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The World Bank Group

2010 Environment Strategy

Analytical Background Papers

Lessons from Environmental Mainstreaming: Towards Environmental Sustainability

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Executive Summary

The core message of the 2001 World Bank Environment Strategy was to support developing countries in their efforts to “mainstream” or integrate environmental considerations into activities of the economic sectors (energy, water supply, urban development, rural development, transport, etc.). The Strategy sought to move beyond mitigating environmental impacts of development, embodied in the Bank’s environmental safeguards policies, towards a progressive adoption of environmental aspects across Bank services. The tools suggested to help the Bank’s client countries achieve such integration were upstream analytical and advisory inputs for sector decision-making and for improving the understanding of poverty-environment linkages.

As an input to the new 2010 World Bank Environment Strategy, this paper aims at assessing the degree of mainstreaming environmental activities in Bank activities, reviewing how this was achieved, and determining whether it helped countries in their environmental management efforts. Furthermore, since the 2010 Environment Strategy seeks to move the World Bank Group¹ towards “environmental sustainability²,” the paper recommends illustrations of environmental outcome indicators as part of the 2010 Strategy’s results framework.

The assessment of environmental mainstreaming as a key World Bank strategic direction over the past 10 years is methodologically complex because the 2001 Strategy lacked indicators, including a baseline and milestones to assess progress. The lack of country data describing the interaction of development and the natural endowment makes “before and after” comparisons difficult. There is also an additional, possibly more difficult, challenge in attribution, because the Bank’s contribution to country outcomes is extremely difficult to establish. The paper’s approach is to review qualitatively the evolution of environmental content in Bank services, using the existing portfolio monitoring systems as a proxy of mainstreaming at least within the Bank’s own activities in the main development sectors. To explore impact at the country level, the paper uses case studies to illustrate attributes of Bank support which can be seen as contributing (though not exclusively) to country efforts to bring environmental issues to higher levels of development decision-making.

This review concludes that Bank sector lending and knowledge services have increasingly addressed environmental issues. From the total Bank portfolio, the share commitments addressing environment and natural resources themes has grown from about 5% in FY02 to 11% in FY09. The associated volume of commitments based on coding of primary and secondary

¹ The 2010 strategy covers the World Bank, MIGA and the IFC. This paper focuses on the World Bank since the 2001 Strategy was primarily a World Bank Strategy. A separate background document on the IFC environmental sustainability policy and practice is forthcoming.

² The terminology employed in the paper is as follows: “mainstreaming” refers to World Bank efforts to bring environmental considerations into development planning and sector decision-making. While in practice well timed and sound environmental impact assessment and mitigation (the main tool practiced under the World Bank’s environmental safeguard policies) can be useful for mainstreaming, this paper considers “mainstreaming” activities those over and above compliance with direct-project level environmental safeguards. The term “environmental sustainability” and “sector environmental sustainability” is used in the paper to represent outcomes of effective mainstreaming, i.e., development that improves well-being while sustaining the overall resource stock and increasingly using renewable resources.

themes chosen by Bank Task Team Leaders (TTLs) would indicate a level of \$5.5 billion in FY09 with environment Development Policy Loans (DPLs) accounting for about half of these commitments. Considering the shortcomings of the coding system, and aiming at drawing lessons from the past, this review suggests a focus on the “core” portfolio of projects whose main objectives are linked to environmental sustainability. These commitments have grown from \$93 million in FY02 to approximately \$3.7 billion in FY09. The sectors with the highest growth in share of environmental focus are energy, urban development, and water management. In the area of knowledge, an increasing volume of flagships (e.g., World Development Reports (WDRs), sector/regional papers, etc.), country studies, and recent sector strategies include environment topics and results indicators. The generation of these results has been helped by trust fund programs managed by the sectors, such as the Energy Sector Management Assistance Program (ESMAP) and the Bank Netherlands Water Partnership Program (BNWPP) and by the co-financing provided by the Global Environment Facility (GEF), carbon facilities, and recently, the Climate Investment Funds (CIF).

