong></td>
<td>Several recent reviews of PRSPs show that attention to environmental issues has been uneven but that good practice exists. There was an improvement in the consideration of environmental issues as a country moved from an interim PRSP to a PRSP. However, there is a clear need to strengthen the attention paid to environmental issues in PRSPs.</td>
</tr>
<tr>
<td><strong>Integrating environment into PRSP processes</strong></td>
<td>Livelihoods: A few studies are beginning to look at how poor people are dependent on natural resources for their livelihoods.</td>
</tr>
<tr>
<td><strong>Enhancing livelihoods by improving sustainable management and protecting natural resources</strong></td>
<td>Health: Poor people, especially women and young children, are disproportionately affected by environmental risks. Several new analytical studies are exploring health impacts from water and air pollution, especially in South Asia, East Asia, and Latin America and the Caribbean. Environmental health costs are also being estimated in studies of the costs of environmental degradation in the Middle East and North Africa and Latin America and the Caribbean Regions.</td>
</tr>
<tr>
<td><strong>Preventing and reducing environmental health risks.</strong></td>
<td>Vulnerability: Very few studies have looked at the impacts of natural disasters on the poor and at ways of reducing vulnerability to environmental hazards and climate variability. More studies are needed to devise strategies and policies to protect vulnerable populations from natural disasters and climate variability.</td>
</tr>
<tr>
<td><strong>Reducing people’s vulnerability to environmental hazards.</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Integrating environment into sectors</strong></td>
<td>Several recent examples of analytical work explore the environmental dimensions of water resources management at both regional and country levels. From water resources sector strategies and memoranda to technical guidance notes, various reports have explored issues relating to water resources conservation, coastal and marine issues, economic valuation of water resources, etc.</td>
</tr>
<tr>
<td><strong>Water, sanitation, and flood protection</strong></td>
<td>Issues relating to sanitation and hygiene, wastewater treatment, and water conservation play a major role in improving health and living conditions. A number of studies are looking at environmental and health issues relating to water supply and sanitation. Analytical work has included wastewater strategies, studies on water quality management and pollution control, and policy notes on healthcare waste and wastewater reuse.</td>
</tr>
</tbody>
</table>
Energy and environment reviews are addressing cross-sectoral environmental impacts associated with energy production and consumption that occur at the local, regional, and global levels. A few ESMAP-funded reports investigate fuel use and its impact on indoor air pollution; other notes focus on restructuring the natural gas sector. With the launch of the consultative Extractive Industries Review, several studies are looking at the environmental impacts of and costs associated with activities in the mining sector.

Several AAA products are examining the priorities for air quality management programs and attempting to estimate the costs of health impacts from urban air pollution.

A number of strategic upstream environmental ESW and TA studies focus on the linkages between sustainable rural development and natural resource management and explore core agriculture, fishing, and forestry sector issues. In agriculture, some studies have focused on the potential for agroecological activities, while others strive to understand the incentives behind the intensification of agriculture through increasing deforestation. Two ESW reports aim to promote the sustainable management and development of the fisheries sector. Recent analytical work in forestry that focuses on environmental themes includes forest policy strategies, policy notes, and investigative studies. In addition, beyond analytical work with ENRM themes, other studies within the rural sector focus on issues relating to environment and rural development.

Considerable progress in upstream analytical work has been made through country environmental analysis (CEA). The CEA approach evaluates systematically the environmental priorities of development in client countries, the environmental implications of key policies, and countries’ capacity to address their priorities. CEAs have been launched in 17 priority countries or states. Strategic environmental assessment (SEA), which provides a framework for evaluating environmental linkages at the sectoral, regional, or policy level, is being used to address complex cross-sectoral environmental issues and to integrate environment into sectoral decision making and planning at early stages. SEAs have been initiated in about 12 countries. Institutional and policy issues have also been examined in other focused analytical work such as institutional capacity analyses, public environmental expenditure reviews, and support to client countries in strengthening their environmental assessment systems and practices.
Aligning AAA with the Environment Strategy

Anjali Acharya, Milen Dyoulgerov and Eri Tsutsui

Building on synergies between local and global benefits

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Progress to date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biodiversity</td>
<td>The Bank’s analytical work to protect the global and regional commons aims to strengthen the positive linkages between poverty reduction and environmental protection. Relatively few analytical studies have focused on building the synergies between local and global benefits. Most of the reports on biodiversity have focused on developing biodiversity strategies and undertaking biodiversity portfolio reviews. On climate change, national strategy studies on Clean Development Mechanism/Joint Implementation have predominated. On ozone depletion, a few studies on the phaseout of chlorofluorocarbons (CFCs) in the chiller sector and on the phaseout of carbon tetrachloride have been carried out. Clearly, more studies are needed on identifying the local and regional impacts associated with global environmental issues. In addition to Bank analytical work, numerous reports, studies, and publications have been funded from other sources, including the Global Environment Facility, Carbon Finance, and other partnerships. Several biodiversity studies focusing on protected area management, mainstreaming biodiversity in development work, and conservation financing have been produced with funding from, for example, the World Bank–World Wide Fund for Nature (WWF) Alliance; the U.S. Agency for International Development (USAID), the World Conservation Union (IUCN), and The Nature Conservancy (TNC).</td>
</tr>
<tr>
<td>Climate change</td>
<td></td>
</tr>
<tr>
<td>Ozone depletion</td>
<td></td>
</tr>
<tr>
<td>Persistent organic pollutants</td>
<td></td>
</tr>
</tbody>
</table>

Table 5.2 Summary of progress in aligning AAA with the objectives of the Environment Strategy (continued)

Substantial efforts needed | Some progress needed | Level of effort to be Sustained
### Table 5.3 Key links between Millennium Development Goal (MDG) 7, on environmental sustainability, and other MDGs

<table>
<thead>
<tr>
<th>Other Millennium Development Goals</th>
<th>Link to environmental issues</th>
<th>Link to Environment Strategy objectives and progress to date</th>
</tr>
</thead>
</table>
| Goal 1. Eradicate extreme poverty and hunger | - Livelihood strategies and food security of the poor often depend directly on functioning ecosystems and the diversity of goods and ecological services they provide.  
  - Insecure rights of the poor to environmental resources, as well as inadequate access to environmental information, markets, and decision making, limit their capacity to protect the environment and improve their livelihoods and well-being. | - The Environment Strategy focuses on enhancing livelihoods because poor people often depend heavily on the productivity and environmental services of ecosystems and natural resources.  
  - This goal includes helping communities sustainably manage natural resources such as land, water, and forests; helping to clarify and establish property rights; and strengthening or reforming incentive systems that influence how resources are used. |
| Goal 2. Achieve universal primary education | - Time that children, especially girls, spend collecting water and fuelwood can reduce study time. | - No direct link in Environment Strategy with education goals. |
| Goal 3. Promote gender equality and empower women | - Time that women spend collecting water and fuelwood reduces their opportunity for income-generating activities.  
  - Women’s often unequal rights and insecure access to land and other natural resources limit opportunities for accessing other productive assets. | - Improving quality of life (health, livelihoods, and vulnerability) is especially important for women, who are often disproportionately affected by environmental degradation. |
| Goal 4. Reduce child mortality | - Water- and sanitation-related diseases and acute respiratory infections, primarily caused by indoor air pollution, are leading causes of mortality in children under age five. | - Environmental health is a major focus under the quality of life objective.  
  - Several analytical studies are exploring the health impacts of inadequate water, sanitation, and hygiene.  
  - Other studies are looking at the exposure of women to indoor air pollution due to smoke from biomass burning.  
  - Studies of the costs of environmental degradation are estimating the environmental health costs relating to dirty water and dirty air. |
### Goal 5. Improve maternal health
- Indoor air pollution and carrying heavy loads during late stages of pregnancy put women’s health at risk before childbirth.

### Goal 6. Combat HIV/AIDS, malaria, and other diseases
- Environmental risk factors account for up to one-fifth of the total burden of disease in developing countries.
- Preventive environmental health measures are as important as, and at times more cost-effective than, health treatment.

### Goal 8: Develop a global partnership for development
- Since rich countries consume far more environmental resources and produce more waste than poor countries, many environmental problems (such as climate change, loss of species diversity, and management of global fisheries) must be solved through a global partnership of developed and developing countries.
- Client country commitments to various global conventions on, for example, biodiversity, climate change, and ozone-depleting substances are being supported through various partnerships such as the GEF, the PCF and other carbon funds, the Montreal Protocol, the POPs agreement, the MBC, the Critical Ecosystems Fund and the Millennium Ecosystem Assessment.

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**Table 5.3: Key links between Millennium Development Goal (MDG) 7, on environmental sustainability, and other MDGs (continued)**

<table>
<thead>
<tr>
<th>Other Millennium Development Goals</th>
<th>Link to environmental issues</th>
<th>Link to Environment Strategy objectives and progress to date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal 5. Improve maternal health</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Goal 6. Combat HIV/AIDS, malaria, and other diseases</td>
<td>Environmental risk factors account for up to one-fifth of the total burden of disease in developing countries. Preventive environmental health measures are as important as, and at times more cost-effective than, health treatment.</td>
<td></td>
</tr>
<tr>
<td>Goal 8: Develop a global partnership for development</td>
<td>Since rich countries consume far more environmental resources and produce more waste than poor countries, many environmental problems (such as climate change, loss of species diversity, and management of global fisheries) must be solved through a global partnership of developed and developing countries.</td>
<td></td>
</tr>
</tbody>
</table>

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*Client country commitments to various global conventions on, for example, biodiversity, climate change, and ozone-depleting substances are being supported through various partnerships such as the GEF, the PCF and other carbon funds, the Montreal Protocol, the POPs agreement, the MBC, the Critical Ecosystems Fund and the Millennium Ecosystem Assessment.*
Table 5.4 Alignment with the recommendations of the Task Force on Environmental Sustainability

<table>
<thead>
<tr>
<th>Recommendations of the Task Force on Environmental Sustainability</th>
<th>Linkages to the Environment Strategy and related AAA work</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improve small-scale agricultural production systems</td>
<td>■ Mainstreaming of environmental issues is increasingly seen in agriculture and rural development studies.</td>
</tr>
<tr>
<td>■ Increase the use of sustainable agriculture techniques</td>
<td>■ Several analytical studies address issues relating to land reform, land administration, soil fertility and desertification.</td>
</tr>
<tr>
<td>■ Restore and manage desertified lands</td>
<td>■ Other analytical work managed by the Rural Sector Board focuses on food security, livestock management, pastoral programs, natural resource management, agricultural investments, forestry and rangeland management, and so on.</td>
</tr>
<tr>
<td>■ Protect surrounding natural habitat</td>
<td>■ Several ENRM AAA studies focus on forest management issues, including understanding the reasons for deforestation, assessing country forest programs, and formulating forest policy dialogue.</td>
</tr>
<tr>
<td>2. Promote forest management for protection and sustainable production</td>
<td>■ Studies on biodiversity and ecosystem management are addressing capacity building, policy dialogue, formulation of strategies and action plans, and the like. Some of these are funded by the Global Environment Facility (GEF).</td>
</tr>
<tr>
<td>■ Increase real income in informal forest sector activities by at least 200 percent</td>
<td>■ Some AAA work is investigating the extent to which people in rural areas in developing countries depend on income from forest environmental incomes</td>
</tr>
<tr>
<td>■ Integrate ecosystem management of 90 percent of river basin systems</td>
<td>■ Other analytical work managed by other sector boards focuses on medicinal plants, transboundary water resources, coastal livelihoods, and the like.</td>
</tr>
<tr>
<td>■ Protect and restore representative areas of all major ecosystems</td>
<td>■ Analytical studies are in preparation on freshwater systems such as lakes; these include an ESW study, Managing Lake Basins: Practical Approaches for Sustainable Use, which is linked to a GEF lake assessment project.</td>
</tr>
<tr>
<td>3. Combat threats to freshwater resources and ecosystems</td>
<td>■ Other work includes a SEA for watershed management and the Water Resources and Environment Technical Notes Series</td>
</tr>
<tr>
<td>■ Reduce demand for freshwater, especially in cropping systems</td>
<td>■ Analytical work is being done under the PROFISH partnership</td>
</tr>
<tr>
<td>■ Minimize pollution levels in surface water and groundwater sources</td>
<td>■ Analytical work relating to habitat assessment and conservation, with ESWs on marine protected areas and on reef ecosystem health indicators, is in preparation.</td>
</tr>
<tr>
<td>■ Maintain aquatic biodiversity by ensuring minimum environmental flow</td>
<td>■ Sustainable fisheries management strategies are being formulated in analytical studies managed by the Rural Sector Board.</td>
</tr>
<tr>
<td>4. Address the threats to fisheries and marine ecosystems</td>
<td>■ Analytical work is being done under the PROFISH partnership</td>
</tr>
<tr>
<td>■ Implement an ecosystem-based approach to fisheries management</td>
<td>■ Analytical work relating to habitat assessment and conservation, with ESWs on marine protected areas and on reef ecosystem health indicators, is in preparation.</td>
</tr>
<tr>
<td>■ Restore depleted fish population levels to at least minimum target levels of biomass</td>
<td>■ Sustainable fisheries management strategies are being formulated in analytical studies managed by the Rural Sector Board.</td>
</tr>
<tr>
<td>■ Establish a network of representative, fully protected marine reserves</td>
<td>■ Analytical work relating to habitat assessment and conservation, with ESWs on marine protected areas and on reef ecosystem health indicators, is in preparation.</td>
</tr>
<tr>
<td>■ Other analytical work managed by other sector boards focuses on medicinal plants, transboundary water resources, coastal livelihoods, and the like.</td>
<td>■ Sustainable fisheries management strategies are being formulated in analytical studies managed by the Rural Sector Board.</td>
</tr>
</tbody>
</table>
5. Address the drivers of air and water pollution
   - Reduce exposure to toxic chemicals in vulnerable groups
   - Significantly reduce the under-five mortality and morbidity rates attributable to pneumonia and acute respiratory infection
   - Significantly reduce under-five mortality and morbidity attributable to waterborne diseases
   - Reduce the atmospheric levels of the six key pollutants and of methane

Toxics (pesticides and insecticides) are being addressed through studies under the persistent organic pollutants (POPs) program.

Several studies estimate environmental health costs relating to water and air pollution, using mortality and morbidity data.

Analytical work relating to health outcomes associated with water supply and sanitation is being undertaken in some countries.

Several ESMAP-funded studies are looking at fuel use and indoor air pollution; others focus on urban air pollution.

Through the infrastructure (Urban Development, Water Supply and Sanitation, and Energy and Mining) Sector Boards, several studies on slum upgrading, urban environment, water and sewerage, solid waste management, energy efficiency, etc., are providing a better understanding of environmental health issues.

Under the Health, Nutrition, and Population Sector Board, several reviews, assessments, and policies at the country level provide an understanding of ways to reduce under-five mortality and morbidity from various causes, including environmental risks.

6. Mitigate the anticipated effects of global climate change
   - Invest in cost-effective and environmentally sustainable energy
   - Promote and engage climate-friendly carbon and technology markets
   - Mainstream responses to climate change and variability

Several studies, including national sector strategies for CDM/JI, are being undertaken as part of the climate change program. Other stand-alone studies are looking at climate variability and its impacts on ecosystems and people.

Annual reports describe the state of and trends in the carbon market each year.

Under the Energy and Mining Sector Board, several analytical studies focus on the formulation of energy efficiency strategies for countries.
<table>
<thead>
<tr>
<th>Recommendations of the Task Force on Environmental Sustainability</th>
<th>Linkages to the Environment Strategy and related AAA work</th>
</tr>
</thead>
<tbody>
<tr>
<td>7. Strengthen institutions and governance</td>
<td>Institutions and governance issues are being addressed through various up-stream environmental analytical studies such as CEAs and SEAs</td>
</tr>
<tr>
<td>■ Train, recruit, and retain environmental experts</td>
<td>■ Other analytical studies include public environmental expenditure reviews, which provide accurate information to environment and finance ministers and to civil society on the sources and uses of funds for environmental activities</td>
</tr>
<tr>
<td>■ Secure sufficient funding for environmental institutions</td>
<td>■ An analytical study on environmental governance is upcoming.</td>
</tr>
<tr>
<td>■ Reform government institutions and improve interagency</td>
<td>■ Under other sector boards, additional analytical studies focus on broader governance and public sector management issues.</td>
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<tr>
<td>coordination</td>
<td>■ Gender assessment studies undertaken in several countries provide important information on gender’s role in food production and on gender disparities in such areas as education, health, and access to services.</td>
</tr>
<tr>
<td>■ Improve governance and gender equality</td>
<td>■ Studies on the costs of environmental degradation are being carried out in several regions (e.g., Middle East and North Africa; Latin America and the Caribbean).</td>
</tr>
<tr>
<td></td>
<td>■ Studies in several countries focus on developing payment for ecosystem services (PES) systems that could help compensate for the absence of markets and promote the maintenance of environmental services.</td>
</tr>
<tr>
<td></td>
<td>■ Some sector work is looking at strengthening environmental assessment regulatory frameworks in a number of client countries and at harmonization of safeguards policies.</td>
</tr>
<tr>
<td>8. Correct market failures and distortions</td>
<td>■ Studies on the costs of environmental degradation are being carried out in several regions (e.g., Middle East and North Africa; Latin America and the Caribbean).</td>
</tr>
<tr>
<td>■ Account for the cost of environmental degradation in national accounts</td>
<td>■ Studies in several countries focus on developing payment for ecosystem services (PES) systems that could help compensate for the absence of markets and promote the maintenance of environmental services.</td>
</tr>
<tr>
<td>■ Introduce payments for ecosystem services</td>
<td>■ Some sector work is looking at strengthening environmental assessment regulatory frameworks in a number of client countries and at harmonization of safeguards policies.</td>
</tr>
<tr>
<td>■ Reform tax structures</td>
<td>■ Studies on the costs of environmental degradation are being carried out in several regions (e.g., Middle East and North Africa; Latin America and the Caribbean).</td>
</tr>
<tr>
<td>■ Phase out environmentally harmful subsidies</td>
<td>■ Studies in several countries focus on developing payment for ecosystem services (PES) systems that could help compensate for the absence of markets and promote the maintenance of environmental services.</td>
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<tr>
<td>■ Develop trade regulations to promote legal, sustainable</td>
<td>■ Some sector work is looking at strengthening environmental assessment regulatory frameworks in a number of client countries and at harmonization of safeguards policies.</td>
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<tr>
<td>harvesting of natural resource products</td>
<td>■ Studies on the costs of environmental degradation are being carried out in several regions (e.g., Middle East and North Africa; Latin America and the Caribbean).</td>
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<td>■ Strengthen property and land tenure rights</td>
<td>■ Studies in several countries focus on developing payment for ecosystem services (PES) systems that could help compensate for the absence of markets and promote the maintenance of environmental services.</td>
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<tr>
<td>■ Improve national and international regulatory frameworks</td>
<td>■ Some sector work is looking at strengthening environmental assessment regulatory frameworks in a number of client countries and at harmonization of safeguards policies.</td>
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### Table 5.4 Alignment with the recommendations of the Task Force on Environmental Sustainability (continued)

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<td>9. Improve access to and use of scientific and indigenous knowledge</td>
<td>■ Science and technology are not included in the Bank’s Environment Strategy.</td>
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<td>■ Mobilize science and technology on a national scale</td>
<td>■ Environmental inputs to PRSPs need to be further strengthened; Assessments of environmental content in PRSPs should be carried out regularly.</td>
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<td>■ Establish mechanisms for science and technology advice to policy makers</td>
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<tr>
<td>■ Train civil servants and political decision makers in environmental management</td>
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<tr>
<td>■ Provide public access to information</td>
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<tr>
<td>■ Improve extension training and services so that they are based on locally derived solutions</td>
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<tr>
<td>■ Strengthen global scientific assessments</td>
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<tr>
<td>10. Build environmental sustainability into all development project proposals</td>
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<tr>
<td>■ Ensure that all project proposals and poverty reduction strategies submitted to funding agencies include an assessment of their environmental impacts</td>
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<tr>
<td>■ Establish a system of targeted incremental funding of national environmental programs</td>
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<tr>
<td>■ Increase funding to countries in support of implementing existing multilateral environmental agreements</td>
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Annex A

List of ENRM AAA (ESW and TA) Reviewed (FY 02–04)

This list includes 75 ENRM ESW and TA products that were reviewed (out of about 300 products in all) from FY02 to FY04. Chapter 3 provides a qualitative review of these products.
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* ESW Report Types
AGR Other Agricultural Studies
CEA Country Environmental Analysis
CEM Country Economic Memorandum
DPR Development Policy Review
EER Energy Environmental Review
ENS Other Environmental Studies
ENR Energy Study
INF Other Infrastructure Studies
MOG Mining, Oil and Gas
PSD Privatization and Industrial Studies
PSS Other Public Sector Studies
RRR Regional Report
RUR Other Rural Studies
URB Other Urban Studies

** ENRM Themes
80 Biodiversity
81 Climate change
82 Environmental policies and institutions
83 Land management
84 Pollution management and environmental health
85 Water resources management
86 Other environment and natural resources management
Annex B

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<td>Dominica, St. Lucia, and Grenada and discussing Bank support for developing an institutional framework for more effective environmental management in Dominica, St. Lucia, and Grenada and discussing Bank support for developing an institutional framework for more effective environmental management.</td>
<td>Werbrouck, Pierre</td>
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<td>Mexico Rural Water Rights Buy-Back Program</td>
<td>Analyzing alternatives for a recently proposed Mexico water rights buy-back program.</td>
<td>Asad, Musa S.C.</td>
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<td>P082867</td>
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<td>Assessing the current institutional framework and capacity to address environmental management issues in Dominica, St. Lucia, and Grenada and discussing Bank support for developing an institutional framework for more effective environmental management.</td>
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<td>Preparation of a regional GEF Strategy for the MNA Region.</td>
<td>Lotayef, Dahlia</td>
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<td>Persistent Organic Pollutants Strategic Review.</td>
<td>Rahill, Bilal H.</td>
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<td>P085046</td>
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<td>WORLD</td>
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<td>Review of SEA of Policies: Recent Experiences</td>
<td>A background paper that will be one of the inputs to an umbrella ESW that is expected to be completed in FY05 on integrating environmental considerations into policy formulation.</td>
<td>Ahmed, Kulsum</td>
<td>EW</td>
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* The formal reports include: (a) Country Environmental Analyses (CEAs) (b) Other Environmental Studies (ENSs), Energy-Environment Reviews (EERs), Public Environmental Expenditure Reviews (PEER), and Strategic Environmental Assessments (SEAs).
List of Environment Department Publications (FY 02–04)
### ENVIRONMENT STRATEGY PAPERS

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<tr>
<td>Health and Environment</td>
<td>Kseniya Lvovsky</td>
<td>2002</td>
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<td>Environmental and Water Resources Management</td>
<td>Rafik Hirji and Hans Olav Ibrekk</td>
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<tr>
<td>Environmental Indicators Relevant to Poverty Reduction</td>
<td>Norbert Henninger and Allen Hammond</td>
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<td>Strategic Environmental Assessment in World Bank Operations:</td>
<td>Olav Kjorven and Henrik Lindhjem</td>
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<td>Experience to Date — Future Potential</td>
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<td>An Analysis of the World Bank Privatization Portfolio</td>
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<td>A Decade of Environmental Lending</td>
<td>Anjali Acharya and Alethea M. T. Abuyuan</td>
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<td>Public Environmental Expenditure Reviews: Experience and Emerging Practice</td>
<td>Phil Swanson and Leiv Lunde</td>
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### ENVIRONMENTAL ECONOMICS SERIES

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<td>Policy Applications of Environmental Accounting</td>
<td>Glenn-Marie Lange</td>
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<td>Cost of Environmental Degradation - Lebanon and Tunisia</td>
<td>Maria Sarraf, Bjorn Larsen, Marwan Owagen</td>
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<td>Paying for Biodiversity Conservation Services in Agricultural Landscapes</td>
<td>Stefano Pagiola, Paola Agostini, Jose Gobbi, Cees de Haan, Muhammad Ibrahim, Enrique Murgueitio, Elias Ramirez, Mauricio Rosales, Juan Pablo Ruiz</td>
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<td>A Review of the Valuation of Environmental Costs and Benefits in World Bank Projects</td>
<td>Patricia Silva and Stefano Pagiola</td>
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<td>Poverty Reduction Strategies and the Millennium Development</td>
<td>Jan Bojo and Rama Chandra Reddy</td>
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<td>Poverty and Environment Indicators</td>
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<td>Beating the Resource Curse: The Case of Botswana</td>
<td>Maria Sarraf and Moortaza Jiwanji</td>
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<td>Una década de gestión ambiental en Chile (also in English)</td>
<td>Ina-Marlene Ruthenberg</td>
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<td>S. Fankhauser</td>
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<td>BIODIVERSITY SERIES</td>
<td>Robin Grimble and Martyn Laidlaw</td>
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<td>Biological Resource Management: Integrating Biodiversity</td>
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<td>Concerns in Rural Development Projects and Programs</td>
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<td>Participatory Conservation for Protected Areas: An Annotated</td>
<td>Nancy Diamond (Editor), Elisabeth Nkrumah &amp; Alan Isaac</td>
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<td>Bibliography of Selected Sources (1996-2001)</td>
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<td>Priya Shyamsundar, Kirk Hamilton, Lisa Segnestam, Samuel Fankhauser,</td>
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<tr>
<td>Country Assistance Strategies and the Environment: A Brief</td>
<td>and Maria Sarraf</td>
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<td>Linking Poverty Reduction and Environmental Management — Policy</td>
<td>DFID; DG of Development, EC; UNDP; and the World Bank</td>
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<td>Making Sustainable Commitments — An Environment Strategy</td>
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<td>World Bank</td>
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<td>The Little Green Data Book 2002</td>
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<td>Implications of Privatization — Lessons for Developing Countries</td>
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<td>World Bank Technical Paper No. 538, Generating Public Sector Resources to Finance Sustainable Development: Revenue and Incentive Effects</td>
<td>Stefano Pagiola, Roberto Martin-Hurtado, Priya Shyamsundar, Muthukumara Mani, Patricia Silva</td>
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<tr>
<td>Climate Change and Agriculture: A Review of Impacts and Adaptations</td>
<td>Pradeep Kurukulasuriya and Shane Rosenthal</td>
<td>2003</td>
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### WATER RESOURCES AND ENVIRONMENT TECHNICAL NOTES

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<td>Environmental Flows: Concepts and Methods</td>
<td>Catherine Brown and Jacqueline King</td>
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<td>Environmental Flows: Case Studies</td>
<td>Jacqueline King and Catherine Brown</td>
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<td>Water Quality: Assessment and Protection</td>
<td>Frank Radstake and Albert Tuinhof</td>
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<td>Water Quality: Wastewater Treatment</td>
<td>Gary Wolff</td>
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<td>Water Quality: Nonpoint-Source Pollution</td>
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<td>Irrigation and Drainage: Development</td>
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<td>Nico Versteeg and Janine Tolboom</td>
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<td>Wastewater Reuse</td>
<td>Hugo van Gool</td>
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<td>Lake Management</td>
<td>Lawrence Mee</td>
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<td>Wetlands Management</td>
<td>Joop de Schutter</td>
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<td>Management of Aquatic Plants</td>
<td>Jan Vermaat</td>
<td>2003</td>
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Annex D

Sector and thematic codes


SECTOR CODES

Sectors are:

- High-level grouping of economic activities based on the types of goods or services produced.
- UN classification of economic sectors used as point of reference.
- Mutually exclusive
- Used to indicate which part of the economy is supported by the Bank intervention

Sectors are not:

- Methods of delivery of Bank support, e.g., adjustment loan, financial intermediation loan, distance learning, etc.
- Reflections of the administrative structure which changes over time.
- Measures of outcomes, e.g., corporate priorities.

AGRICULTURE, FISHING AND FORESTRY

AB Agricultural extension and research
AJ Animal production
AH Crops
AT Forestry
AI Irrigation and drainage
AZ General agriculture, fishing and forestry sector

LAW AND JUSTICE AND PUBLIC ADMINISTRATION

BC Central government administration
BE Compulsory pension and unemployment insurance
BG Law and justice
BH Sub-national government administration
BK Compulsory health finance*
BZ General public administration sector

INFORMATION AND COMMUNICATIONS

CA Information technology
CB Media
CD Postal services
CT Telecommunications
CZ General information and communications sector

EDUCATION

EL Adult literacy/non-formal education
EC Pre-primary education
Analytical and Advisory Activities in Environmental and Natural Resource Management

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**FINANCE**

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**HEALTH AND OTHER SOCIAL SERVICES**

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**INDUSTRY AND TRADE**

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**ENERGY AND MINING**

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**WATER, SANITATION AND FLOOD PROTECTION**

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**THEMATIC CODES**

Themes are:
- The goals/objectives of Bank activities
- Consistent with the Bank’s corporate advocacy and global public goods priorities
- Also used to capture Bank support to the Millennium Development Goals

Themes are not:
- Methods/instruments of delivery or ways of doing business
- Reflections of the structure of Networks in the Bank
- Mutually exclusive

**ECONOMIC MANAGEMENT**

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23 Macroeconomic management
24 Other economic management
49 Trade facilitation and market access
50 Other trade and integration

PUBLIC SECTOR GOVERNANCE
25 Administrative and civil service reform
26 Decentralization
27 Public expenditure, financial management and procurement
28 Tax policy and administration
29 Other accountability/anti-corruption
30 Other public sector governance

RULE OF LAW
31 Access to law and justice
32 Judicial and other dispute resolution mechanisms
33 Law reform
34 Legal institutions for a market economy
35 Legal services
36 Personal and property rights
37 Other rule of law

FINANCIAL AND PRIVATE SECTOR DEVELOPMENT
38 Corporate governance
39 Infrastructure services for private sector devt.
40 Regulation and competition policy
41 Small and medium enterprise support
42 Standards and financial reporting
43 State enterprise/bank restructuring and privatization
44 Other fin. and private sector devt.

TRADE AND INTEGRATION
45 Export development and competitiveness
46 International financial architecture
47 Regional integration
48 Technology diffusion

SOCIAL PROTECTION AND RISK MANAGEMENT
52 Natural disaster management
53 Poverty strategy, analysis and monitoring
54 Social risk coping
57 Social risk mitigation
51 Social risk reduction
55 Vulnerability assessment and monitoring
56 Other social protection and risk management

SOCIAL DEVELOPMENT, GENDER AND INCLUSION
57 Participation and civic engagement
58 Conflict prevention and post-conflict reconstruction
59 Gender
60 Indigenous peoples
61 Social analysis and monitoring
62 Other social development

HUMAN DEVELOPMENT
63 Child health
64 Other communicable diseases
65 Education for all
66 Education for the knowledge economy
67 Health system performance
68 Nutrition and food security
69 Population and reproductive health
70 Other human development
88 HIV/AIDS*
89 Non-communicable diseases and injury

URBAN DEVELOPMENT
71 Access to urban services for the poor
72 Municipal finance
73 Municipal governance and institution building
74 Other urban development

**RURAL DEVELOPMENT**
75 Rural markets
76 Rural non-farm income generation
77 Rural policies and institutions
78 Rural services and infrastructure
79 Other rural development

**ENVIRONMENT AND NATURAL RESOURCES MANAGEMENT**
80 Biodiversity
81 Climate change
82 Environmental policies and institutions
83 Land management
84 Pollution management and environmental health
85 Water resources management
86 Other environment and natural resources management

**Theme Coding Guidance: Environment and Natural Resources Management**

**80 Biodiversity**
*Includes* activities aimed at:
- In situ conservation (establishment of protected areas, management of existing protected areas)
- Ex situ conservation (ex situ collections, germplasm and genebanks, arboretaums, zoos)
- Targeted biodiversity training, research and assessments
- Ecosystem management approaches, including payment for ecological services
- Freshwater and marine biodiversity protection
- Wetlands, mangroves, and coral reef protection.

**81 Climate Change:**
*Includes* activities aimed at:
- Carbon sequestration
- Alternative and renewable energy technologies
- Gas-flaring abatement
- Energy conservation and efficiency improvements
- Non-motorized transport
- Cleaner transportation technologies.

**82 Environmental Policies and Institutions**
*Includes* activities aimed at:
- Establishment and strengthening of environmental regulatory institutions (national, sub-national, local) environmental policies, regulations, monitoring, and enforcement
- Environmental assessment and management-capacity improvement
- Financing mechanisms and economic instruments for environmental management
- Environmental awareness building, education, and training

**83 Land Management**
*Includes* activities aimed at:
- Control and mitigation of land degradation, desertification and drought
- Land policies and administration, including titling, registration, tenure, and mapping
- Land rehabilitation, protection and conservation
- Sustainable land management practices
- Access to land resources, markets, information and technologies, and capacity building
• impact monitoring of land use and land use changes and interventions
• rural cadastres

84 Pollution Management and Environmental Health

Includes activities aimed at:
• mitigation of pollution and health effects from pesticide use
• reduction and elimination of the use of persistent organic pollutants and ozone depleting substances
• mitigation of non-point source pollution from agricultural runoffs
• cleaner fuels
• oil spill contingency planning and remediation
• rehabilitation of contaminated production sites and surrounding areas
• improved environmental management in mining and energy operations
• cleaner production and eco-efficiency
• industrial pollution control and prevention
• hazardous waste treatment, management, storage, and disposal
• reduction and elimination of the production of persistent organic pollutants and ozone depleting substances
• pollution abatement from shipping activities
• vehicle emissions monitoring and maintenance
• water pollution abatement

• sanitation and sewerage
• wastewater management and treatment
• solid waste management
• surface and ground water quality management and monitoring

85 Water Resources Management

Includes activities aimed at:
• freshwater/coastal/marine water resource mgmt.
• groundwater management
• watershed and river basin protection, management, and rehabilitation
• water resources management infrastructure (transbasin transfers, reservoirs and bulk water canals)
• water quality management
• flood protection and management
• bulk water allocation and pricing (water rights)
• drainage
• reservoir management improvement
• dam safety measures
• coastal zone and marine water management
• flood protection and management (e.g., inland navigation).

86 Other Environment and Natural Resources Management

Includes all other environmental activities that do not fall under other them.
I. OVERVIEW

An essential and increasingly important part of the World Bank’s contribution to development is the analytical and advisory work that is carried out for our client countries. Analytical and advisory activities provide a foundation for defining strategic environmental priorities and informing policy dialogue and decisions on projects and programs. These activities comprise Knowledge Management, Training and Research Services, non-lending Technical Assistance (TA), and Economic and Sector Work (ESW).

The World Bank’s new Environment Strategy emphasizes the need to enhance the Bank’s analytical and advisory assistance (AAA) to client countries and stresses the need for systematic and consistent environmental analytical work at both country and sector levels. Analytical tools such as the Country Environmental Analysis (CEA) and other Strategic Environmental Analyses (SEAs), including Energy-Environment Reviews, are expected to significantly contribute to achieving this objective at the respective levels.

II. KNOWLEDGE MANAGEMENT PRODUCTS

Knowledge Management (KM) or knowledge sharing at the World Bank is about capturing and organizing systematically the wealth of knowledge and experience gained from staff, clients, and development partners; making this knowledge readily accessible; and creating linkages between groups and communities working on similar topics. One aspect of this work is the preparation and dissemination of publications, technical and discussion papers, and good practice guidance notes.

III. TRAINING AND LEARNING

Training and Learning programs include a variety of internal and external training events and enhanced use of electronic media and distance learning opportunities. Activities on environmental issues are managed by the World Bank Institute (WBI)’s Environment and Natural Resources Division. WBI’s environmental management program promotes sound policies, regulations, incentives and institutional frameworks for sustainable develop-

IV. RESEARCH

Research on various environmental issues is another important non-lending service that the Bank provides to ensure effective development assistance. World Bank environmental research includes climate change, bio-diversity preservation, cost-effectiveness of coral reef protection, industrial pollution management, regulatory enforcement, valuation and taxation, public expenditures, pollution charges, transportation, air quality measurement, regulatory capacity, and the economics of nature tourism.

V. NON-LENDING TECHNICAL ASSISTANCE (TA)

Non-lending Technical Assistance (TA) refers to the transfer of skills and knowledge for developmental purposes and a key instrument for improving policies and project design, enhancing skills, and strengthening implementation capacity. To qualify as TA, an activity must (i) have the primary intent of enabling an external client to implement reforms and strengthen institutions; (ii) be freestanding (that is, not comprise an essential part of a lending project or economic and sector work); and (iii) be linked to a World Bank unit with clear accountability for the service provided.

As of September 2004, Bank TA products have been reclassified according to output types in order to simplify corporate reporting and evaluation and now the following TA output types are recognized: (a) Institutional Development Plan (IDP); (b) “How-to” Guidance (HTG); (c) Model/Survey; (d) Client Document Review (CDR); (e) Knowledge Sharing Forum (KSF). The old Action Implementation Plan (AIP) and Operational “How-to” (OHT) output types have been thus replaced by the IDP and HTG, respectively. The 2004 TA reform further links development objectives with results, thereby affirming the emphasis on interim outcomes, and improving the focus and quality of TA activities. The new Development Objective/Result entry in the activity initiation summary record enables task team leaders to record the development objective of the activity, add additional result indicators as needed, and assess the level of success achieved in the activity completions summary.

VI. ECONOMIC AND SECTOR WORK (ESW)

Economic and Sector Work (ESW) outputs are the primary means to communicate the Bank’s analytic work encompassing the analysis and advice necessary to strengthen policy dialogue, develop and implement country strategies, formulate effective lending programs, build institutional capacity, and inform the international community about a country’s development challenges.

To qualify as ESW, an activity should: (i) involve analytical effort; (ii) be undertaken
with the intent of influencing an external client’s policies and programs (an external client is typically a developing country or a group of developing countries; however, external clients may also be members of the development community, or participants at a meeting/conference); and (iii) be “owned” by a specific Bank unit, i.e., the output must represent the views of the Bank (rather than attribution to individual authors — be they Bank staff or consultants).

A. Classification of ESWs

Effective July 1, 2004, ESW activities can only be classified as a “Report” (RPT) or “Policy Note” (POL). Consultations/Country Dialogue (COD) and “Conference/Workshop” (CON) output types are no longer valid for the ESW product line and must be reclassified under other product lines such as TA, etc. By definition a “Policy Note” provides “just-in-time” advice to a client on a range of development issues while a “Report” denotes a study outlining policy recommendations and cover three main categories:

(i) Country diagnostic reports support country dialogue and provide upstream analysis for lending operations; they are divided into core diagnostic reports and other diagnostic reports
(ii) Country advisory reports provide advice on special topics
(iii) Regional reports address development issues that cut across several countries

Formal Environmental ESW reports include: (i) Country Environmental Analysis (CEA); (ii) Other Environmental Studies (ENS); (iii) Energy-Environment Review (EER), (iv) Strategic Environmental Assessment (SEA), and (v) Public Environmental Expenditure Reviews (PEE).

B. Some Important Guidelines on ESWs:

1) Internal Bank strategies are not ESWs:
Internal Bank strategies, like Country Assistance Strategies (CASs) and Sector Strategy Papers (SSPs) are not considered ESW. These products are inward-looking in nature, and their primary intention is not to inform or influence an external client’s policies. However, some of the analytical background activities that inform CASs and SSPs could be recorded as ESW, so long as they generate separate products that are owned by specific Bank units and delivered to external clients.