But how important is growth in environmental mainstreaming work at the Bank to a country's efforts to address environmental challenges in key economic sectors? The process of searching case studies to document the Bank's contribution proved difficult, showing that integration of the environmental dimension in sector development remains a challenging area in a large number of countries. The examples provided include: reform of transport fuels quality in Colombia; water management in China; financing for nature tourism in Namibia; environment-related energy reforms in Turkey; and valued-added safeguards work for roads in India and education in Pakistan. These are intended to illustrate the attributes of Bank support that have served the clients well and could be emphasized in the future: relevant and timely analytical work followed by policy and technical assistance (TA) lending which links economic performance with environmental conditions (Colombia); a long and sustained engagement enabling joint learning (China); credible analytical input informing dialogue between environmental authorities and the Ministry of Finance (Namibia); provision of varied instruments to support sector reforms (Turkey); and going beyond compliance for greater development impact in safeguards work (India and Pakistan).

As environmental problems are mounting in most developing regions of the world, helping clients address the complexities involved in their solution demands an organization with adequate abilities and incentives. The 2001 internal incentive and accountability framework sought to encourage greater attention to environmental issues in country work programs by means of a strong mandate from senior management and a limited “off-the-top” subsidy, but such incentives proved difficult to sustain. Rather than responding to a mandate from the Bank's senior management, gradual progress has organically grown from within the relevant constituencies (influential professionals, development partners, and public opinion tracking sector development in adopting environmental issues in sector strategies). More recently, and since the Bank's Sustainable Development Network (SDN) integration, leadership from Sector Directors supporting cross-sectoral coordination for business-driven topics appears to be effective. Examples include the teams empowered to develop climate change work programs and the cross-unit teams working on water management and sustainable tourism issues.

Climate change and environmental issues more broadly are drivers of new business, especially in Middle Income Countries (MICs). Hence, staff skills to address them globally are a fundamental ingredient of the Bank's competitive advantage. The environment family is well endowed with one of the largest sector families (258 staff of which 41 are co-terminous appointments). Skills in policy analysis and institutional issues proved useful for promoting environmental mainstreaming, but other skills areas (including those present in other sector families) could be just as important but were not assessed due to lack of data. This review recommends that the Bank update the 2005 skills inventory (within and outside the environment family) and commit to collaborate on environmental skills renewal in each sector. The World Bank Group holds the largest global cadre of environmental professionals working on development issues and should aim at being a leader in this field.

Looking ahead, and recognizing the catalytic role that the environment practice has played over the last nine years, the following actions are recommended to guide the environmental sustainability agenda for the next decade:

- (a) **Develop joint work program of sector environmental sustainability to improve indicators and expand support to cross-sectoral themes.** The opportunities provided by the rapid increase of the climate change agenda across sectors and the efforts to measure the carbon intensity of sector development should not be missed to build other indicators linked to local environmental issues. Sector strategies have an initial set of indicators that could be improved, including an enhanced set of country level measures of sector environmental sustainability. These may include indicators of resource efficiency per unit of sector output (e.g., fuels consumed per unit of freight hauled, water use per hectare of irrigated agriculture, tons of greenhouse gas emitted per unit of sector output); measures of renewable resource use (e.g., share of new energy from renewable sources); and measures of service expansion linked to environmental outcomes (e.g., percent wastewater treated in sensitive ecosystems, solid waste collected and adequately disposed, share of urban space with vulnerability mapping, share of population with improved water supply and sanitation services). Baseline and time series similar to those presented in the Little Green Data Book³ would be useful for comparative analysis across similar income groups and economic structures. In addition, joint work programs should sustain support to work on cross-sectoral themes, such as pollution management and hygiene in health and water programs, possibly expanding to relatively "orphan" issues, such as indoor air pollution in partnership with energy and rural development.
- (b) **Highlight good practice in safeguards work and its use as entry-point for mainstreaming.** Shift the emphasis on safeguards from compliance to a value-added approach and invest in learning and staff skills. As the India and Pakistan examples showed, this means more actively managing the engagement on safeguards by intervening as upstream as possible and by investing in client capacity. Moving away from minimum safeguards compliance will

³ Little Green Data Book, World Bank, published annually.

require significant efforts to overcome barriers in the form of insufficient resources, inadequate skills, and deep-seated attitudes.

- (c) **Continue to improve the quality and effectiveness of core environmental work.** The past nine years have shown that good and timely analytical work coupled with better implementation of environmental projects have contributed to increased country capacity and demand for tackling the complexities of environmental issues in sector interventions. Thus, sustaining the focus on quality and relevance of the core environmental work contributes to medium to long-term empowerment of environmental advocates at the country level.
- (d) **Support innovation in financing and in resource mobilization to achieve sector environmental sustainability goals.** This review has highlighted the strength of the human resource base working on environmental topics and the key role that financing, through traditional trust funds and new financing instruments, has played in achieving environmental mainstreaming. The environment family should continue to catalyze enhancement of the facilities already in place (GEF, carbon finance, CIF, trust fund programs), contribute to fund-raising, and promote innovation in financing instruments.