2) Difference between ESWs and TAs
Conferences, seminars, and workshops can effectively disseminate the results of ESW and build client capacity. Conferences/Workshops organized to disseminate the findings of an ESW report or policy note should be captured under the original ESW codes. A stand-alone capacity-building or other technical assistance activity that does not fulfill any one of the three ESW criteria, but is a direct client service should be entered in SAP as TA or other product line (i.e. DA, TE, or PT). The background and rationale for the reporting of stand-alone technical assistance is available under “Guidelines for Recording and Reporting Technical Assistance Projects in SAP” at http://opcs.worldbank.org/deliverables/files/Guideline_TA.doc

3) AAA that are not ESW:
AAA products like Joint Staff Assessments (JSAs) and other work directly related to PRSPs, and HIPC documents are product lines in their own right, with separate,
specific codes in SAP (“PR” for work on JSA/PRSP, and “HP” and “HR” for HIPC assistance and HIPC reports, respectively). The World Development Report is also a separate product line (“WD”), similarly to other research activities (“RF”) carried out or supervised by DEC. Finally, analytical work carried out as essential part of project preparation or supervision should be coded as “PE” (lending), not as ESW.

4) Partially Bank-funded ESWs

Network/Regional ESW procedures and guidelines apply to all ESW products that are even partially financed from the Bank’s administrative budget. These ESW tasks are also subject to assessment by QAG. For analytical work that is financed entirely from trust funds, Regions/Networks are encouraged to apply the same processing guidelines and procedures as for Bank-funded activities, while also ensuring compliance with the processing guidelines of the trust funds that provided the financing. However, if ESW processing guidelines have not been followed for a 100% trust-funded product, and there is no ownership by a specific Bank unit, it is not ESW.

C. Procedures for conducting ESW activities

Each type of diagnostic ESW report has been assigned to a specific Sector Board, which prepares and updates the guidelines/toolkit (including scope, methodology, quality assurance, etc.) for the report. If there is any question about a particular product, the Sector Board decides whether the product complies with the guidelines and is entitled to use the corresponding three-letter SAP code.

Building on a governance framework that was adopted Bankwide at the start of the ESW reform process in FY98, each Region developed its own ESW processing, reporting, and monitoring guidelines. Since then, the guidelines have been updated to reflect accumulated experience and expanded to include quality enhancement procedures. The latest versions of the regional ESW guidelines are posted on OPCS’s website at http://opcs/PS/pas-esw.html. Network Anchors have also established their ESW procedures. ESSD’s ESW guidelines can be accessed through the ESSD’s internal website.

D. Quality Enhancement of ESWs

The ENV Sector Board oversees the quality of ESW products with corporate significance including CEAs, and other ESW products with a budget larger that $100K. The Environment Department provides assistance with ESW quality enhancement through peer review, roundtable discussions, occasional reviews, and seminars. In addition, ESWs and other AAA products are subject to assessments by the Quality Assurance Group (QAG). QAG is looking for such aspects of ESWs as (i) scope and strategic relevance to the country context and CAS objectives; (ii) internal quality of the analysis; (iii) engagement of clients and other key stakeholders; (iv) potential impact in relation to the objectives and audiences specified at the outset in the concept paper or equivalent; and (v) Bank processes.

VII. Application of the new coding system to ESW

The Bank’s new thematic and sectoral coding system applies not only to investment and adjustment operations, but also to ESW, non-lending technical assistance, research, client training, and other activities that directly serve
the Bank’s clients. Activities that serve the Bank’s internal needs (such as quality assurance, operations evaluation, CAS preparation, knowledge management, training of Bank staff, and so on) are not coded.

The coding of activities is based on the topics addressed. Uniquely among operational instruments, each type of ESW reports has its own three-letter product code in SAP. This feature makes it possible to automate the assignment of sector and thematic codes to ESW reports. Specifically, SAP will produce a default set of sector and thematic codes with corresponding percentages/ranks when team leaders select the appropriate ESW product codes. Team leaders may modify these codes to reflect the specifics of their reports better.

The list of default sector and thematic codes and corresponding percentages/ranks is available at the following web address: http://opcs/ps/documents/kiosk/7sectorThematicCodesESW.pdf. Other ESW, non-lending technical assistance, research, and client training activities are coded manually by team leaders.

Additional information about ESW products and services is available on the Joint Country Analytic Work website at: www.countryanalyticwork.net

A list of ESW product codes can be found at: http://opcs/PS/documents/ESWproductcodes.pdf.

<table>
<thead>
<tr>
<th>AAA Products</th>
<th>ESW Report Types:</th>
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<tbody>
<tr>
<td>DA  DA</td>
<td>AGR  Other Agricultural Studies</td>
</tr>
<tr>
<td>EW  EW</td>
<td>CEA  Country Environmental Analysis</td>
</tr>
<tr>
<td>KE  KE</td>
<td>CEM  Country Economic Memorandum</td>
</tr>
<tr>
<td>PT  PT</td>
<td>DPR  Development Policy Review</td>
</tr>
<tr>
<td>RF  RF</td>
<td>EER  Energy Environmental Review</td>
</tr>
<tr>
<td>TA  TA</td>
<td>ENS  Other Environmental Studies</td>
</tr>
<tr>
<td>TE  TE</td>
<td>ENR  Energy Study</td>
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<tr>
<td>UE  UE</td>
<td>INF  Other Infrastructure Studies</td>
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<tr>
<td></td>
<td>MOG  Mining, Oil and Gas</td>
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<td></td>
<td>PSD  Privatization and Industrial Policy</td>
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<td></td>
<td>PSS  Other Public Sector Studies</td>
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<td></td>
<td>RRR  Regional Report</td>
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<td></td>
<td>RUR  Other Rural Studies</td>
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<td>URB  Other Urban Studies</td>
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<tr>
<th>ESW Output Types:</th>
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<tbody>
<tr>
<td>POL  POL</td>
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<td>RPT  RPT</td>
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</table>
ESSD ESW Annual Program

• As part of the annual business planning exercise, proposed ESW products are identified and presented to Department Management Team (DMT). DMT approves ESW program and budget for the following fiscal year
• Department Director shares approved program and budget with ESDVP and Sector Board, and if appropriate with other Sector Boards and country teams

Concept Paper (CP) (for all types of ESW)

• CP is required —to be prepared by Task Team Leader (TTL)
• For all tasks to be delivered within the current FY, the CP should normally be approved by September of that FY
• CP should cover the following: objectives, key relevant issues (SSP), audience, expected outputs, methodology, task team, role of client/stakeholders, peer reviewers, 1, budget, timetable, dissemination strategy, and follow-up Action Plan
• CP is normally 3 to 5 pages

CP Review Meeting (for all types of ESW)

• CP is distributed to DMT, peer reviewers and other concerned at least one week prior to the review meeting. CP is sent to ESDVP for information
• DMT, peer reviewers, and others involved send written comments to the department Director and TTL at least two working days before the meeting
• TTL prepares, and department Director circulates agenda at least one working day prior to the meeting
• Department Director (or designate) chairs the meeting which decides on approval and provides comments on issues to be addressed
• The chair circulates minutes, including the agreed budget and timetable, to all concerned within one week

Draft Report Review (For tasks that produce a report)

• Department Director distributes draft report at least one week before review meeting to DMT, peer reviewers, and other concerned (including ESDVP)
• Written comments should be sent to department Director and TTL at least two working days before meeting
• Department Director circulates agenda at least one working day prior to the meeting
• Department Director (or designate) chairs the meeting which provides guidance to the TTL for finalizing the report
• The chair circulates minutes, along with an Action Plan to implement the recommendations of the draft Report, within one week of the meeting

Final Distribution

• TTL revises and finalizes the report, taking into account comments by DMT, peer reviewers, and others, as well as guidance provided by the Review Meeting
• Department Director clears Final Report for distribution, including the Board as appropriate

Activity Completion Summary (ACS) (for all types of ESW)

• TTL circulates ACS within 6 months after delivery of the ESW task to the client
• Department Director clears ACS
Regional Factsheets for AAA

ANNEX F-I: SUB-SAHARAN AFRICA REGION

AFR: Number of ESW and TA products, FY 99–05

AFR: Distribution of ESW and TA by Primary ENRM Themes, FY 02–06

AFR: Thematic Distribution of the Active ENRM Lending Portfolio, End FY 04

Percentages based on commitment amounts; Figures in $ millions
EAP: Number of ESW and TA products, FY 99–05

EAP: Distribution of ESW and TA by Primary ENRM Themes, FY 02–06

EAP: Thematic Distribution of the Active ENRM Lending Portfolio, End FY 04

Percentages based on commitment amounts; Figures in $ millions
Annex F-3: Europe and Central Asia Region

ECA: Number of ESW and TA products, FY 99–05

ECA: Distribution of ESW and TA by Primary ENRM Themes, FY 02–06

ECA: Thematic Distribution of the Active ENRM Lending Portfolio, End FY 04

Percentages based on commitment amounts. Figures in $ millions.
**ANNEX F-4: LATIN AMERICA AND CARIBBEAN REGION**

**LCR: Number of ESW and TA products, FY 99–05**

**LCR: Distribution of ESW and TA by Primary ENRM Themes, FY 02–06**

**LCR: Thematic Distribution of the Active ENRM Lending Portfolio, End FY 04**

Percentages based on commitment amounts; figures in $ millions
ANNEX F-5: MIDDLE EAST AND NORTH AFRICA REGION

MNA: Number of ESW and TA products, FY 99–05

MNA: Distribution of ESW and TA by Primary ENRM Themes, FY 02–06

MNA: Thematic Distribution of the Active ENRM Lending Portfolio, End FY 04

Percentages based on commitment amounts. Figures in $ millions.
ANNEX F-6: SOUTH ASIA REGION

SAR: Number of ESW and TA products, FY 99–05

SAR: Thematic Distribution of the Active ENRM Lending Portfolio, End FY 04

Percentages based on commitment amounts; Figures in $ millions
Annex G

Qualitative Reviews of AAA (ESW and TA)

This annex contains summaries of all the environmental ESW and TA reviewed for this report.

### Africa Region

<table>
<thead>
<tr>
<th>AFRICA (PO number)</th>
<th>Region/Ctry:</th>
<th>Type:</th>
<th>TTL:</th>
</tr>
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<tbody>
<tr>
<td>Managing the Marine and Coastal Environment of Sub-Saharan Africa - Strategic Directions for Sustainable Development</td>
<td>AFR/ Sub-Saharan Africa</td>
<td>ESW</td>
<td>Indumathie V. Hewawasam</td>
</tr>
</tbody>
</table>

**Fiscal Year:** 2003

**Environmental Themes:** Env. Policies and Institutions (Primary 29%); Pollution Management and Env Health (Primary 29%); Biodiversity (Secondary 14%); Climate change (Secondary 14%); Water Resources Management (Secondary 14%)

**Other Themes:** None


**Objective:**

To promote awareness of the crisis affecting the coastal and marine areas of Sub-Saharan Africa, both from an urban and rural perspective, while outlining a strategic agenda for addressing priority issues and areas in partnership with international national, provincial, local, public, and private stakeholders, and raising consciousness of the need for sound planning and sustainable management of coastal and marine resources and areas.

**Content:**

The report details the social transformation and ecosystem degradation challenges facing coastal and marine environments in Sub-Saharan Africa. It describes the World Bank’s strategy for supporting sustainable development in the sector, while stressing an integrated approach to coastal management in Sub-Saharan Africa that is strategic in design. It calls for traditional investments in fisheries and coastal biodiversity as well as for creative interventions for making large-scale investments in infrastructure and water “coastal friendly” in order to avert impacts, while bringing tangible benefits to coastal populations.
and ecosystems. The report further identifies specific criteria for prioritization for integrated coastal management interventions and offers an illustrative baseline for priority-setting.

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<tr>
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<tbody>
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<td>AFR/Africa</td>
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<tr>
<td>Type:</td>
<td>ESW</td>
</tr>
<tr>
<td>TTL:</td>
<td>Agnes Kiss</td>
</tr>
</tbody>
</table>

**Environmental Themes:** Env. Policies and Institutions (Primary 29%); Pollution Management and Env Health (Primary 29%); Biodiversity (Secondary 14%); Climate change (Secondary 14%); Water Resources Management (Secondary 14%)

**Other Themes:**


**Objective:**

To evaluate the portfolio of biodiversity projects implemented in Africa during the past decade, in the context of the questions put forth by the 2001 Strategic Framework for Conservation of Biological Diversity in Sub-Saharan Africa (SFCBA) and the 2000 Strategic Framework for Linking Global Environment to National Sustainable Development for Sub-Saharan Africa (GENSDA).

**Content:**

This review compares the Africa biodiversity portfolio from 1992-2002 to the strategic frameworks in terms of seven categories: (i) geographic focus and system boundaries, (ii) design, (iii) institutional setting, (iv) financing structures, (v) mainstreaming, (vi) sustainability, and (vii) integration of lessons learned. Within these categories, the review examined 21 specific criteria and scored the portfolio against each. The review highlights several important findings on the portfolio: 1) progress in incorporating as many components of biodiversity as possible into projects as a result of increased stakeholder engagement and broaden project horizons; 2) improvement in the way projects integrate conservation and development priorities; 3) increase in the number of fully blended projects, which have been successful at incorporating biodiversity activities into Bank development projects; 4) improvement of leveraging sustainable sources of additional funding from the private sector and NGOs; 5) weakness in the M&E components of project design and weakness in overall knowledge management to achieve long-term conservation objectives; and 6) weakness in securing long-term financing for ensuring the greatest positive impact on biodiversity conservation.

<table>
<thead>
<tr>
<th>AFRICA (P077273)</th>
<th>Building a Sustainable Future: The Africa Region Environment Strategy</th>
</tr>
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<tbody>
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<td>Fiscal Year:</td>
<td>2002</td>
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<tr>
<td>Region/ Ctry:</td>
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<tr>
<td>Type:</td>
<td>ESW</td>
</tr>
<tr>
<td>TTL:</td>
<td>Agnes Kiss</td>
</tr>
</tbody>
</table>

**Environmental Themes:** Other ENRM (Primary 100%)

**Other Themes:** None

**Sectors:** Gen. Agriculture: 100%

**Objective:**

To outline the current thinking in the World Bank Group Africa Region about priorities and actions in the environmental arena in order to help its client countries achieve sustainable poverty reduction through better environmental management.

**Content:**

The strategy identifies the most urgent issues at the interface of environment and poverty and discusses
targeted actions for addressing them. It reviews the lessons from experience to date and proposes new approaches. The strategic framework of the document is aligned with the World Bank Environment Strategy.

The strategy looks at environment through a “poverty lens” to highlight aspects of environmental degradation that are particularly urgent in Africa, such as the importance of natural resources for sustainable livelihoods, the importance of environmental health impacts, the vulnerability to natural events and disasters, and the global importance of the region’s biodiversity.

Following the framework of the Bank’s Environment Strategy, this document emphasizes three thematic priorities: quality of life, quality of growth, and quality of the global commons. It also analyzes sub-regional and sectoral priorities. Finally, it defines cross-cutting priorities: people-focused ecosystem management, building an enabling environment for environmental management, and mobilizing resources for environmental management.

AFRICA (P077498) Soil Fertility Recapitalization Policy Note – Module 1 (draft)

Fiscal Year: 2004 Region/Ctry: AFR/ AFR Type: ESW TTL: Yves-Coffi Prudencio

Environmental Themes: Land Administration and Management (Primary 33%); Water Resources Management (Primary 33%); Other ENRM (Primary 33%)

Other Themes: None

Sectors: Gen. Agriculture/Fishing/Forestry: 100%

Objective:
To inform public investment decision makers and policy makers within the Bank and within sub-Saharan African (SSA) countries about returns to investment in soil, land, and water management in the SSA region, and about the effects of such types of investment on project performance as evaluated by the Operations Evaluation Department (OED).

Content:
This study is part of the first module of an analytical work (ESW) designed to assess in various sub-regions of sub-Saharan Africa why and how best the Bank could invest in soil, land, and water management (SLWM) activities as a means to alleviate poverty and to promote food security and economic growth in the region. SLWM included investments in soil fertility, soil conservation, land restoration, land management and administration, rain-water harvesting, irrigation, watershed and river basin management, forestry and agro-forestry, including related research, extension or training activities. The analysis is done in five sections. Section 1 provides an overview of the analytical framework by briefly reviewing the theoretical and empirical arguments on investment in SLWM and by presenting the theoretical relationships or linkages between project performance, economic rates of returns and SLWM. The second section compares the performance of agriculture projects with those of other sectors in the Africa region. The third section measures the effects of SLWM on the performance and economic rated of returns of projects. The fourth section reviews success stories of SLWM as well as experimental agro-economic data on investment in SLWM in Africa. Section 5 concludes by drawing the implications of the findings in previous sections for Bank operations and policies to fight poverty and land degradation in Africa. Part 2 focuses on opportunities and tools for investment in soil/land management in SSA offered by previous works under the Soil Fertility Initiative (SFI) and by other operation preparation activities underway in the Africa region.
AFRICA (P081239)  
**Land Policy and Land Reform in Sub-Saharan Africa:**
Consensus, Confusion, and Controversy (draft)

<table>
<thead>
<tr>
<th>Fiscal Year: 2004</th>
<th>Region/Ctry: AFR/ Africa</th>
<th>Type: ESW</th>
<th>TTL: Rogier van den Brink</th>
</tr>
</thead>
</table>

**Environmental Themes:** Land Administration and Management (Primary 40%)

**Other Themes:** Rural Policies and Institutions (Secondary 20%); Legal Institutions for a Market Economy (Secondary 20%); Personal and Property Rights (Secondary 20%)

**Sectors:** Gen. Agriculture/Fishing/Forestry: 100%

**Objective:**
To generate and to share policy relevant knowledge about land reform and land policy in sub-Saharan Africa. (this is from task description in SAP)

**Content:**
This report consists of two parts. The first part focuses on property rights in land – it gives a short narrative of some of the key “land tenure” or “land policy” issues and the emerging consensus around them. The second part addresses the redistribution of property rights in land from large to small farmers – redistributive land reforms. A policy framework for redistributive land reform is outlined within which the competing paradigms can actually compete there where it matters: on the ground.

GUINEA-BISSAU (P080741) Republic of Guinea-Bissau: Fishery Strategy Sector Note

<table>
<thead>
<tr>
<th>Fiscal Year: 2004</th>
<th>Region/Ctry: AFR/ Guinea-Bissau</th>
<th>Type: ESW</th>
<th>TTL: Francois G. Le Gall</th>
</tr>
</thead>
</table>

**Environmental Themes:** Environmental Policies and Institutions (Primary 40%)

**Other Themes:** Rural Policies and Institutions (Primary 40%); Poverty Strategy, Analysis, and Monitoring (Secondary 20%)

**Sectors:** General Agriculture/Fishing/Forestry: 100%

**Objective:**
To promote the sustainable management and development of the fisheries sector of Guinea-Bissau and to create a sector strategy note and an action plan. These strategy note and action plan would assist in the policy dialogue on the fisheries sector of Guinea-Bissau, based on the programs assessment of: (1) the potential of the fisheries resources; (2) current gaps in fisheries resource management; (3) cost and benefit sharing between national and international operators in the sector; and (4) specific actions and next steps necessary to rationalize sector governance (i.e. fisheries resource management, benefit distribution), and improve local fisheries development and benefit sharing.

**Content:**
This Note summarizes the conclusions of two World Bank missions undertaken to Guinea-Bissau under the Global Trust Fund for Sustainable Fisheries. This Trust Fund is a World Bank-managed initiative, sponsored by the Japanese Fishing Agency to prepare Fishery Strategy Notes in a number of selected interested countries with a view to promote more equitable economic contributions and a greater sustainability of fisheries. Based on the findings of these two missions and the objectives of the Global Trust Fund, this report analyzes the issues facing the fisheries sector and proposes a strategy for substantially increasing sustainable benefits to Guinea-Bissau from the sector.
**KENYA (P075910)**

**Towards a Water-Secure Kenya – Water Resources Sector Memorandum**

**Fiscal Year:** 2004  
**Region/Ctry:** AFR/ Kenya  
**Type:** ESW  
**TTL:** Rafik Hirji

**Environmental Themes:** Water Resources Management (Primary 28%); Pollution Management and Env. Health (Secondary 14%); Other ENRM (Secondary 14%)

**Other Themes:** Natural Disaster Management (Primary 28%); Infrastructure Services for Private Sector Development (Secondary 14%)

**Sectors:** General Water Sanitation 40%; General Info/Comm. 20%; General Energy 15%; Irrigation and Drainage 15%; Roads and Highways 10%

**Objective:**
To identify water resources management priorities and to propose a plan of action that will put water resources management (WRM) on a sound footing in Kenya. The memorandum lays a foundation for developing a water-secure Kenya. It will also guide the engagement of development partners who are committed to supporting reforms and investments for sustainable WRM and development in Kenya. The memorandum provides an economic rationale for extending the water resources reforms being undertaken by the Government of Kenya (GOK) and highlights the need to broaden the ownership of the reforms to include other sectoral ministries and community groups. It broadens and complements the analyses of water issues in the Country Economic Memorandum (CEM) and will be used to inform the Country Assistance Strategy (CAS).

**Content:**
This memorandum assesses four key issues. First, the natural characteristics of Kenya’s water resources require a proactive approach toward water resources management. Second, this report establishes the fundamental linkage between water insecurity and economic performance, social well-being, and regional tensions. Thirdly, the memorandum demonstrates how investment in the country’s water resources infrastructure has lagged behind population growth and an associated increase in the demand for water. The fourth part of the memorandum shows that the country experienced a loss of at least 11 percent, 16 percent, and 16 percent of GDP during the three consecutive years of the floods (1997-98) and droughts (1998-2000). This report also describes ongoing water resources policy, legal and institutional reforms, and experiences with the management of shared water resources.

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**MALAWI (P085729)**


**Fiscal Year:** 2004  
**Region/Ctry:** AFR/ Malawi  
**Type:** ESW  
**TTL:** Tijan M. Sallah

**Environmental Themes:** Other ENRM (Primary 100%)

**Other Themes:** None

**Sectors:** Gen. Agriculture/Fishing/Forestry: 100%

**Objective:**
To support the preparation of the Malawi Structural Adjustment Credit, i.e., Fiscal management and Accelerating Growth Program (FIMAG). These country dialogue notes were prepared as informal pieces of analytical and advisory services to build government ownership for agricultural reform and to shed light on key agricultural policy issues and options necessary for economic growth.

**Content:**
The report covers important topics for Malawi agriculture, including the need for (1) restructuring the Ministry of Agriculture, Irrigation and Food Security (MOAIFS) to support the Government’s decentraliza-
tion plan, involving devolution of front line services to the districts, improvement of district level planning and implementation capacities, and, improvement of district level financing, to promote better service delivery, (2) promoting land management towards greater efficiency and equity in land markets, (3) improving food markets, and measures to improve their efficiency, and promoting food security, and, (4) improving the tobacco marketing towards improved, and increased returns to farmers - particularly smallholders - through reduction of unnecessary levies. The second policy dialogue note addresses the centrality of land management to sustained agricultural growth, and poverty alleviation in Malawi. The third policy dialogue note deals with food security, and food markets (i.e., maize). This involves households’ ability to access the food they need, but is primarily an issue of household income, and in turn linked to growth in household agricultural productivity. The fourth dialogue note is on tobacco levies, which involves restructuring - or more specifically reducing - the levies in the tobacco marketing chain to levels where levies paid by farmers are commensurate with the services received.

MALI (P087148) Macroeconomic Growth and Water Variability in Mali (draft)

Fiscal Year: 2004 Region/Ctry: AFR/ Mali Type: ESW TTL: Tracy Hart

Environmental. Themes: Environmental Policies and Institutions (Primary 40%); Pollution Management and Env Health: (Primary 40%); Other ENRM: (Secondary 20%)

Other Themes: None

Sectors: Gen. Public Administration 100%

Objective: To support the FY04 Country Economic Memorandum (CEM) with study identifying and isolating risks from water variability in each of Mali’s primary sectors.

Content: This study informs and quantifies the extent to which hydrological variability (floods and droughts) affects the economic performance of sectors identified in the CAS as expected to be sources of growth. Recommendations drawn from the analysis include: (1) strengthen flood mitigation planning, with demonstration of costs and benefits, stronger technical capacities, and communication strategy for managing flows; (2) interventions must preserve correct incentives for individual households to manage labor across natural resources; (3) migration of labor across sectors and regions has been primary vehicle for mitigating Mali’s long periods of drought; (4) artisanal companion sectors to export-oriented sectors (e.g., artisanal gold) often provide critical drought-insurance function and link forward from households to growth arenas.

NIGERIA (P075326) Nigeria Poverty – Environment Linkages in the Natural Resource Sector

Fiscal Year: 2003 Region/Ctry: AFR/ Nigeria Type: ESW TTL: Indumathie V.

Environmental. Themes: Pollution Management and Env Health: (Primary 29%); Land Management: (Secondary 14%); Water Resources Management: (Secondary 14%); Other ENRM: (Secondary 14%)

Other Themes: Poverty Strategy: (Primary 29%)

Sectors: Cent. Government Administration: 20%; Gen. Water/ San.: 20%; Crops: 20%; Health: 20%; Other Social Services: 20%

Objective: To enable a better understanding of the environmental situation in Nigeria through a systematic assessment of the links between environmental and natural resource degradation and poverty.
Content:
This study aims to shed light on the actual linkages between poverty and environment in Nigeria, focusing on natural resource sectors in a rural setting. The study found (1) that rural households are strongly dependent on environmental resources, (2) that poverty is best understood in the context of vulnerability, indicated by fewer options for income sources and significant dependence on a single source, (3) that vulnerability is also associated with income variability, leading to extreme dis-saving at times, and (4) that the poor consume fewer environmental resources than do the rich. Recommendations include diversification of income sources for the poor and programs that target the wealthiest households to reduce their negative impacts on the environment. In addition, the report strongly suggests that the poverty reduction strategy for Nigeria reflects the linkage between natural resources and rural poverty.

SENEGAL (P080739) Republic or Senegal: Fishery Strategy Sector Note

Fiscal Year: 2004 Region/Ctry: AFR/ Senegal Type: ESW TTL: Francois G. Le Gall

Environmental Themes: Other: (Primary 40%)

Other Themes: Rural Policies and Institutions (Primary 40%); Poverty Strategy: (Secondary 20%)

Sectors: General Agriculture/Fishing/Forestry: 100%

Objective:
To promote the sustainable management and development of the fisheries sector of Senegal and to create a sector strategy note and an action plan. These strategy note and action plan would assist in the policy dialogue on the fisheries sector of Senegal, based on the programs assessment of: (1) the potential of the fisheries resources; (2) current gaps in fisheries resource management; (3) cost and benefit sharing between national and international operators in the sector; and (4) specific actions and next steps necessary to rationalize sector governance (i.e. fisheries resource management, benefit distribution), and improve local fisheries development and benefit sharing.

Content
This Note not only confirms that the sector is in crisis, and requires effective governance, it also implies a far different and in some respects more hands–on involvement of the both the sector administration and private stakeholders and their representatives in the governance process, including the management of the fish resources. This Note endorses the key recommendation of the working group on fishing rights for a mixed management system, and suggests how the adjustment from the current to the new system may be approached.

SOUTH AFRICA (P080292) Nature Tourism, Conservation, and Development in KwaZulu-Natal, South Africa

Fiscal Year: 2003 Region/Ctry: AFR/South Africa Type: ESW TTL: Ernst Lutz

Environmental Themes: Env. Policies and Institutions (Primary 29%); Pollution Mgmt (Primary 29%); Biodiversity (Secondary 14%); Climate change (Secondary 14%); Water Resources Management (Secondary 14%)

Other Themes: None


Objective:
To assess how various institutional, policy, and management options can advance nature-tourism contribution to biodiversity conservation, economic development, and social equity (the “triple bottom line”), with
a particular focus on the intermediary role played by alternatives for increasing money flows from conserv-
avation activities.

Content:
Using KwaZulu-Natal as a case study, this report provides an evaluation of, and policy advice on, key environmental and socio-economic issues concerning the development of nature tourism. Culminating in a multi-market model framework, the work draws on a range of analytical and research building blocks to highlight the complementarities and trade-offs in promoting and managing nature tourism to achieve economic development, social equity, and biodiversity conservation objectives as well as the role of conservation finance. Its key findings point that 1) efforts to improve biodiversity conservation reach beyond the wildlife industry to build the foundations of a nature tourism economy, 2) private sector concessions in public protected areas contribute to equitable development and job creation while generating conservation finance, and 3) foreign wildlife-viewing tourism demand is not price-responsive, thus allowing for price differentiation to augment conservation finance, form the basis for specific policy recommendations for developing balanced, pro-poor tourism opportunities in the KwaZulu-Natal region.

Togo National Environmental Action Plan (French - draft)

Fiscal Year: 2003  Region/ Ctry: AFR/Togo  Type: TA  TTL: Klouvi Ayi Adamah

Environmental Themes:
- Env Policies and Institutions (Primary 29%)
- Pollution Management and Env Health (Primary 29%)
- Biodiversity (Secondary, 14%)
- Climate change (Secondary, 14%)
- Water Resources Management (Secondary, 14%)

Sectors:
- Gen. Agr/fish/forestry: 30%
- Gen. Public Administration: 20%
- Gen. Water/ San.: 20%
- Gen. Industry/Trade: 15%
- Gen. Energy: 15%

Objective:
The stated objectives of the NEAP process were to: (i) define and promote a national environmental policy; (ii) develop methodological tools and programs for the strategic management of the environment; (iii) promote environmental awareness in communities and the population in general; (iv) mobilize financial resources to implement the proposed projects and programs.

Content:
The report presents a general description of the state of environment, the environmental institutions, environmental and social impacts of the main economic sectors, and a plan of action to attend to key environmental challenges. The plan of action is organized by strategic directions under which specific objectives are defined as well as general action items to achieve them.

East Asia Region

The Poverty-Environment Nexus in Cambodia, Lao PDR, and Vietnam

Fiscal Year: 2002  Region/Ctry: EAP/Laos, Vietnam, Cambodia  Type: TA/ESW  TTL: Nygard Jostein

Environmental Themes:
- Env. Policies and Institutions (Primary 29%)
- Pollution Management and Env Health (Primary 29%)
- Other ENRM (Secondary 14%)

Other Themes:
- Poverty Strategy, Analysis, and Monitoring (Primary 29%)

Sectors:
- Sub-National. Government Administration: 60%
- Central Government Administration: 40%
Objective:
To investigate the empirical evidence in Vietnam, Laos and Cambodia as regarding the actual prevalence and importance of the poverty-environment nexus and complementary problems. During phase I, the objective is to provide initial poverty-environment nexus findings based upon a spatial analysis using secondary source.

Content:
The first phase of the PEN study maps poverty/environmental overlaps as reflected by the geographical distribution of poverty and five environmental factors (deforestation, fragile soils, indoor air pollution (proxy: by fuel use patterns), access to clean water and sanitation, and outdoor air pollution) in three countries (Vietnam, Lao PDR and Cambodia).

The results of the study show some defined poverty-environment linkages in the three countries. Phase II of this study will deepen the level of analysis of poverty-environment indicators.
tackle air pollution problems by: (1) sharing knowledge and experiences on air quality management; (2) improving policy and regulatory frameworks at the regional level; (3) promoting integrated air quality management strategies and regulations; and (4) piloting projects to encourage innovation.

Content:

This progress report summarizes activities and achievements of the Clean Air Initiative for Asian Cities (CAI-Asia) since its launching in February 2001. CAI-Asia carried out a number of studies and pilot projects in the past year, including the Public Health and Air Pollution in Asia (PAPA) project, the Diesel Emission Reduction Program in Bangkok, a study on poverty and pollution, and a study on the impact of low and ultra low sulfur diesel on (PM) emissions.

(PAPA Project) In December 2002, the Health Effect Institute (HEI) under the umbrella of CAI-Asia launched the PAPA project to study and assess the health consequences of air pollution, and then produce a concise and understandable synthesis of existing and new studies in Asia. This project was conducted initially in four representative Asian mega-cities (Bangkok, Hong Kong, Shanghai and Wuhan).

(The Diesel Emission Reduction Program) The World Bank, in partnership with the Pollution Control Department in Thailand, launched the Diesel Emission Reduction Program to gain a better understanding of factors affecting in-use diesel vehicle emissions, quantify them where possible, and assess alternative mitigation options to assist decision making in developing countries.

(Poverty and Pollution) Following the discussions in the General Assembly in 2002, the CAI-Asia Secretariat has been actively following up with different member organizations to develop a pilot project on poverty and air pollution.

(Impact of low and ultra low sulfur diesel on emissions) To follow-up on the pilot study on the assessment of costs of refinery modification to produce low and ultra-low sulfur diesel, an additional pilot project was developed and started in 2003 to assess the impact of using low and ultra-low sulfur fuel in in-use vehicles in four cities in Asia. This study, which is carried out as a modeling exercise, is supported by the Japan Petroleum Energy Center (JPEC) and International Petroleum Industry Environmental Conservation Association (IPIECA).

Other important program activities include organizational strengthening, knowledge management, capacity building and training, regional policies and harmonization of standards, formulating and implementation of AOM strategies.

CAMBODIA (P079915) Cambodia Environment Monitor 2003

Fiscal Year: 2003 Region/ Ctry: EAP/Cambodia Type: TA TTL: Glenn Morgan

Environmental. Themes: Env. Policies and Institutions (Primary 50%); Other ENRM (Primary 50%)

Other Themes: None

Sectors: Other Social Services: 100%;

Objective:

To present a snapshot of environmental trends in Cambodia across a range of issues in order to engage and inform interested stakeholders of key environmental changes as they occur.

Content:

The report is organized in three pillars: the green, blue, and brown agenda. Within each pillar, there are several topics analyzed. Under the green agenda, forest resources, biodiversity, protected areas, and land issues are analyzed. Freshwater and marine resources are reviewed in the blue agenda. Finally, water quality, solid and hazardous waste are the topics analyzed in the brown agenda. The report includes a short description of existing policies and institutions, with a brief table on budget allocation. The presenta-
tion of each topic includes an overview of the state of the environment, the key challenges and constraints to sustainable growth and development, and the operational responses (projects, policies and institutions).

CAMBODIA (P086375)  
Assessment of Potential Impacts of Social Land Concessions (draft)  
Fiscal Year: 2004  
Region/Ctry: EAP/Cambodia  
Type: ESW  
TTL: Wael Zakout  

Environmental Themes: Land Administration and Management (Primary 50%)  
Other Themes: Rural Policies and Institutions (Primary 50%)  
Sectors: Gen. Agriculture: 60%; Other Social Services: 40%  

Objective:  
The specific objectives of the PSIA were to determine the poverty and social impacts of land reform, i.e., implementation of the Sub-Degree on Social Land Concessions; assessing the likelihood of reaching full achievement, and the determinants for successful performance.  

Content:  
The report focuses on understanding the impacts of alternative policy measures that will govern the access to, and the utilization of land. Four main issues of the study are potential social and economic impacts, institutional and policy issues (designs and implementation), additionally required infrastructure and services, and landlessness and potentially available land.

CHINA (P088206)  
Integrating Land Policy Reforms in China: Challenges, Options, and Possible Next Steps in Policy Development (draft)  
Fiscal Year: 2004  
Region/Ctry: EAP/China  
Type: ESW  
TTL: Guo Li  

Environmental Themes: Land Administration and Management (Primary 33.3%)  
Other Themes: Rural Policies and Institutions (Primary 33.3%); Other Urban Development (Primary 33.3%)  
Sectors: Gen. Public Administration: 50%; Gen. Agriculture: 50%  

Objective:  
To prepare a roadmap of policy reform for the Government considerations and follow-up actions. The roadmap will review the current land management and administration system, examine its achievements as well as failures, identify the challenges and the remaining agenda, and outline the social and economic implications of major policy options.  

Content:  
This roadmap discusses the key challenges which such an integrated land policy framework needs to address and explores some of the options and sequencing issues under consideration. It also suggests some next steps that government cooperation with the World Bank and other international institutions might take to support the development of the emerging integrated land policy framework.

INDONESIA (P073214)  
Indonesia Biodiversity Strategy and Action Plan, 2003-2020  
Fiscal Year: 2003  
Region/Ctry: EAP/Indonesia  
Type: TA  
TTL: Anthony Whitten  

Environmental Themes: Biodiversity (Primary 50%); Env. Policy and Institutions (Primary 50%)  
Other Themes: None
Analytical and Advisory Activities in Environmental and Natural Resource Management

**Sectors:** Law and Justice (50%); Central Government Administration (50%)

**Objective:**
To facilitate activities directed at conservation and sustainability of biodiversity as indicated in the UN Convention on Biodiversity.

**Content:**
The report conducts a review of the needs and priority actions outlined in Indonesia Biodiversity Strategy and Action Plan 1993 to identify what has been achieved and note what could not be implemented and why. It also identifies new needs and priority actions necessary to revise the 1993 plan according to potential changes in environmental policies. In addition, the report identifies existing opportunities and constraints for effecting biodiversity conservation and sustainable use, including the gaps in existing knowledge, and set new, clearer, and realistic targets with an action plan to address them.

The new action plan presented for 2003-2020 aims, among other things, to improve the ability of local communities to sustainably manage biodiversity based on local knowledge and wisdom, build sustainable economy by developing biodiversity-based technology that is environmentally and socially friendly, and build and develop effective institutional arrangements and institutional capacity at national and local levels, accompanied by effective law enforcement for biodiversity management.

**INDONESIA (P073212) National Strategy Study on CDM in Forestry Sector**

**Fiscal Year:** 2003  **Region/Ctry:** EAP/Indonesia  **Type:** TA  **TTL:** Thomas Walton

**Environmental Themes:** Env. Policies and Institutions: (Primary 50%); Climate Change (Secondary, 25%); Other ENRM (Secondary, 25%)

**Other Themes:** None

**Sectors:** Central Government Administration (60%); Forestry (40%)

**Objective:**
This study aims to assist the government of Indonesia in gaining understanding of the benefits and the challenges associated with the country’s participation in the Kyoto Protocol Clean Development Mechanism (CDM) in the specific context of sink or land-use, land-use change, and forestry sector (LULUCF).

**Content:**
Structured as a Technical and a Final Reports, the study Identifies Indonesia’s total LULUCF CDM volume (at 28Mt CO2) and associated market share Indonesia (4.7%) and identifies the area allocation for potential forest carbon projects. Having quantified the economic benefits of CDM participation, the study goes on to outline the preparatory work that Indonesia must undertake in order to be able to access the CDM market and host CDM project with particular focus on institutional and regulatory measures at both macroeconomic and sector-specific level as well as on project sustainability capacity building needs.

**INDONESIA (P079915) Indonesia Environment Monitor 2002**

**Fiscal Year:** 2003  **Region/Ctry:** EAP/Indonesia  **Type:** TA  **TTL:** Thomas Walton

**Environmental Themes:** Env. Policies and Institutions (Primary 50%); Pollution Management and Env Health (Primary 50%)

**Other Themes:** None

**Sectors:** Other Domestic and International Trade: 100%;
**Objective:**
The objective of this Monitor is to present to a wide range of stakeholders a snapshot of key pollution issues and trends in the country in an accessible and easy-to-understand format. It further aims to establish a baseline and provide a starting point for periodic updates on the pollution trends and conditions in Indonesia.

**Content:**
Using a concerns-causes-response matrix, the Monitor offers a comprehensive overview of ambient conditions in air, water (including marine environment), and soil and the main pollution sources and threats to both human health and the natural resources base. While recognizing significant pollution management progress such as the phase out of lead gasoline in Jakarta and CFC reductions, the report also underscores a number of key challenges, including i) declining air quality due to increasing urbanization, motorization, and industrialization pressures, ii) inadequate sewerage and sanitation coverage, with Indonesia still ranking among the lowest places in Asia, and iii) poor solid and hazardous waste management threatening human health and resulting in land, air, and water degradation.

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**INDONESIA (P071232) Decentralization of the Forest Governance System: An analytical Framework (Draft)**

**Fiscal Year:** 2002  
**Region/Ctry:** EAP/Mongolia  
**Type:** TA  
**TTL:** Giovanna Dore

**Environmental Themes:** Env Policies and Institutions (Primary 100%)

**Other Themes:** None

**Sectors:** Sub-National Government Administration 100%

**Objective:**
To provide a structured analytical framework for the assessment of the impacts of decentralization on natural resources with specific focus on forestry resources.