1. Rationale and Context

In the World Bank's 2001 Environment Strategy, the "quality of growth" pillar emphasized the Bank's efforts to work with its country clients to integrate/mainstream environment into investments, programs, sector strategies, and policy dialogue, taking into account institutional requirements and capacity constraints. To achieve this, the Strategy established medium term targets for this pillar focused on development of analytical work to help bring environment into the Bank's Country Assistance Strategies (CASs), sector reform programs, and Bank-supported investments. As an input to the 2010 Environment Strategy, this paper is a retrospective review assessing how environmental mainstreaming has been achieved and the extent to which it has been successful.

Objectives

- (a) *To assess past progress in pursuing environmental mainstreaming in Bank services to developing countries.* The paper seeks to find out the extent to which the 2001 mainstreaming objectives have been broadly achieved over the last nine years.
- (b) *To initiate development of a blueprint to guide future Bank environmental sustainability efforts.* The paper seeks to contribute to articulation of a set of principles for environmental sustainability that can guide Bank operations in a post-2010 development context.
- (c) *To inform the development of an improved results framework for environmental sustainability.* The paper seeks to contribute to an improved results framework as proposed in the Concept Note for the 2010 Environment Strategy.

The review's findings are presented below in three parts: an examination of progress in mainstreaming environment into sector programs and portfolios; assessment of the contribution of the Bank's mainstreaming efforts through selected country examples; and an analysis of internal Bank factors affecting progress toward the mainstreaming objectives. Following the analysis, a set of recommendations is provided to help shape the 2010 Environment Strategy.

The assessment of environmental mainstreaming as a key World Bank strategic direction over the past 10 years is methodologically complex because the 2001 Strategy lacked indicators, including a baseline and milestones, to assess progress. The lack of country data describing the interaction between development and the natural endowment makes "before and after" comparisons difficult. There is also an additional, possibly more difficult, challenge in attribution, because the Bank's contribution to country outcomes is often extremely difficult to establish. The paper's approach is to review qualitatively the evolution of environmental content in Bank services using the existing portfolio coding system as a proxy of mainstreaming at least within the Bank's own activities in the main development sectors. To explore impact at the country level, the paper uses case studies to illustrate attributes of Bank support contributing to country efforts to bring environmental issues to higher levels of development decision-making. Noting that the paper's methodological approach can be significantly improved with better indicators, the paper

proposes that the 2010 Strategy include development of an improved set of measures for sector environmental sustainability efforts.

A clarification on terminology used in this paper is necessary to address comments received from peer reviewers. First, mainstreaming refers to work either within the economic sectors or as part of environmental programs to promote the integration of environmental issues into development decision-making. Since compliance with environmental safeguards pre-dates the 2001 Strategy and represents a minimum standard, this paper excludes compliance with project-level environmental safeguards in the definition of mainstreaming. While in practice, well-timed and sound environmental impact assessment and mitigation (the main tool practiced under the World Bank's environmental safeguard policies) can be useful for mainstreaming, this paper targets efforts above this minimum standard. The terms "environmental sustainability" and "sector environmental sustainability" are used in the paper to represent outcomes that effective mainstreaming would produce, i.e. development that improves well-being for current and future generations while sustaining the overall resource stock and increasingly using renewable resources. The latter concept is the direction of the new 2010 Environment Strategy.

2. Mainstreaming Environment in Sector Programs and Portfolios

*The main finding of this retrospective review is that sector knowledge, strategies, and lending services increasingly address environmental aspects.*⁴ Factors which help explain why sectors have increasingly embraced environmental issues include: country demand stemming from deteriorating environmental conditions; a better knowledge base to set priorities; support from concessional financing (trust funds and special facilities); and commitments to shareholders (e.g., Bonn targets for renewable energy⁵). This section focuses on three levels of Bank work to describe this finding: knowledge services, sector strategies, and lending services.