**Content:**
Looking at seven “forest-rich” provinces in Indonesia, the study an analytic matrix to measure the five-year Indonesia forestry sector decentralization progress by 1) “Measuring” the process of decentralization by assessing the changes undergone by the Indonesia’s Forest Governance System (FGS) and 2) “Measuring” the outcomes of decentralization along five FGS key functions (policy setting, planning, legislative, plan implementation, and revenue sharing) in respect to four parameters (effectiveness in terms of relevance and impact, participation, transparency, and accountability.

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**INDONESIA (P072326) Strategy for Supporting Good Governance of Forest Land in Indonesia**

**Fiscal Year:** 2003  
**Region/Ctry:** EAP/Indonesia  
**Type:** TA  
**TTL:** Thomas Walton

**Environmental Themes:** Biodiversity (Primary; 40%); Land Management (Primary; 40%)

**Other Themes:** Rural policies and institutions (Secondary, 20%)

**Sectors:** Forestry (50%); Central Government Administration (25%); National Government Administration (25%)

**Objective:**
This report is an output of forest policy dialogue and related technical studies that began de facto with the preparation of the Bank-supported Policy Reform Support Loan (PRSL-I) in early 1998 and continued more formally after forestry became a CGI agenda item in July of 1999. It is intended to guide the Bank’s
activities in the forest sector in Indonesia for the next three to five years. The paper will be used to inform
the CAS preparation process, to guide planning for AAA activities, and to ensure that the Indonesia Country
Team takes advantage of opportunities to mainstream forest management into lending operations.

Content:
This paper presents arguments on five strategic opportunities (SO) in support of good governance in
decentralized forest land management in Indonesia towards two closely-interrelated goals — sustainable
forest (and natural) resource management, and poverty reduction. The SOs are: Extending decentralized
natural resource governance to include participation of local communities in decision-making; developing
Community-driven Development (CDD) opportunities for direct and sustainable co-management of
forestry resources in public lands by village communities (separately or in association; strengthening of
analytical capacity for reform of sectoral and related policies and institutions coupled with effective outreach
of the resulting knowledge; specific high-profile initiatives as catalysts for reform towards good forest
governance; and mainstreaming forest resource management lessons into Bank and other initiatives, in
some cases helping to bridge artificial divides that often beset inter-institutional relationships that are key
to sustainable forest land (and natural resource) management.

MONGOLIA (P080283) Mongolia Forestry Sector Review

Fiscal Year: 2003 Region/Ctry: EAP/ Mongolia Type: TA TTL: Anthony J. Whitten

Environmental Themes: Other ENRM: (Primary 100%)

Other Themes: None

Sectors: Agriculture- Forestry = 100%

Objective:
The purpose of this Forest Sector Review is to inform the preparation of the new Mongolia CAS by
analyzing how potential developments and changes in the forest sector could more effectively support the
rural poor in Mongolia. The Bank has not previously been active in the forestry sector, where the main
donors have been UNDP, FAO, ADB, JICA, FINNIDA and GTZ. It is now in the process of investigating
opportunities to work within the sector in the new CAS, preferably in partnership with existing donors, to
encourage sustainable forest management (SFM) and improve the livelihoods of poor rural communities.

Content:
A wide range of general economic and societal trends influences forest protection, conservation and
utilization in Mongolia. These trends are important in understanding the general pressures being exerted on
the country’s forest resources, and assessing the feasibility of potential policy options. On the one hand,
poorer, increasingly vulnerable households are being forced to adopt a short-term focus to earning a living
by utilizing available natural resources by whatever means they can. Moreover, the government’s capacity
to regulate these natural resource activities is weak due to an ineffective and under-funded public service.
The review makes several recommendations including the formation of “consultative groups on forestry”;
pilot projects in community forest management; major expansion of its improved household stove pro-
gram; and feasibility studies and “seed” support to large-scale commercial production of briquettes.

MONGOLIA (P073669) Assessment of Biological Diversity Conservation of Mongolia

Fiscal Year: 2003 Region/Ctry: EAP/ Mongolia Type: TA TTL: Anthony J. Whitten

Environmental Themes: Biodiversity: (Primary 33%); Env. Policies and Institutions: (Primary 33%; Water
Resources Management: (Secondary 17%)
Other Themes: Indigenous people: (Secondary 17%)
Sectors: Central Government Administration: 80%; Gen. Agriculture, Fishing and Forestry: 20%

Objective:
(1) To evaluate its biodiversity conservation capacity building needs, define country specific priorities for capacity building, analyze functional capabilities and determining mechanisms necessary to protect national biodiversity in accordance with the Biodiversity Conservation Action Plan recommendations and the Global Environment Facility, Conference of the Parties and Convention on Biological Diversity Guidelines and (2) to facilitate a consultative process for the preparation for the preparation and publication of the Second National Report to the Convention on Biological Diversity.

Content:
The report assesses the current conservation measures and their management, laws and institutional arrangements for sustainable use of biodiversity, indigenous and traditional knowledge, impacts of tourism, information and telecommunication systems of the special protected areas, and public survey on biodiversity conservation. Some of the common problems are identified in this report. Each section of the paper lists specific recommended actions including amending laws of special protected areas and the buffer zones; developing the human resources capacity at policy and decision-making levels; increasing training in biodiversity for university teachers and botanists, local communities and tourism teachers; expanding tourism activities etc.

MONGOLIA (P070497) Review of the Environmental and Social Policies and Practices for Mining in Mongolia

Fiscal Year: 2003 Region/Ctry: EAP/ Mongolia Type: TA TTL: Whitten Anthony J.

Environmental. Themes: Other ENRM: (Primary 100%)

Other Themes: None
Sectors: Mining and Other Extractive.: 100%

Objective:
The objectives are to present an overall diagnosis of environmental and social conditions of the mining sector and to identify strategic priorities for future studies and action plans - the identified options could include broad policy, legal, regulatory, and institutional issues, programmatic actions, and specific targets for environmental and social mitigation in the mining sector. The priorities will primarily consider building institutional capacity, developing consensual approaches with broad participation, and promoting more efficient use of natural resources.

Content:
The examination of mining practices in the Zaamar and Tolgoit areas identified the main environmental and safety issues as (1) the siltation and turbidity of surface, (2) potential acid mine drainage, (3) changes in the hydrogeological regime and groundwater quality, (4) air pollution due to dust generation, and 5) mine waste, among others. The principle socio-economic issues include towns’ dependency on mining, land use for herding, and artisanal mining. The review of the legal and institutional frameworks found that the lack of environmental management expertise in licensing agencies and know-how in local inspectorates, absence of litigation mechanisms, among others, hamper the enforcement of laws and regulations. Based on these findings, proposed actions are to pilot both environmental baseline study and socio-economic baseline study in the Tsagaan-Suvargin district, to implement environmental mitigation, to strengthen institutional capacity in the inspection system and to initiate social management of the mining sector.
<table>
<thead>
<tr>
<th>MONGOLIA (P079698)</th>
<th>Environment Monitor 2004</th>
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<tbody>
<tr>
<td><strong>Fiscal Year:</strong> 2004</td>
<td><strong>Region/Ctry:</strong> EAP/ Mongolia <strong>Type:</strong> ESW <strong>TTL:</strong> Giovanna Dore</td>
</tr>
<tr>
<td><strong>Environmental. Themes:</strong> Other ENRM: (Primary 66.6%)</td>
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<tr>
<td><strong>Other Themes:</strong> Environmental Policies and Institutions: (Secondary 33.4%)</td>
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<tr>
<td><strong>Sectors:</strong> Sanitation: 25%; Solid Waste Management: 25%; Water Supply: 25%; Sewerage: 25%</td>
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<tr>
<td><strong>Objective:</strong> To present a snapshot of key environmental trends in the country and to raise awareness about the environmental challenges of urbanization in Mongolia.</td>
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<tr>
<td><strong>Content:</strong> The report is divided into four sections. The first presents an overview of the urban transformation in Mongolia, based on changes in the structure, and distribution of the population. The second focuses on the environmental pressures created by urbanization, providing data on air pollution, water availability and quality, solid waste management, and land degradation. The third section summarizes government responses to urban environmental challenges, and, the final section outlines the main challenges for improving, strengthening environmental management in urban areas.</td>
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<tr>
<th>PALAU (P079636)</th>
<th>Economic Value of Coastal Resources in Palau (draft)</th>
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<tbody>
<tr>
<td><strong>Fiscal Year:</strong> 2004</td>
<td><strong>Region/Ctry:</strong> EAP/ Palau <strong>Type:</strong> TA <strong>TTL:</strong> Sofia U. Bettencourt</td>
</tr>
<tr>
<td><strong>Environmental. Themes:</strong> Other ENRM: (Primary: 66.6%)</td>
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<tr>
<td><strong>Other Themes:</strong> Other Economic Management (Secondary: 33.4%)</td>
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<tr>
<td><strong>Sectors:</strong> General Agriculture/Fishing/Forestry: 70%; General Water/Sanitation/Flood: 30%</td>
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<tr>
<td><strong>Objective:</strong> To determine the economic value of coastal resources in Palau.</td>
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<td><strong>Content:</strong> This technical assistance note assists the Government of Palau in determining the economic value of coral reefs and water resources, including economic value of natural resources, fisheries, tourism, and other values (e.g. coastal protection value). This report also discusses threats to Palau’s coastal resources and provides policy implications and recommendations.</td>
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<th>PHILIPPINES (P077378)</th>
<th>Philippines Environment Monitor 2002 « Let’s All act to Clean the Air »</th>
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<tbody>
<tr>
<td><strong>Fiscal Year:</strong> 2002</td>
<td><strong>Region/Ctry:</strong> EAP/ Philippines <strong>Type:</strong> ESW <strong>TTL:</strong> Shah Jitendra J.</td>
</tr>
<tr>
<td><strong>Environmental. Themes:</strong> Env Policies and Institutions: (Primary 100%);</td>
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<tr>
<td><strong>Other Themes:</strong></td>
<td></td>
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<tr>
<td><strong>Sectors:</strong> Other social Services: 100%</td>
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<tr>
<td><strong>Objective:</strong> The objective of this report is to inform stakeholders about the air quality issues in the Philippines and to identify the key challenges related to implementing a national integrated air quality management program.</td>
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<tr>
<td><strong>Content:</strong> Growing human and vehicle populations and increasing industrial activities are the main causes of worsen-</td>
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</table>
ing air quality in the urban centers of the Philippines. While the Government and Civil Society efforts have resulted in reduction and even elimination of some pollutants, air quality in the country remains poor. Major impediments include poorly enforced laws, weak institutional capacity, and inadequate investment.

Using a pollutant-sources-impact-response matrix, the Monitor offers an introduction and assessment of the specifics of the Philippines air pollution problems with a strong focus on the impacts, particularly those of particulates pollution, on public health and public perception. It then outlines the responses undertaken by the Government, the civil society, and the private sector and describes existing institutional arrangements, legal framework, and budget commitments. The Monitor concludes by identifying challenges to implementing an integrated air quality management program with particular focus on low cost measures that could yield significant benefits: 1) Targeting particulate matter from vehicle emissions in Metro Manila; 2) Using catalytic converters in gasoline vehicles; 3) Improving public transport and traffic management; 4) mobilizing the necessary commitment and institutional capacity to implement the 1999 Clean Air Act; 5) Strengthening enforcement with incentives and penalties; 6) Improving air quality management; and 7) Moving from public awareness building to participation.
The objective of this report is to examine local, regional and national water quality issues in the Philippines, including key trends in water pollution indicators, and institutional and policy frameworks addressing these issues. It further looks to identify the important economic and health costs of water pollution and the challenges related to implementation of water quality management in the Philippines.

The report describes the current status on water availability and quality; water pollution sources; water issues in the critical regions (metropolitan Manila, Southern Tagalog, Central Luzon, Central Visayas); economic loss related to water degradation such as health, fishery, and tourism; national water policies and laws; urban sanitation and sewage as a priority action area and its investment requirement; the challenges and actions. The main recommendations include (1) maintenance of public support, (2) realignment of regulations and laws as well as institutions to protect the environment, (3) application of innovative solutions, and (3) financial management of pollution control and water service provision.
Kong, Singapore, Taipei, and Tokyo. While overall air quality has improved, it is still a problem in traffic corridors and urban centers like Bangkok. The Thailand Environment Monitor for 2002 concentrates on air quality.

Content:
The 2002 Environment Monitor comprises seven sections. The first two sections after the summary deal with the sources of pollution, and the monitoring of air quality. The third section describes the trends for different pollutants. The fourth section estimates health and non-health impacts of air pollution along with the public perception, while the fifth section deals with various policy responses taken to address air quality issues. The sixth section focuses on environmental management (legislation, institutions, and budget) pertaining to air quality management. The final section presents the main air quality challenges for Thailand.

THAILAND (P087534) Thailand Environment Monitor 2004

TTL: Patchamuthu
Fiscal Year: 2004 Region/Ctry: EAP/ Thailand Type: ESW Ilangovan

Environmental. Themes: Environmental Policies and Institutions: (Primary 50%); Other ENRM: (Primary 50%)

Sectors: Solid Waste Management: 100% 

Objective:
To present a snapshot of key environmental trends in the country and to inform stakeholders on key environmental changes as they occur. The focus of Environmental Monitor 2004 is biodiversity.

Content:
The Thailand Environment Monitor 2004 assesses the status, trends, lessons and challenges related to biodiversity and its conservation. The report is in six sections. Section 1 provides an overview of Thailand’s biodiversity and why its conservation is a national concern. Section 2 looks at the biodiversity in the four major ecosystems of the country, especially at the threatened species, while Section 3 describes the ways in which conservation is both planned and executed. Section 4 focuses on awareness and interest in biodiversity conservation. Section 5 assesses biodiversity in the context of the legal framework, institutions, and current expenditures. Finally, section 6 outlines the challenges faced by Thailand.

THAILAND (P072944) Country Development Partnership – Environment (CDP-E)

TTL: Patchamuthu
Fiscal Year: 2004 Region/Ctry: EAP/ Thailand Type: ESW Ilangovan

Environmental. Themes: Environmental Policies and Institutions: (Primary 40%); Other ENRM: (Primary 40%); Pollution Management and Environmental Health: (Secondary 20%)

Sectors: Central Govt. Administration: 70%; Gen. Water/Sanitation/Flood Protection: 30%

Objective:
To improve environmental quality by supporting the implementation of a medium-term reform agenda with the corresponding capacity building, technical support, and investment needs to address the challenges identified by the series of Environment Monitors. In response to this objective, the CDP-E is organized around three specific themes - air quality, water quality, and solid and hazardous waste - and one crosscutting theme - institutions and instruments.
Content:
The report begins with an introduction of Country Development Partnership – Environment (CDC-E), then provides an historical evolution of environmental policies and followed by an assessment of the State of the Environment and the main challenges that need to be addressed to improve environmental quality. The next part of the report describes the CDC-E Framework, Strategy and Components along with Development and Partnership Matrices. This is followed by a description of the Results Measurement and Management, which provides an approach to measure outcomes with a matrix summarizing the anticipated results. The Institutional and Partnership arrangements and Budget and Resource Mobilization sections outline the approach to implementing the CDP-E. The report concludes with an analysis of the Development Impact and Risks.

VIETNAM (P072641) Vietnam National Strategy Study on Clean Development Mechanism

Fiscal Year: 2003 Region/Ctry: EAP/ Vietnam Type: TA TTL: Patchamuthu Illangovan

Environmental. Themes: Climate change (Primary 40%); Env Policies and Institutions (Primary 40%); Pollution Management and Env Health (Secondary 20%)

Other Themes: None

Sectors: Central Government Administration (70%); Gen Industry/Trade sector (15%); Gen Energy Sector (15%)

Objective:
The main objective of the Vietnam National Strategy Study for Clean Development Mechanism (CDM) are to analyze Vietnam’s CDM potential and develop a strategy for the development of a CDM market in Vietnam.

Content:
The study focuses on a wider range of topics related to CDM in Vietnam, including: 1) Current CDM policy status; 2) GHG abatement potential; 3) CDM market opportunity; 4) analysis of institutional set up and institutional requirements; 5) implementing CDM: criteria and approval processes; 6) realization of CDM Opportunities in Vietnam; and 7) summary of Vietnam National CDM strategy. Some findings of the study suggest that it is the right time for Vietnam to position itself in the CDM market; emissions from the energy sector are projected to increase dramatically by 2020, therefore the Vietnamese government has decided to focus its CDM strategy mainly on the GHG abatement potential of the energy sector; CDM activities in Vietnam should be encouraged with respect to their potential for environmental protection, technology transfer, replicability of projects and prospects for learning, therefore efforts should be made to attract CDM investments; and in the institutional context, there are a series of issues that may pose as a problem for the implementation of a CDM framework in Vietnam, however the government is making efforts to put in place a legal basis and reform institutions to smooth the implementation of a CDM market in Vietnam. The results of the study should help ensure that Vietnam will be ready to take advantage of CDM opportunities as early as possible in the emerging climate change processes.

VIETNAM (P079840) Vietnam Environment Monitor 2003 - Water Resources

Fiscal Year: 2003 Region/Ctry: EAP/ Vietnam Type: ESW TTL: Tran Phuong Thi Thanh

Environmental. Themes: Other ENRM: (Primary 100%)

Other Themes: None
**Sectors:** Other Social Service: 100%

**Objective:**
To present the past and ongoing water resources development and management efforts in order to 1) underscore the importance of water and environmental resources to Vietnam’s social and economic development, 2) highlight the emerging environmental management challenges and threats as well as their social and political implications, and 3) summarize a set of indicators that cold be used to monitor changes in the water environment.

**Content:**
An overview of water resources in Vietnam is provided with focuses on surface water, groundwater, and coastal resources. Water pollution is increasing due to urbanization and industrial development as well as road and dam construction and port and marine development, affecting its rich ecosystems such as wetlands, mangroves, coral reefs, and sea grass beds. Heavily populated areas are vulnerable to natural disasters such as typhoons and floods. In additions to the cost of disasters, waterborne diseases, cleanup of oil spills, and treatment of water resources incur significant costs to the economy. The water sector has no overall integrated strategy and action plan at the national or regional basin level, however, strategies and action plans exist for sub-sectors. Only partial progress has made in integrating water resources management. To address the challenges in water resources management, it is recommended to proactively engage regional riparian cooperation, to improve information management, to complete the initiated separation of the water management and service functions, to further decentralize management authorities, and to strengthen the institutional capacity.

**ECA Region**


**Fiscal Year:** 2002  
**Region/Ctry:** ECA/ Belarus  
**Type:** ESW  
**TTL:** Markandya Anil

**Environmental Themes:** Env Policy and Institutions (Primary 33.3%); Land mgmt (Primary 33.3%); Pollution Management and Env Health (Primary 33.3%)

**Other Themes:** None

**Sectors:** Water/ San.: 30%; Agriculture: 45%; Law/ Public Admin.: 25%

**Objective:**
To provide an update on the 1993 Environmental Review and engage the government and local stakeholders in a dialogue on the links between the more technical aspects of environmental management and the underlying national policy framework.

**Content:**
Given the government priorities, CAS, and the existing studies and information, the report focuses on four key areas: water, energy, solid waste, and natural resources management. The key recommendations include promotion of efficient use of resources particularly in the energy sector, for municipal services and in terms of expenditure management; an increase in energy prices, improvement in water quality and supply in rural areas and small towns; improvement in solid waste management through financial, institutional, and technical restructuring. The report also raises the issues of local community participation.

**BULGARIA (P078547) Environmental Sequencing Strategies for EU Accession – Priority Public Investments for Wastewater Treatment and Landfill of Waste**
To provide a review and elaborate on the Government’s strategies for public expenditure required for compliance with the Urban Wastewater and Landfill of Waster Directives until 2015. To help the Government to intensify internal dialogue on the planning of public finances for compliance.

Content:
The report reviews the cost implications of adopting the EU Council Directive 91/271/EEC on urban wastewater treatment and the EU Council Directive 1999/31/EC on the landfill of waste and meeting the targets and requirements from the point of view of public finances. The study focuses on the financial planning and only briefly looks into the contribution of private sector. Although the focus remains on priority public investments for compliance, other issues, such as institutional responsibilities, resource planning and affordability are also touched upon as they impinge on and management aspects of the compliance process. The report is organized in three parts. The main report starts with an overview of the strategic setting for Bulgaria’s compliance with EU environmental Directives compliance potential. Part two lays out the requirements of the Directive on urban wastewater treatment, implementation plans, financing plan and strategic recommendations. Part Two also provides separately an analysis and details of the implementation plans, estimates of the compliance cost and technical requirements for implementation of the Directive for land filling of waste. Additional information and details on waste water treatment plans, sewerage system, sensitivity status of larger settlements within main river basins, guidance on landfill construction, area waste management plans, and landfill permits are included in the annexes to this report in a separate volume.
and management into Bank investment operations, including land reform and agricultural services, irrigation and drainage, water and wastewater, as well as river basin, forestry and watershed management. The strategy further discusses the development of sustainable financing mechanisms which, recognizing the public good aspect of biodiversity conservation, include public funding but also need to promote gradual development of other sources of finance. Hence the strategy aims to make better use of biological assets that contribute to poverty reduction and economic growth; help conserve globally significant ecosystems; and coordinate biodiversity conservation strategies in ECA countries.

**ECA REGION (P079386) Meeting the Environment Millennium Development Goal in Europe and Central Asia**

**Fiscal Year:** 2003  
**Region/Ctry:** ECA  
**Type:** ESW  
**TTL:** Markandya Anil

**Environmental Themes:** Env. Policies and Institutions (Primary 33.3%); Pollution Mgmt (Primary 33.3%)

**Other Themes:** Urban (Primary 33.3%)

**Sectors:** Gen. Water/San: 35%; Energy: 35%; Gen. Agriculture: 20%; Health: 10%

**Objective:**
To review the status of the 28 countries of Europe and Central Asia (ECA) with respect to the environmental Millennium Development Goal (MDG).

**Content:**
The report finds that the status of progress toward MDG 7 in ECA appears positive, however, the official data do not necessarily show the existing gaps. While the official statistics show over 90% of the population having access to safe water and sanitation, they do not indicate that water quality often does not meet the standards and that the sewage systems are in the state of despair. Albania, Romania, and CIS are identified to have the most serious problems. The ECA region also remains the least energy efficient in the world in terms of GDP per unit of energy used and policy and institutions are weak in respect to NRM.

Considering the linkages between MDG 7 and the health and poverty goals as well as the cost of meeting the MDG targets, the report identifies priority areas that include addressing the problem of slums, increasing access to sanitation, providing clean energy, and improving forest management and land conservation programs. In particular, the World Bank can support in water and sanitation, integration of sustainable development into country policies and programs, improvement of slum dweller conditions, and improvement of data quality on key indicators.

**ECA REGION (P074572) Water Resources in Central and Eastern Europe (2 volumes)**

**Fiscal Year:** 2003  
**Region/Ctry:** ECA  
**Type:** ESW  
**TTL:** Rita E. Cestti

**Environmental Themes:** Env. Policies and Institutions (Primary 29%); Pollution Mgmt (Primary 29%); Biodiversity (Secondary 14%); Climate change (Secondary 14%); Water Resources Management (Secondary 14%)

**Other Themes:** None

**Sectors:** Law/ Public Admin.: 30%; Water/ San.: 20%; Agriculture: 20%; Energy: 15%; Industry: 15%

**Objective:**
To summarize key water management issues and challenges at both the country and sub-regional levels and to review the World Bank’s ECA water portfolio to date in order to outline strategic directions for World Bank engagement in water resource management by major themes and by sub-regions.
Content:
The report addresses policies and investments that affect water resources management broadly, at river basin or tributary level (e.g. infrastructure for multipurpose storage, flood management, water quality and source protection, and water allocation). The north and west parts of the region are water abundant and improving water quality is the main challenge. The south and east parts are water scarce with significant water demand for irrigation and water quantity management, including allocation, is the main issue. ECA has the smallest water sector portfolio with the lowest per capita lending among regions. Except for a few ECA countries, CASs do not address water management broadly and analytical work to link poverty and poor water resources management has been limited. Sub-regionally specific focus areas are identified. In addition, partnerships, cross-sectoral works, and the combination of thorough analysis and clearly defined investment are identified as the key to successful implementation.

ECA REGION Water Resources Management in South Eastern Europe (2 volumes)

<table>
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<tr>
<th>Fiscal Year</th>
<th>Type</th>
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<tr>
<td>2003 South Eastern Europe (SEE)</td>
<td>ESW</td>
<td>Rita E. Cestti</td>
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</table>

Environmental Themes: Env. Policies and Institutions (Primary 29%); Pollution Mgmt (Primary 29%); Biodiversity (Secondary 14%); Climate change (Secondary 14%); WRM (Secondary 14%)

Other Themes: None

Sectors: Law/ Public Admin.: 30%; Water/ San.: 20%; Agriculture: 20%; Energy: 15%; Industry: 15%

Objective:
This report aims to summarize key issues and strategic directions for improved water resources management at the national and transboundary levels for the South Eastern Europe (SEE) region.

Content:
The SEE region has adequate, though unevenly distributed water resources. Challenges include flood and drought management, inter-sectoral allocation and water quality, particularly in regard to balancing the cost of municipal and industrial wastewater treatment with the benefit of improved water quality for recreation. Most SEE countries have made progress toward establishing sound legal and institutional frameworks for water resources management; however, arrangements vary among and within countries. The region continues to face complex transboundary issues such as navigation and quality of shared waters due to socio-economic, geographical, and institutional differences. The Bank’s assistance to overall water resources management in SEE countries is limited; however, the assistance for delivery of water services has been considerable. The report provides recommendations for the short and medium term as well as for national and transboundary levels, including sharing information and cooperation in carrying out the mandates by sectoral agencies, developing policies and building institutions for integrated water resources management throughout the region, extending the planning at the sub-basin level, implementing the agreed action plans and projects with prudent financial mechanisms, increasing partnerships and cooperation among SEE countries as well as with and among international donors.
Other Themes: Admin. and Civil Service Reform (Secondary 25%); Decentralization (Secondary 25%)
Sectors: General Public Administration (70%); Sub-National Government Administration (30%)

Objective:
The objectives of this study is to provide the World Bank with an assessment the on-the-ground implementa-
tion capacity and effectiveness of Russia’s EA (Environment Assessment) system following the
abolishment the former Russian State Committee for Environmental Protection (SCEP). The study further
aims at developing and testing framework for undertaking such assessment in order to improve our
knowledge in this area and for a possible replication in other countries.

Content:
The study develops an original framework for EA capacity assessment and pilot tests it at federal level and
in three selected regions of Russia. This framework identifies the following five major aspects of an EA
system on which the study then analyses the Russian EA system: 1) Context - the constitutional, institu-
tional, and economic context within which the EA system has evolved; 2) Legal and Regulatory Frame-
work within which EA operates; 3) Implementation – actual implementation of the EA system, and the
extent to which the processes actually follow the country’s EA laws and regulations; 4) Impact – the value
added of the EA system: its effects on decision making and project implementation (‘benefits’) and its
burden on the regulated community (‘costs’); and 5) Institutional Capacity of the responsible entities to
maintain or improve the EA system, including their budget, quality of staff and facilities.

RUSSIAN FEDERATION (P085469) Reform of the Russian Gas Sector

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<tr>
<th>Fiscal Year</th>
<th>Region/Ctry</th>
<th>Type</th>
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<tr>
<td>2004</td>
<td>Russian Federation</td>
<td>ESW</td>
<td>Peter D. Thomson</td>
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</tbody>
</table>

Environmental Themes: Other ENRM (Primary 66.6%)

Other Themes: Other Public Sector Governance (Secondary 33.4%)

Sectors: Oil & Gas: 100%

Objective:
To propose the necessary restructuring required in the Russian gas sector.

Content:
This note first identifies structural issues and key challenges in the Russian gas sector using a SWOT
analysis. The next section offers eleven recommendations to reform the Russian natural gas sector. The
summarized conclusions and recommendations in the note are as follows: (1) incentives must be provided
to all to encourage them to develop natural gas resources; (2) natural gas prices in the domestic market
are not, at present, sufficient to cover the real economic value of the gas; (3) while it is in Russia’s best
economic interest to maximize the overall revenues associated with gas exports, it is not in the country’s
best interest to see domestic prices rise significantly above Long-run marginal cost (LRMC) levels; (4) a
discrete transportation tariff should be established to apply, on a nondiscriminatory basis, to all shippers;
(5) to assure nondiscriminatory access to transportation facilities, a “reservation of capacity” methodol-
ogy should be introduced to allocate gas pipeline capacity within Russia; and (6) independent producers
should be accorded the opportunity to compete immediately for all domestic gas markets, and to access
future export market opportunities. No attempt should be made, however, to abrogate Gazprom’s
existing export contracts.
### SERBIA & MONT (P074870) Serbia and Montenegro: A Country Environmental Analysis

**Fiscal Year:** 2002  
**Region/Ctry:** Serbia & Montenegro  
**Type:** TA  
**TTL:** Arcadie Capcelea

**Environmental Themes:** Env Policies and Institutions (Primary 25%); Poll Mgt and Env Health (Primary 25%); Other ENRM (Primary 25%);

**Other Themes:** Other Pub Sector Governance (Primary 25%)

**Sectors:** Central Government Administration (100%)

**Objective:**
The objectives of this report are to: (i) review the existing situation in the environment sector, identify priority areas for policy changes or investments, and consider the role of the government, the private sector, and donors in implementing this agenda; (ii) assess macroeconomy-environment linkages and measures that affect long-term sustainability and financial viability within the priority areas; and (iii) provide a basis for defining the Bank’s future involvement in the environment sector.

**Content:**
This CEA is a short and focused document that puts in concise terms the key environmental challenges of the country and the cross-sectoral policies underlying these issues. The document begins with a brief description of the main trends in the quality of the environment and natural resources, the MDGs, and poverty-environment linkages. The study then analyzes linkages between macroeconomic policies and the environment (for example, the impacts of the pricing of energy and water or the privatization policy). The CEA summarizes a rapid analysis of environmental expenditures and financing, and provides an overview of the institutional framework for environmental management. Then, the report looks at environmental issues of various sectors, such as energy and air pollution, water supply and sanitation, waste management, coastal zone management in Montenegro, forestry and biodiversity. The report concludes with a list of priority actions and the role of donors and the World Bank.

### SERBIA & MONT (P083980) Serbia and Montenegro: Flood Management in the Tara and Lim Basins (draft)

**Fiscal Year:** 2004  
**Region/Ctry:** Serbia & Montenegro  
**Type:** ESW TTL: Tijen Arin

**Environmental Themes:** Pollution Management and Environmental Health (Primary 50%); Other ENRM (Primary 50%)

**Other Themes:** None

**Sectors:** Forestry: 50%; Other Industry: 50%

**Objective:**
To investigate the causes of flooding problems of the Tara and Lim river basins and to deliver an assessment report of the current situation, with particular focus on a series of relevant matters, such as an analysis of historical floods, past and current flood protection measures, possible link between hydrological rainfall-runoff behavior and forest management, and an analysis concerning the socio-economical situation in the river basins.

**Content:**
The study indicates localized flood threats to human settlements, infrastructure (roads and bridges) and the structural safety of mine tailing dams notably in Mojkovac. The study also points out problems with forest management and uncontrolled cutting in easily accessible forest areas as factors that have led to increased erosion which in turn cause river braiding and meandering which in turn induce river bank erosion. Data limitations prevented conclusions regarding the impact of climate change.
SLOVENIA (P058631)  
(1) Biological and Landscape Diversity in Slovenia, (2) Biodiversity Conservation Strategy of Slovenia

Fiscal Year: 2002  
Region/Ctry: ECA/ Slovenia  
Type: TA  
TTL: Michael G. Nelson

Environmental Themes: Other ENRM: (Primary 100%)

Other Themes: None

Sectors: Central Government Administration : 100%

Objective:
To prepare a Biodiversity Strategy and Action Plan (BSAP) with the purpose of prioritizing issues for the conservation and sustainable use of the country’s biodiversity and identifying actions to address them, in accordance with Slovenia’s obligation under the Convention of Biological Diversity (CBD).

Content:
There are two reports: (1) the Biological and Landscape Diversity in Slovenia and (2) the Biological and Landscape Diversity Strategy in Slovenia. Experts assessed and analyzed the country’s current biodiversity conditions in the Biological and Landscape Diversity in Slovenia. It includes habitat diversity, species diversity, genetic diversity, and landscape diversity as well as implications of economic development and legal and institutional framework. It notes that about 10% of ferns and higher plants and 56% of vertebrates are endangered. This review of Slovenia’s biological and landscape diversity served as a basis for the Biological and Landscape Diversity Strategy in Slovenia. The strategy spelled out the directions, policies and economic mechanisms, and planning in Slovenia’s development and sustainable use of natural resources. It discusses the strategic objectives and directions from different angles: biodiversity areas (e.g., ecosystems, species), sectoral activities, and policies and programs.

TURKEY (P083619)  
Gas Sector Strategy Note

Fiscal Year: 2004  
Region/Ctry: ECA/ Turkey  
Type: ESW  
TTL: Ranjit Lamech

Environmental Themes:  
Env Policy and Institutions (Primary 25%); Climate Change (Secondary 12.5%)

Other Themes: Infrastructure Services for Private Sector Development (Primary 25%); Regulation and Competition Policy (Primary 25%); Debt Management and Fiscal Sustainability (Secondary 12.5%)

Sectors: Oil and Gas: 80%; Gen. Energy: 20%

Objective:
To assist policymakers by proposing a pragmatic and flexible program of change that will enable Turkey to develop a modernized gas market structure (“Structure 2010”).

Content:
This report summarized a strategy for accelerating the liberalization of the natural gas market in Turkey in line with the objectives of the Natural Gas market Law of 2001 (Law 4646). It focuses on the desired future framework for the natural gas market and indicated the changes that need to be made in the “buy” function, “sell” function, and transit function as well as the steps that need to be taken to transition from the current framework to the desired framework. Given the government priorities, CAS, and the existing studies and information, the report focuses on four key areas: water, energy, solid waste, and natural resources management. The key recommendations include promotion of efficient use of resources particularly in the energy sector, for municipal services and in terms of expenditure management; an increase in energy prices, improvement in water quality and supply in rural areas and small towns; improvement in solid waste management through financial, institutional, and technical restructuring.
### TURKMENISTAN (P059538) National Environmental Action Plan of Saparmurat Turkmenbashi

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<th>Fiscal Year:</th>
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<td>Region/Ctry:</td>
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<td>Type:</td>
<td>TA</td>
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<tr>
<td>TTL:</td>
<td>Saraswat Nirmala</td>
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**Environmental Themes:** Environments and Institutions (Primary 100%)

**Other Themes:** None

**Sectors:** Law/ Public Admin.: 100%

**Objective:**

The overall objective of the NEAP was to develop a comprehensive national environmental policy in a participatory manner. The process was intended to help the Government identify key environmental challenges in meeting its social and economic development goals.

**Content:**

The main issues discussed are: shortage of irrigation and drinking water, land degradation caused by secondary salinization and waterlogging, air pollution and greenhouse gas emissions, integration of environmental mitigation measures into the oil and gas energy sector, protection of the Caspian Sea, conservation of biodiversity and cultural heritage sites, and strengthening environmental management capacity.

Seven priority areas of environmental problems are identified: (1) water scarcity and pollution, (2) land degradation from salinization, waterlogging, and soil drifting, (3) degradation in the Turkmen Aral Sea Zone, (4) air pollution, (5) pollution from oil and gas complex and energy industry, (6) reduction of biodiversity, and (7) destruction of cultural heritage sites. Recommended actions to address the problems above include: strengthening institutional and legal framework; modernization of water infrastructure (e.g. collector-drainage networks and water supply systems) and power stations; establishment of water protection zones, park and forest zones, and monitoring; control over salinization and soil erosion by water and wind; installation of pollution control equipment at enterprises. The NEPA provides a detailed list of measures and actions for specific problems.

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### UKRAINE (P070237) The National Strategy of Ukraine for Joint Implementation and International Emissions Trading

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<tr>
<th>Fiscal Year:</th>
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<tr>
<td>Region/Ctry:</td>
<td>ECA/ Ukraine</td>
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<tr>
<td>Type:</td>
<td>ESW</td>
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<tr>
<td>TTL:</td>
<td>Helmut Schreiber</td>
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**Environmental. Themes:** Climate Change (Primary; 33.3%); Pollution Management and Environmental Health (Primary; 33.3%); Biodiversity (Secondary; 16.7%); Water Resources Management (Secondary; 16.7%)

**Other Themes:** None

**Sectors:** District Heating and Energy Efficiency Services (100%)

**Objective:**

The main objective of the ESW is to examine how selling emission credits could boost Ukraine’s financial resources. Ukraine could greatly gain from the Kyoto Protocol and this study assesses if the country has the necessary legislative and institutional infrastructure to deal with emission credits through Joint Implementation (JI) with other countries and/or through the International Emissions Trading (IET) framework.

**Content:**

This study reviews recent climate policy developments in Ukraine and OECD countries and includes an analysis of Ukraine’s GHG mitigation potential and costs, explores market opportunities in GHG emission reduction, points out capacity building needs to participate in the Kyoto protocol, presents some project suggestions, and defines a plan of action until 2008. The analysis includes an overview of investment
climate, barriers, and risk. The study shows that under any plausible scenario Ukraine will have excess GHG permits until 2020 and could potentially sell them on the international market. It is concluded that Ukraine does not have adequate institutional infrastructure to deal with emissions credits. Also, the country does not have the appropriate legislative basis in place to regulate procedure concerning IET and JI.

**Ukraine (P070945)**

**Region/Ctry:** ECA/ Ukraine  
**Type:** ESW  
**TTL:** Damianova Adriana

**Environmental Themes:** Env Policies and Institutions (Primary 29%); Pollution mgmt: (Primary 29%); Water Resources Management: (Secondary 14%); Biodiversity: (Secondary 14%); Climate change: (Secondary 14%);

**Other Themes:** None

**Sectors:** Law/ Public Admin.: 30%; Water/ San.: 20%; Agriculture: 20%; Energy: 15%; Industry: 15%

**Objective:**
The objective of the study is to examine the extent to which the present system meets national environmental objectives and identify ways in which it can be made more efficient. It also aims to identify key environmental policy issues which are critical to the Government's action plan to meet national environmental priorities.

**Content:**
The detailed analysis of the system of public environmental expenditure from 1996 to 2000 revealed that environmental expenditures have fallen while the contribution from the budgetary source slightly increased. Most of the expenditure was financed by non-budgetary sources, principally the private sector. Although this source has dropped significantly during this period, it still remains the major source of funds. In addition, Ukrainian budget classification does not always follow the international norms. Another findings are that the share of investment in total expenditure was lower compared to other CEE countries and that the public investments on environment were also low.

The report's key recommendations call for: 1) Strengthening the links between expenditures and priorities; 2) Enhancing the effectiveness of environmental expenditures through increased transparency, accountability, and the use of international standards; 3) Maintaining the current level of public environmental spending and reducing discretion in allocating funds; 4) Refining the institutional and legal structure for environmental funds; and 5) Improving pollution charges by adjusting charges for inflation, eliminating exemptions, streamlining the tax structure, and strengthening oversight to reduce corruption.
Objective:
To analyze and demonstrate the importance and implications of sound environmental management for the future of the Organization of East Caribbean States (OECS) tourism industry (a key sector in the sub-regional economy).