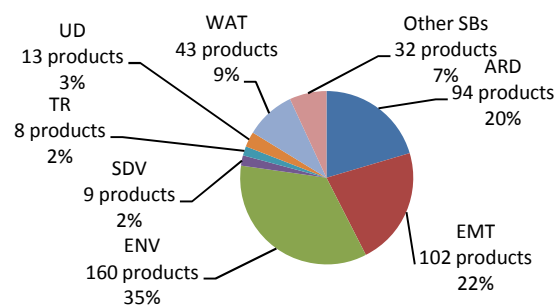
Knowledge services: Bank products such as analytical and advisory assistance (AAA, which include economic and sector work and technical assistance tasks), flagship publications, guidance notes, and World Development Reports (WDRs) have increasingly recognized that the state of the environment and natural resources (ENRM) contributes to human well-being, service sustainability, and sector long-term performance. These knowledge products have influenced Bank sector support in policy dialogue and lending. In addition, the contribution of these knowledge products to enhanced understanding about linkages between sector-led growth and environmental sustainability creates the capacity to influence actions by client countries and development partners.

⁴ These environmental aspects are independent from the impact mitigation work called for in the Bank's safeguards policies, the subject of another forthcoming background paper, "Implementation of Safeguards Policies and Environmental Complaints Handling Mechanisms".

⁵ At the International Conference on Renewable Energies in Bonn in June 2004, the WBG committed to increasing investments in new renewable energy and energy efficiency. The specific goals included a target of at least 20 percent average growth annually in these two areas in FY05–FY09. These targets were met and even exceeded.

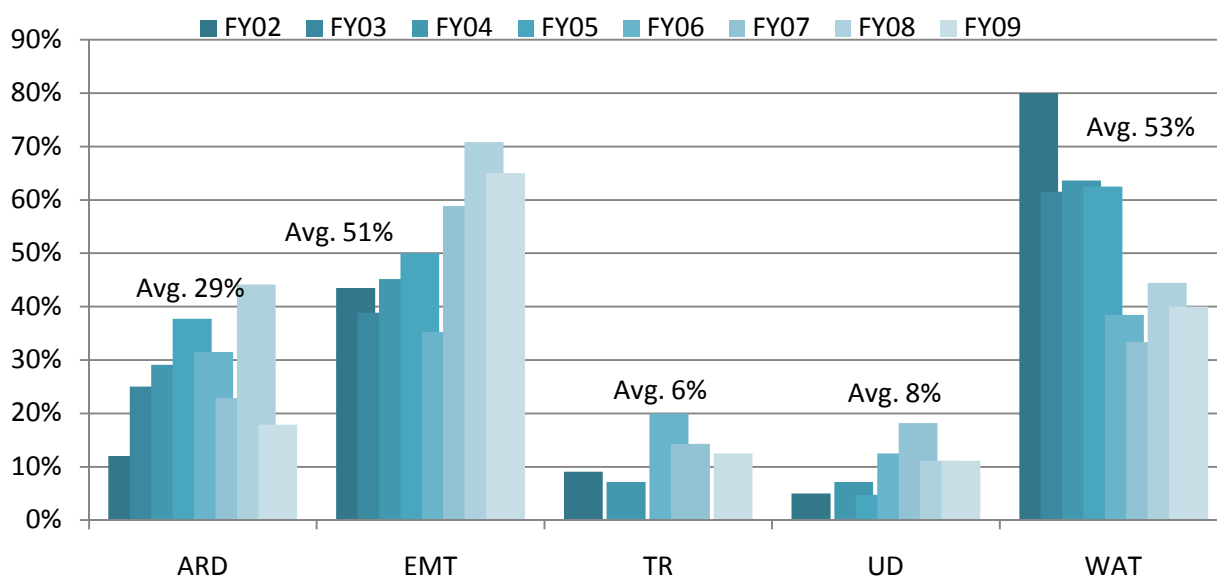
Fig. 1 shows the distribution of economic and sector work (ESW) by the Environment Sector Board for products with ENRM content over the period FY02-09⁶. Of note is the significant number of ESW products delivered by Energy and Mining (EMT) (102) and Agriculture and Rural Development (ARD) (94) compared to the Environment Sector Board (160) as “host” of environment themes. Figure 2 shows that the share of ESW products with ENRM content has represented, on average, 29% of ARD, 51% of EMT, and 53% of water supply and sector (WAT) products delivered annually.

Figure 1: Sector Work with environment content by Sector Board (FY02-09)



Source: World Bank Business Warehouse.