Content:
The study begins with a discussion of the tourism sector, including an analysis of current capacity to support demand, the importance of tourism to the economy, and the future for the industry. The next section discusses the environmental context for the tourism sector and looks in detail at the key environmental problems that affect tourism, the underlying root causes (from both the tourism industry and other sectors), and the incentives for addressing the conflicts between tourism and maintaining a healthy environment. While beyond the scope of the present paper, a brief section identifying priority socio-economic issues associated with poorly planned and managed tourism has also been included. Having concluded that environmental problems that originate in non-tourist sectors are mostly beyond the sector’s capacity to address them, the study turns to examine the role of national government environmental units and sub-regional and regional institutions in protecting valuable environmental assets. This penultimate section first examines the ability for national institutions to protect and manage the environment in the tourism context by using the sensing, balancing and executing paradigm described above. The second half of the section briefly describes the possible roles and responsibilities of selected regional and sub-regional institutions to assist national agencies to address environmental issues of import to the tourism sector. The last section provides conclusions, recommendations and possible roles for the World Bank to support member states in protecting tourism assets.

BRAZIL (P082327) The Logic of Deforestation of the Brazilian Amazon (P082327)

Fiscal Year: 2003 Region/Ctry: LAC/ Brazil Type: ESW TTL: Sergio Margulis

Environmental Themes: Env. Policies and Institutions (Primary 29%); Pollution Management and Env Health (Primary 29%); Biodiversity (Secondary 14%); Climate change (Secondary 14%); WRM (Secondary 14%)

Other Themes: None


Objective:
To understand the dynamics and logic of deforestation in Brazilian Amazonia.

Content:
This study seeks to make a contribution in terms of a social evaluation of deforestation in Brazilian Amazonia by, on the one hand, identifying the main agents involved in the process, the economic motives behind their activities and their possible economic returns – a private evaluation of the process – and, on the other hand, by undertaking a monetary evaluation of the economic (social) costs of deforestation while making comparisons with sustainable forest management – a social analysis. The study confirms that cattle ranching is the main economic activity of the region and that large- and medium-size operators are the major agents responsible for deforestation. Although a full cost-benefit analysis has not been possible due to the lack of more substantive information, a number of different scenarios are presented and compared. Key policy recommendations include changing the focus of policies towards cattle ranchers as the key driving force of deforestation, recognizing their interests and private economic gains; and formulating policies aimed at halting further expansion of the frontier in those areas that are still unaffected and encouraging intensification of agriculture and cattle ranching in areas undergoing consolidation.
### BRAZIL (P074848) Brazil: Managing Water Quality

**Fiscal Year:** 2003  
**Region/Ctry:** LAC/ Brazil  
**Type:** TA  
**TTL:** Sergio Margulis

**Environmental Themes:** Env Policies and Institutions (Primary 29%); Pollution Management and Env Health (Primary 29%); Water Resources Management (Primary 29%);

**Other Themes:** Access to urban ser for the poor (Primary 29%); Other Human Dev. (Secondary 11%)

**Sectors:** Sanitation (25%), Water Supply(25%); Sub-National government administration(20%); Central Government Administration (20%); Other social service (10%)

**Objective:**
To review from a cross-sectoral perspective how environmental issues have been addressed in Bank sector operations and more broadly within the Federal Government.

**Content:**
The report looks at the management of water quality, as it affects both the users of raw water, and those who are primarily concerned with the disposal of wastewater. Water resources management in Brazil has relied upon heavy investments in medium- and large-scale projects that has provided basic infrastructure for water uses. However, these have produced questionable impacts in terms of reducing poverty and inequality. One of the reasons for this has been the poor infrastructure management, which has been largely underestimated. While improvements in the utilization of existing infrastructure in the water sector remain critical, they need to be complemented by incentives to both service providers and water users. Moreover, low economic, environmental, and social returns from investments in the water sector reflect the tendency to distract attention from the objectives in the design and implementation of projects. Thus, an assessment of water quality goals is required, which should be based on systematic evaluations of the costs and benefits of reaching alternative standards and explicit social objectives.

### CHILE (P078198) Rural Infrastructure in Chile: Enhancing Efficiency and Sustainability

**Fiscal Year:** 2004  
**Region/Ctry:** LAC/Chile  
**Type:** ESW  
**TTL:** Jennifer J. Sara

**Environmental. Themes:** Water Resource Management (Primary 40%); Climate Change (Secondary 20%)

**Other Themes:** Infrastructure Services for Private Sector Development (Primary 40%)

**Sectors:** Gen. Agriculture: 100%

**Objective:**
To document and learn from Chile’s successes in rural infrastructure expansion, as well as to assist in identifying recommendations to further improve access, efficiency, and sustainability of service delivery.

**Content:**
This report examines the current institutional and financial arrangements for infrastructure service provision in rural areas of Chile, focusing upon the water, sanitation, electricity, communications and transportation sectors, and proposes mechanisms for improvement. The recommendations emerging from this cross-sectoral analysis are designed to address two broad sets of needs: (i) to improve efficiency, sustainability, and impact of infrastructure services for the rural population that already has received access, and (ii) to develop more appropriate strategies for extending service coverage to those still unserved segments of the rural population.

### COLOMBIA (P074695) Agroecology –Regulatory framework for the implementation of an incentive system for agroecology (Spanish)
**Fiscal Year:** 2003  
**Region/ Ctry:** LAC/Colombia  
**Type:** TA  
**TTL:** Juan Pablo Ruiz

**Environmental Themes:**  
Env. Policies and Institutions (Primary 50%); Land Mgmt (Primary 25%); Water Resources Management (Secondary 25%)

**Other Themes:**

**Sectors:** Gen. Agriculture: 100%.

**Objective:**
To review the potential for agroecological activities and propose an incentive framework to support its development in the country.

**Content:**
The report (i) evaluates international practices on agroecology, with special emphasis on success and failure conditions of the policy instruments and incentive frameworks; (ii) makes a comparative analysis of Government policies to support agriculture and WTO commitments; (iii) analyzes international markets for agroecological products to determine potential niches; and (iv) evaluates the production chain. Finally, the report proposes a series of instruments that would conform with the regulatory framework to implement an incentive system for agroecology.

**DOMINICAN REPUBLIC (P079478)**

**Environmental Priorities and Strategic Options – Country Environmental Analysis**

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Region/ Ctry</th>
<th>Type</th>
<th>TTL</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>LAC/Dominican Republic</td>
<td>ESW</td>
<td>Pierre Werbrouck</td>
</tr>
</tbody>
</table>

**Environmental Themes:**  
Env. Policies and Institutions (Primary 28%); Pollution Management and Env. Health (Primary 28%); Biodiversity (Secondary 14%); Climate Change (Secondary 14%); Water Resources Management (Secondary 14%)

**Other Themes:** None


**Objective:**
To identify environmental priorities; to develop recommendations for institutional and policy reforms; and to outline the role of the Bank in supporting Secretariat for Environment and Natural Resources in reforming efforts.

**Content:**
This report discusses the affects of rapid economic growth and increased urbanization on the environmental quality of the Dominican Republic’s natural resource base (e.g., water resources management—water quality, quantity and watershed management and solid waste collection and disposal have become major environmental concerns). It notes that the lack of systematic data limits an accurate and detailed assessment of the scope of the problems, however, the consensus is that: (i) the overall poor quality of surface, groundwater and coastal water resources is the result of a lack of waste water management and agricultural run-off, causing health problems that disproportionately affect the poor; (ii) water scarcity is a regional problem resulting from poor demand management in irrigation, urban water supply and tourist infrastructure in drier regions; (iii) weak watershed management leads to soil erosion and amplifies the damage and frequency of flooding; and (iv) the overall lack of solid waste management pollutes water sources, causes disease and is a nuisance for both inhabitants and visitors. This report provides some indicative priority setting the Government could adopt or adjust in function of political and economic factors.
Middle East and North Africa Region

EGYPT (P075537) Arab Republic of Egypt: Cost Assessment of Environmental Degradation/ Sector Note

**Fiscal Year:** 2002  **Region/Ctry:** MNA/ Egypt  **Type:** ESW  **TTL:** Sherif Kamel F. Arif

**Environmental Themes:** Env. Policies and Institutions (Primary 29%); Pollution Management and Env Health (Primary 29%); Biodiversity (Secondary 14%); Climate change (Secondary 14%); WRM (Secondary 14%)

**Other Themes:** None

**Sectors:** Law/ Public Admin.: 30%; Water/ San.: 20%; Agriculture: 20%; Energy: 15%; Industry: 15%

**Objective:**
Developing an analytical framework that can be applied periodically, to provide a first order estimate of the cost of environmental degradation in Egypt as a basis for a training program for ministries, agencies, institutes, and other interested parties to incorporate cost assessments of environmental degradation into policy making and environmental management.

**Content:**
The report is a first step toward the use of environmental damage cost assessments for priority setting and as an instrument for integrating environment into economic and social development by providing estimates of damage and remediation cost for several areas of the environment. The damage cost of environmental degradation in Egypt in 1999 is estimated at 3.2-6.4 percent of GDP with a mean estimate of 4.8 percent of GDP. Of the total damage cost, about two thirds comes from damages to health mainly due to the lack of safe water and sanitation and air pollution and a third from natural resource degradation, in particular soil degradation. Egypt would benefit significantly from remedial actions to protect and restore environmental quality. Analysis of benefits and costs of selected environmental issues would also facilitate the process of priority setting and improved environmental management as well as promote inter-sectoral support for action.

EGYPT (P086954) Arab Republic of Egypt: Country Environmental Analysis (draft)

**Fiscal Year:** 2004  **Region/Ctry:** MNA/ Egypt  **Type:** ESW  **TTL:** Sherif Kamel F. Arif

**Environmental Themes:** Env. Policies and Institutions (Primary 40%); Pollution Management and Env Health (Secondary 20%); Land Administration and Management (Secondary 20%); Water Resource Management (Secondary 20%)

**Other Themes:** None

**Sectors:** Solid Waste Management: 25%; Irrigation and Drainage: 25%; Gen. Energy Sector: 25%; Sanitation: 25%

**Objective:**
To facilitate mainstreaming of environment issues into relevant sector activities for improving development and poverty alleviation and to improve the capacity strengthening process of environmental mainstreaming.

**Content:**
The report consists of the following sections: Chapter 2 addresses the environmental issues and the environmental sustainability in Egypt; Chapter 3-6 provides an overview of the policies, institutions achievements and challenges of the four major environmental issues: air quality, water quality, solid waste management and coastal zone management; Chapter 7 focuses on the achievements since the National Environmental Action Plan (NEAP) of 1992, and assesses the policies and institutions of the environment;
Chapter 8 analyses the environmental expenditures during the period 1992-2002; and Chapter 9 provides recommendations on priorities for action by the Government and the World Bank.

**IRAN (P083800) Energy - Environment Review Policy Note**

<table>
<thead>
<tr>
<th>Fiscal Year: 2004</th>
<th>Region/Ctry: MNA/Iran</th>
<th>Type: ESW</th>
<th>TTL: Sherif Kamel F. Arif</th>
</tr>
</thead>
</table>

**Environmental Themes:** Pollution Management and Environmental Health (Primary 33.3%); Other ENRM (Primary 33.3%)

**Other Themes:** Economic Statistics, Modeling, and Forecasting (Primary 33.3%)

**Sectors:** Oil and Gas: 55%; Power: 30%; Central Government Administration: 10%; Renewable Energy: 5%

**Objective:**
The strategic objective is to use environmental damage cost assessments for priority setting and as an instrument for integrating environmental issues into economic and social development. This Policy Note reports the process and achievements of the EER (Energy-Environment Review) in Iran with special reference to the use of cost-benefit analysis as a tool for diagnosis, communication and the framing of solutions. It identifies the value of the methodology as a means of communicating with the Government about the level of environmental damage, in establishing priorities for environmental policy and in the detailed design of such policies.

**Content:**
The main focus is on air pollution because this is the most important generic impact of energy use. Marine pollution is also covered in the Note. Chapter 2 addresses some of the salient features of recent economic development and the immediate priorities. Chapter 3 analyses the main environmental aspects of sustainable development, the major environmental issues, and the evidence for the political commitment of the Government of Iran. Chapter 4 reviews the pertinent characteristics of the energy sector, summarizes the supply and demand structure and the level and allocation of subsidies and identifies present trends. Chapter 5 comprises an account of the approach and methodology used in the EER to determine the damage cost of air pollution to the economy. Chapter 6 assesses the likely impact of specific policies and recommendations, provides a proposal for an Action Plan, and draws some implications for programs for the World Bank.

**IRAN (P080208) Management of Healthcare Waste Policy Note (final draft)**

<table>
<thead>
<tr>
<th>Fiscal Year: 2004</th>
<th>Region/Ctry: MNA/Iran</th>
<th>Type: ESW</th>
<th>TTL: Allan Rotman</th>
</tr>
</thead>
</table>

**Environmental Themes:** Environmental Policies and Institutions (Primary 50%)

**Other Themes:** Other Communicable Diseases (Secondary 25%); Child Health (Secondary 25%)

**Sectors:** Health: 60%; Solid Waster Management: 40%

**Objective:**
To present a diagnosis of the main issues and barriers towards improvements in a well structured healthcare waste management system and a set of recommendations.

**Content:**
The note provides an overview of the current system and presents an action plan for the strengthening of the current system, which can be implemented within the context of the new Waste Management Law. This report focuses on accomplishments and future challenges for sector actions to increase efficiency of the institutional framework, at both the national and the municipal levels.
**LEBANON (P070882) Lebanon: Implementation of the Hazardous Waste Program: Initial Phase**

<table>
<thead>
<tr>
<th>Fiscal Year: 2002</th>
<th>Region/Ctry: MNA/ Lebanon</th>
<th>Type: TA</th>
<th>TTL: Maria Sarraf</th>
</tr>
</thead>
</table>

**Environmental Themes:** Other ENRM: 100%

**Other Themes:** None

**Sectors:** Solid Waste Mgmt: 100%

**Objective:**
To address the deficiency in hazardous waste management presently existing in the country through capacity building.

**Content:**
The hazardous waste (HW) generating characteristics are identified: most activities are small- to mid-size operations; most sites are small, cramped, and served by no collection infrastructures; no industrial waste and wastewater treatment facilities exist. This project achieved the drafting of regulatory framework and guidelines for HW and regulatory framework for hospital waste management; a proposal of a national HW Management Program; 4 workshops to present the HW management program; and the publishing public awareness articles in the newspapers.

**LEBANON (P080265) Lebanon: Hydrocarbon Strategy Study**

<table>
<thead>
<tr>
<th>Fiscal Year: 2004</th>
<th>Region/Ctry: MNA/ Lebanon</th>
<th>Type: ESW</th>
<th>TTL: Anna Maria Bjerde</th>
</tr>
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</table>

**Environmental Themes:** Pollution Management and Environmental Health (Primary 28%)

**Other Themes:** Debt Management and Fiscal Sustainability (Primary 28%); Other Public Sector Governance (Secondary 14%); Other Economic Management (Secondary 14%); Infrastructure Services for Private Sector Development (Secondary 14%)

**Sectors:** Oil and Gas: 50%; Gen. Energy: 50%

**Objective:**
To assist the Government of Lebanon to formulate a comprehensive long-term strategy for the future development of the hydrocarbon industry and the introduction and utilization of natural gas in Lebanon in particular. The strategy will provide a basis by which the government would seek private sector as well as Bank assistance in the development of the hydrocarbons sector in Lebanon over the medium to long term.

**Content:**
This paper sets out a strategy that takes into account the gas potential demand, supply options, market structure to allow for efficient service delivery, and legal and regulatory framework to enable competition, and provides an overall assessment of the potential financial and environmental benefits of using gas. While the strategy focuses on the development of the natural gas market, it also assesses the impact from increased gas use on the demand for petroleum products, analyzes the current shortcomings in the petroleum market, and investigates whether Lebanon should consider investing in new refinery capacity.

**MOROCCO (P079926) Morocco – Costs of Environmental Degradation (in French)**

<table>
<thead>
<tr>
<th>Fiscal Year: 2003</th>
<th>Type: ESW</th>
<th>Region/Ctry: MNA/Morocco</th>
<th>TTL: Maria Sarraf</th>
</tr>
</thead>
</table>

**Environmental Themes:** Env. Policies and Institutions (Primary 29%); Pollution Management and Env
Health (Primary 29%); Biodiversity (Secondary 14%); Climate change (Secondary 14%); Water Resources Management (Secondary 14%)

Other Themes: None


Objective:
Developing an analytical framework that can be applied periodically, to evaluate the costs of environmental degradation in Morocco as a basis for the development of a training program for various ministries and institutions, which would facilitate the assessment of costs of environmental degradation in environmental and natural resources management.

Content:
The report provides updated cost estimates of environmental degradation in Morocco based on new and more detailed data and better methodologies and models (the first, and thus far only comprehensive estimate of the cost of environmental degradation in Morocco dating back to 1992). The annual damage cost of environmental degradation in Morocco for the year 2000 is estimated at 2.75 – 4.65 percent of GDP, with the cost of water resource degradation and inadequate WSS representing the largest share 1.0 – 1.45 percent of GDP), followed by air pollution -both indoor and outdoor (0.6 – 1.5 percent of GDP). The report highlights the areas of further studies, given that the very important area of groundwater resource degradation and over-extraction as well as others, such as industrial and hazardous waste, ecosystems and biodiversity, and soil degradation are not or only partially captured due to data limitations or complexity of the problem.

WEST BANK/GAZA (P087493) Wastewater Treatment and Reuse Policy Note

Region/Ctry: MNA/ West Bank and Gaza

Fiscal Year: 2004

Type: ESW

TTL: Kanthan Shankar

Environmental Themes: Pollution Management and Env. Health (Primary 66.7%); Environmental Policies and Institutions (Secondary 33.3%)

Other Themes: None

Sectors: Sanitation: 50%; Health: 30%; Irrigation and Drainage: 20%

Objective:
To assess the situation in the West Bank and Gaza with regards to wastewater treatment and reuse, highlight a few basic or guiding principles in relation to the treatment and reuse of reclaimed water and identify key priorities for actions in the short and medium term. The key priorities for action include activities, which could be implemented by the World Bank pending further detailed feasibility studies and consultations.

Content:
This report first presents an analysis of the current situation with regards to: (1) water resources including supply and demand; (2) wastewater availability, current treatment and reuse practices; (3) the regulatory and institutional framework governing wastewater treatment and reused; (4) social and environmental dimensions; and (5) economic and financial aspects. Second, the report summarizes lessons learned and best practices from other countries with regards to wastewater treatment and reuse. It also provides basic guiding principles for the treatment and reuse of wastewater, and finally discusses a set of short and medium term priorities for actions.
**TUNISIA (P076819)**

**Tunisia Country Environmental Analysis (draft)**

<table>
<thead>
<tr>
<th>Fiscal Year: 2003</th>
<th>Type: TA</th>
<th>Region/ Ctry: MNA/Tunisia</th>
<th>TTL: Sherif Arif and Aziz Bouzaher</th>
</tr>
</thead>
</table>

**Environmental Themes:** Env Policies and Institutions (Primary 29%); Pollution Management and Env Health (Primary 29%); Biodiversity (Secondary 14%); Climate change (Secondary 14%); Water Resources Management (Secondary 14%)

**Other Themes:** None

**Sectors:** Gen Public Administration (30%); Gen Agriculture (20%); Gen Water/San (20%); Gen Energy (15%); Gen Industry/Trade (15%).

**Objective:**
The objectives of this CEA are: (i) to facilitate the integration of environmental issues in the development strategies of other sectors that could have a demonstrated impact on the sustainable development of the country, especially those in terms of economic growth, poverty reduction, and quality of life; and (ii) to improve, adapt and strengthen the institutional capacity and the decision making processes towards the objective of environmental mainstreaming.

**Content:**
The CEA summarizes progress on natural resource and pollution management activities over the last decades and then it goes into great detail to review environmental policies and institutions, including environmental public expenditures. Finally, the report proposes a series of key reforms and possible Bank activities to support this process.

For the institutional analysis, the CEA presents a graphic representation of the institutional and policy evolution for each environmental issue (forests, soil conservation, water quality, etc.). The evolution stages go from a simple understanding of the issue, through emergency actions and creation of specialized agencies, all the way to effective behavioral changes. In terms of actors, the CEA analyzes not only the government agencies (including the EA system and public expenditures) but also the private sector and NGOs.

The report concludes that the policy and institutional setting of the country was adequate to the needs of a period of economic adjustment and opening from the 1980s. However, the intensification of natural resource use (especially water, soil and coastal resources) is the most critical challenge faced by the country. The report concludes with a series of recommendations to advance reforms in the policy and institutional structure to face these new environmental challenges.

**South Asia Region**

**INDIA (P073790)**

**India: Strategy for the Phase-out of CFC in the Chiller Sector (P073790) - Strategic Overview and Programmatic Implications**

<table>
<thead>
<tr>
<th>Fiscal Year: 2002</th>
<th>Region/Ctry: SAR/ India</th>
<th>Type: ESW</th>
<th>TTL: Bilal H. Rahill</th>
</tr>
</thead>
</table>

**Environmental Themes:** Env. Policies and Institutions (Primary 29%); Pollution Management and Env Health (Primary 29%); Biodiversity (Secondary 14%); Climate change (Secondary 14%); Water Resources Management (Secondary 14%)

**Other Themes:** None

Objective:
To assist India in formulating programs that support strategic interventions in the sectors where ODC continue to be used and, where necessary, to prepare project proposals for incremental cost funding from the Multilateral Fund for the Implementation of the Montreal Protocol (MLF).

Content:
Part of the 3-volume India Strategy of the Phase-out of CFC in the Chiller Sector, this report summarizes the key elements of data collection, techno-economic analysis, and interpretation from the strategy’s other two volumes. It covers the broader strategic context and project programmatic issues and options that India must consider in establishing a program for CFC phase-out in the chiller sector. The report provides a comprehensive assessment of strategic options as well as a basis for formulation of policy measures, technical assistance programs and investment projects to be implemented through one of the implementing agencies of the MLF. Explanation is offered of the various strategy components (i.e. Manufacturers-Survey, Owner’s Survey, and Technical-Transition Matrix) that are used and required to estimate the incremental cost to India of complying with its Montreal Protocol obligations in the chiller sector and to asses the cost-abatement tradeoffs involved in accelerating the phase-out of CFC-based equipment. The report concludes by considering programmatic issues to support a national CFC phase-out program.

INDIA (P068349) India Household Energy, Indoor Air Pollution, and Health
Fiscal Year: 2002 Region/Ctry: SAR/ India Type: ESW TTL: Kseniya Lvovsky

Environmental Themes: Env. Policies and Institutions (Primary 40%);
Other Themes: Other. Urban Development (Primary 40%); Admin./ Civil Service Reform (Secondary 20%)

Objective:
The objective of this study is to gain a better understanding of the levels and determinants of exposure to indoor air pollution (IAP) in rural households. It further aims at improving knowledge and awareness among stakeholders of the magnitude of the health impacts and offer a range of mitigation measures and at facilitating efficient energy sector strategies and policies at the national, state, and local levels for mitigating IAP and the damages to human health

Content:
The study consist of four components: (1) exposure assessment and modeling of IAP in Andhra Pradesh, (2) an evaluation of a subsidy scheme for liquefied petroleum gas (LPG) in Andhra Pradesh, (3) a review of best-performing biomass stoves in six Indian states, and (4) dissemination and awareness building.

The exposure assessment confirms that the traditional use of biomass fuels exposes all members of the family on a daily basis to levels of air pollution that well exceed available health guidelines for outdoor air quality. The subsidy scheme to promote the use of LPG by the poor launched by the State Government facilitated the uptake of LPG, but biomass still remains as the main cooking fuel. The evaluation has also recognized that three parameters - fuel type, kitchen configuration and/or kitchen ventilation conditions – affect IAP concentration. The review of biomass stoves led to recommendations such as commercialization of stove purchases and sales at the state level, strengthening the information coordination function and capacity building of technicians at the national level, as well as facilitation of collaboration between designers, manufacturers, and consumers.
**INDIA (P075147) India: Urban Air Quality Management**

**Region/Ctry:** SAR/India/ Uttar Pradesh  
**Type:** ESW  
**TTL:** Sameer Akbar  
**Fiscal Year:** 2002

**Environmental Themes:**  
Pollution Management and Env Health (Primary 34%); Env. Policies and Institutions (Primary 34%); Other ENRM (Secondary 16%)

**Other Themes:** Other Urban Dev (Secondary 16%)

**Sectors:**  
Roads and Highways: 25%; Health: 25%; General Energy: 25%; General Public Administration: 25%

**Objective:**
To identify the key sources responsible for the high exposure of the general public to particulate air pollution in India.

**Content:**
The report reviews the information and related analysis on air pollution available in India since 1990. It identifies serious data and analytical gaps that make it difficult to achieve good understanding of the level of exposure of the general public to particulate air pollution as well as the relative contribution of the various sources of such pollution (source apportionment). Looking at available data on ambient concentrations, emissions inventories, dispersion and receptor modeling studies, and existing source apportionment studies, the report concludes that 1) monitoring efforts should shift from TSP to PM monitoring, 2) monitoring needs to be supplemented by adequate investment in identifying pollution sources and assessing public health effects, and 3) the most important data gap that needs to be addressed is the near-complete lack of data on the area source identified under the Asia Urban Quality Management Strategy.

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**INDIA (P075347) India: Uttar Pradesh Environment Monitor**

**Region/Ctry:** SAR/India  
**Type:** ESW  
**TTL:** Smita Misra  
**Fiscal Year:** 2004

**Environmental Themes:**  
Env. Policies and Institutions (Primary 50%); Pollution Management and Env Health (Secondary 25%); Other ENRM (Secondary 25%)

**Other Themes:** None

**Sectors:**  
Gen. Public Industry/Trade sector: 30%; Gen. Water/ San.: 30%; Forestry: 20%; Solid Waste Management: 20%

**Objective:**
To review the state of the environment in Uttar Pradesh (UP); to identify environmental hotspots and prioritize issues; and to create awareness among the stakeholders on environmental concerns.

**Content:**
The Monitor forms part of the World Bank-financed focus state program of support to the Government of Uttar Pradesh. Environmental protection is an integral part of economic reform and growth, and the UP Department of Environment and UP State Pollution Control Board requested the preparation of a State of Environment Report to assess the environmental issues in the state, including an assessment of the most important environmental issues: severity, trends, hotspots, and state-level environmental priorities. The report is organized into 8 chapters. Chapter 1 is introduction and chapter 2 provides an overview of UP. Chapter 3 deals with Brown agenda – issues related to urban ambient air pollution, indoor air pollution, water quality and solid waste. Chapter 4 addresses Green Agenda – issues related to forests and biodiversity and land degradation. Chapter 5 deals with Blue agenda – water availability and water stress related issues. Chapter 6 provides estimated on cost of environmental degradation in UP. Chapter 7
provides information on environmental expenditure in UP. Chapter 8 presents environmental hotspots and indicative priorities for action.

**INDIA (P075115) India: Ten Years of Progress and Challenges in Urban Air Quality Management in India (final draft)**

**Fiscal Year:** 2004  
**Region/Ctry:** SAR/India  
**Type:** ESW  
**TTL:** Sameer Akbar  

**Environmental Themes:**  
Pollution Management and Env Health (Primary 50%); Env. Policies and Institutions (Primary 50%)  

**Other Themes:** None  
**Sectors:** General Transport: 35%; Health: 30%; General Public Administration: 20%; Oil & Gas: 15%  

**Objective:**  
To assess the impacts of ten years of actions and interventions in five metro-cities, so as to assist these and other cities in India in designing better-informed strategies and action plans to combat air pollution.  

**Content:**  
This study attempts to analyze air quality trends and interventions implemented in the ten-year period between 1993 and 2002 in order to better inform future actions. The report presents retrospective analysis of urban air pollution data with a focus on particulate air pollution from 1993 to 2002 in Delhi, Kolkata, Mumbai, Hyderabad, and Chennai, and investigated the main factors affecting air quality in each city as well as significant differences across the cities.

**INDIA (P074363) Issues and Options in Addressing the Objectives of the Stockholm Convention on Persistent Organic Pollutants in India and the South Asia Region**

**Fiscal Year:** 2004  
**Region/Ctry:** SAR/India  
**Type:** ESW  
**TTL:** Bilal H. Rahill  

**Environmental Themes:** Pollution Management and Env Health (Primary 66%); Env. Policies and Institutions (Secondary 34%)  

**Other Themes:** None  
**Sectors:** Agro-industry: 50%; Health: 50%  

**Objective:**  
To identify and analyze the opportunities and constraints associated with the introduction and possible mainstreaming of issues related to Persistent Organic Pollutants (POPs) and toxic chemicals management in the Bank’s operations in the South Asia region.  

**Content:**  
This paper assesses the opportunities and constraints associated with initiating and supporting activities relating to POPs in partnership with India, other countries of South Asia, the Global Environment Facility (GEF) and other interested parties and stakeholders. It also outlines key principles and approaches that the Bank’s regional management can consider for the introduction, and eventual mainstreaming of issues related to POPs (specifically) and toxic chemicals (more broadly) in the Region. The review is based on an assessment of the Bank’s comparative strengths in the context of the prevailing internal and external environments.
The primary objective of this strategy is to develop a comprehensive sector strategy for the phase-out of CTC as Process Agent (PA) use in India. This strategy will build on the existing policies and Ozone Depleting substance (ODS) phase-out strategy of the Government of India and should be consistent with ongoing activities, such as the Chlorofluorocarbon (CFC) production and consumption sector phase-out projects and the proposed projects for CTC phase-out in the pharmaceutical sector. A secondary objective of this study is to develop a sector-wide supply-demand scenario for CTC in order to establish the baseline conditions which will affect the availability and supply of CTC, both as a PA and as a core product for the chemical industry.

Studies summarized in this report were undertaken to determine the cost of Protocol compliance to India, for an optimal strategy for adjustment/phaseout. Studies on the pharmaceutical sector were done by the United Nations Development Program (UNIDO); on the use of CTC for solvent applications (the “solvent sector”) by the United Nations Environmental Programme (UNEP); on production sector adjustment and of phaseout in process agent (PA) applications of CTC by The World Bank; and on plant-specific CTC phaseout and plant conversion studies by all implementing agencies.
## Annex H

**TFESSD–Environment Window**

### I. Methodology and Tool Development

- **TF024692** SAR: South Asia Strategic Program ($1.650 million): Poverty and Natural Resource Management Outcomes
- **TF027742** EAP: Strategic Environmental Assessment Western China Development Plan ($185,000) Strategic Environmental Impact Assessment
- **TF051310** World: Preparation of a Toolkit for Country Environmental Analysis ($690,000)
- **TF052822** LCR: Adaptation Strategies to the Environmental and Socioeconomic Impacts of El Nino for Rural Communities in Ecuador and Peru ($260,000)
- **TF052554** World: Land and Gender Impact and Study ($180,000)
- **TF053884** World: Adaptation Screen Design Tool ($275,000)
- **TF052912** World: Diesel Pollution Reduction Strategies for Cities ($200,000)
- **TF053902** World: Environmental Governance in Upstream Environmental Analytical Tools ($350,000)
- **TF051812** LCR: Honduras Eco/cultural tourism development, Environmental and Social Dimensions ($300,000)

### II. Poverty-Environment Linkages

- **TF024817** AFR: Environmental Risk Management, First and Second Phase ($1.050 million)
- **TF051598** MNA: Egypt, Poverty and Natural Resources ($300,000)
- **TF051607** EAP: Poverty Environment Nexus ($590,000)
- **TF051786** World: Poverty Impacts of Payments for Environmental Services ($237,000)
- **TF052629** EAP: Mapping the Relationships Between Poor Rural Community & Forest Land/Land Use Changes ($110,000)
- **TF052653** EAP: Valuation of Environmental Health Risk & Poverty Environment Linkages ($321,500)
- **TF052779** AFR: Africa Strategic Environment and Poverty Program ($1.225 million)
| TF052721 | ECA: The Environmental Millennium Development Goal in ECA ($250,000) | Sustainable Management of Marine and Coastal Areas ($416,000) |
| TF053874 | AFR: African EA&M Services ($190,000) | AFR: Mainstreaming WB/WWF Forest Alliance Targets in Africa Regional Country Programs ($600,000) |
| TF052593 | World: World Resources Report ($1.250 Million) | |

**III. Environment in PRSPs and CASs**

| TF053892 | SAR: South Asia Environment Strategy Implementation ($600,000) | |
| TF052198 | AFR: Developing Monitoring Indicators & Tools for Tracking Poverty-Environment Issues ($500,000) | |
| TF053885 | EAP: Integrating Environmental Issues in PRSs, Country Policies and Programs in the EAP Region ($300,000) | |

**IV. Environment in Sectoral Planning and Programs**

| TF024693 | World: Land Access and Tenure Security for the Poor ($315,000) | |
| TF027741 | MNA: Legal Framework for Public Participation for Municipal and Hospital Waste Management, MNA ($640,000) | |
| TF024922 | MNA: Energy-Environment Review (EER) in Egypt and Iran ($900,000) | |
| TF051328 | AFR: Mauritania, Technology Fosters Tradition ($184,500) | |
| TF051421 | AFR: Tanzania: Options for Alleviating Poverty through | |

**V. Environmental Governance**

| TF051319 | MNA: Role of Institutions and Governance in the Middle East Region ($180,000) | |
| TF051420 | World: Governance of Natural Resources ($435,000) | |
| TF051534 | AFR: Environmental Assessments and Public Participation in SADC countries ($425,000) | |
| TF051771 | SAR: Environment Watershed Externalities and the Role of Local Institutions ($118,500) | |
| TF051800 | EAP: Environment Performance Disclosure in China ($268,000) | |
| TF054365 | World: Good Governance for Sustainable Development ($200,000) | |

*Note: This list is as of end October 2004.*
Annex I

AAA and CASs: A Gap Analysis in Environment-Priority-CAS Countries

The country assistance strategy (CAS) is a broad development framework, planned and developed at regular intervals by the World Bank in collaboration with the government and other stakeholders and tailored to the country’s needs. The CAS is the central tool of the Bank management and Board for reviewing and guiding the

<table>
<thead>
<tr>
<th>Country</th>
<th>Description</th>
<th>2002</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Algeria</td>
<td>CAS</td>
<td></td>
<td>ESW/TA</td>
<td></td>
</tr>
<tr>
<td>Azerbaijan</td>
<td>CAS</td>
<td>ESW</td>
<td></td>
<td>ESW/TA</td>
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<tr>
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</table>

Table 1
Key: The color-shaded areas indicate the year for which a country CAS/CRN/TSS is scheduled.

CAS – Country Assistance Strategy     CRN – Country Re-engagement Note
TSS – Transitional Support Strategies

CAS Progress Reports (CASPR) are included only for countries that does not have a scheduled CAS for the fiscal 2003-2006 period
World Bank Group’s country programs and is the vehicle for judging the impact of its work. Ideally, country-specific ENRM AAA should be timed to provide critical input at the start of the new CAS cycle and to influence the CAS process in a meaningful way.

In 2000, the Environmental Economics Team in the Environment Department carried out an environmental review of CAS operations produced in 1999 and is presently completing a similar review of the fiscal 2002-2003 CAS operations. Using information from the Bank’s institutional databases, Table 1 displays the ENRM ESW/TA production schedule for the eighteen from the fiscal 2002-2003 CAS with the highest overall environmental scores. The result is mixed, with a little more than half of the top-ranked CAS countries having environmental ESW/TA to precede or parallel the respective CAS processes. Additional analysis is needed to establish whether there

### Table 2

<table>
<thead>
<tr>
<th>Country Description</th>
<th>ESW and TA/FY</th>
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<tr>
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**Key:** The color-shaded areas indicate the year for which a country CAS/CRN/TSS is scheduled.

**CAS – Country Assistance Strategy**

**CRN – Country Re-engagement Note**

**TSS – Transitional Support Strategies**

**ENV Priority CASs**

CAS Progress Reports (CASPR) are included only for countries that does not have a scheduled CAS for the fiscal 2003-2006 period.
was also a thematic linkage between the respective analytical pieces and the CAS in the cases where ESW/TA work existed.

As part of the effort to up-stream environmental consideration in country assistance strategy decision-making, the Environmental Economics Team has also analyzed the CAS pipeline to determine environmental priority CAS operations based on prioritizing the importance of environment in a country’s context given the extent of lending and the state of environmental degradation in that country. To analyze how well current ENRM AAA work is timed, information from the Bank’s institutional databases was further used to show the planned ENRM ESW/TA programs for the respective CAS countries (Table 2).

Finally, the fiscal 2005 lending portfolio of projects with a major ENRM theme was compared to the respective ESW/TA fiscal 2002-2004 portfolio and fiscal 2005 pipeline. As Table 3 demonstrates, the overall trend is one of at least a general relation between ENRM ESW/TA work and country lending operations.

Table 3

<table>
<thead>
<tr>
<th>Country</th>
<th># of FY 05 Lending Operations with a Major ENRM Theme</th>
<th>ESW and TA /FY</th>
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Anjali Acharya, Milen Dyoulgerov and Eri Tsutsui
### Table 3 (continued)

<table>
<thead>
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<th>Country</th>
<th># of FY 05 Lending Operations with a Major ENRM Theme</th>
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</table>
Notes

1. In fiscal 2004 the Bank went through a further set of ESW and TA reforms that clarified and streamlined the respective product lines while reducing the scope for duplication and improper product definition. ESW now includes only reports and policy notes. TA development objectives were linked with results, affirming the emphasis on interim outcomes and improving the focus and quality of TA activities (see annex E).

2. As of July 1, 2004, Operations Policy and Country Services (OPCS) has reclassified output types for ESW to include only reports and policy notes. Consultations/country dialogue (COD) and conference/workshop (CON) output types are no longer valid for the ESW product line. The analysis performed for this review, however, takes into account all these output types for the period prior to fiscal 2002.

3. The World Bank Group’s operations are organized across six regions, each under a vice president. The regions are (Sub-Saharan) Africa (AFR), East Asia and Pacific (EAP), (Eastern) Europe and Central Asia (ECA), Latin America and the Caribbean (LAC or LCR), Middle East and North Africa (MNA), and South Asia (SAR).

4. The pipeline data used for this review should be considered valid as of the second quarter of fiscal 2005, with the understanding that programming is still at a very preliminary phase for fiscal 2006 and 2007.

5. The report was a joint study by the U.K. Department for International Development (DFID), the European Commission (EC), the United Nations Development Programme (UNDP), and the World Bank.

6. SEA usually addresses the environmental impacts (physical, biophysical, and so on) of policies, plans, and programs and some of the social consequences of those impacts (e.g., loss of access to resources, displacement), but its scope can be much broader.

7. This does not mean that other operations are irrelevant; public administration DPLs, for example, can serve as vehicles for enhancement of environmental management. Across the board, every opportunity to strengthen positive environmental impacts should be sought.
8. Changed to Land administration and management
9. For tasks above $20,000. For tasks below this amount, guidelines are applied at the discretion of the Director.
10. The selection of peer reviewers will be approved by the DMT and should include staff from Anchor and the Regions.
11. These reviews rank the CAS operations on a relative scale from 1 to 4 on six criteria as related to environment: identification of key environmental problems; proposed treatment for those problems through specific interventions; mainstreaming of environmental concerns into other sectors; poverty-environment linkages; linkage between Policy issues and environmental change; and analysis of environmental implications of the economic incentives discussed in the respective CAS.
12. The analysis uses data on environmental degradation from prior WB studies to calculate the difference in total environmental lending for a country and environmental degradation. Environmental degradation was captured under 7 criteria corresponding to the individual ENV themes: biodiversity conservation; climate change; environmental policy; water resources management; land management; pollution management; and other environmental issues. Data on “total lending” for each country was then obtained from the Environment Portfolio Database. This included total lending for a country which had an environmental project and the environmental portfolio under the total lending. The index developed on the basis of these data was used for comparing different countries on the premise is that it provides some measure of how environment is valued given the extent of lending and the state of degradation in the country. Graduating CASs from ECA and transition countries CASs are excluded from this analysis.