Figure 2: Share of total ESWs with environmental content by Sector Board



Source: World Bank Business Warehouse

A significant share of the AAA products mapped to the Environment Sector Board addressed sector policy issues, such as Country Environmental Analyses (CEAs) dealing with drivers of growth (Peru fisheries, mining; Ghana forests), Strategic Environmental Assessments (SEAs), and

⁶ Includes ESW products that include at least a primary and a secondary ENRM theme.

other environmental studies addressing environmental regulatory issues (Sierra Leone SEA on the mining legal and institutional framework; Sequencing Strategies for EU Accession on priority investments for wastewater and solid waste management), and other sector-specific studies (causes of deforestation in the Amazon)⁷. The analytical products with environmental content mapped to other Sector Boards also cover a range of structural issues linked to sustainability. For example, Country Water Resources Assistance Strategies (CWRASs), which are analytical products developed to integrate programs that have an impact on or are affected by water resources, deal with issues such as scarcity, variability, pollution, groundwater management, and considerations of water resource productivity in irrigation planning. Bank and government programs, such as in Yemen and China, have been influenced by CWRASs. Energy-environment reviews (EERs) were completed for a number of countries in the early 2000s, highlighting the key sources of pollution and resource depletion linked to the power and fuels sectors. For example, the Egypt EER found that industry was a main source of air pollution, contributing to 21 percent of the damage costs, followed by transport (17 percent), and vegetative burning (11 percent). Subsequent studies for Egypt, such as the 2005 CEA in 2005, led to increased awareness and interest in tackling industrial pollution, and two Bank projects (Egypt Pollution Abatement Project (EPAP) I and II) are contributing to reduced industrial pollution such as reduction of particulate and SO₂ emissions in Cairo and Alexandria.

These studies are largely the result of country demand, particularly in Middle Income Countries (MICs), and their expansion has benefited from the contribution of trust fund programs. Box 1 presents a synopsis of trust fund programs that support ENRM analytical work.

Box 1: Examples of Trust Fund Programs supporting sector-led environmental work

- (1) Bank Netherlands Water Partnership Program (BNWPP): Groundwater, wastewater, and river basin management issues; water supply and drainage.
- (2) Energy Sector Management Assistance Program (ESMAP): Air Quality AAA and support to Clean Air Initiatives, solid waste studies, and climate co-benefits studies.
- (3) Global Program on Fisheries (PROFISH) and Program on Forests (PROFOR): studies and TA for country-level fisheries and forests work.
- (4) Water and Sanitation Program (WSP): water supply and sanitation services for the poor, including hand-washing TA.
- (5) Global City Indicators Facility: includes work on GHG index.
- (6) Public-Private Infrastructure Advisory Facility (PPIAF): supports studies on renewable energy with private financing

Sector Strategies: Drawing on analytical work and country demand, recent sector strategies recognize more explicitly the interdependence between environmental conditions and overall sector performance and a country's ability to sustain development outcomes. These recent strategies establish results indicators linked to environmental outcomes at global and country levels and point to associated World Bank Group actions and inputs (see *Annex 1*). For example, the transport strategy calls for "promoting instruments which encourage strategic environmental

⁷ For a detailed description of the AAA work conducted over the FY02-04 period, consult "Analytical and Advisory Activities in Environmental and Natural Resources Management, A Review of Fiscal 2002-04 Activities," Strategy Series Paper Number 10, September 2005.

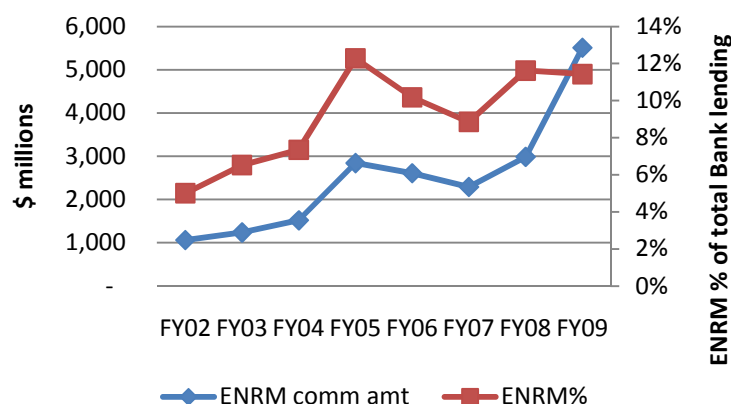
assessments.” The urban strategy proposes standards to be adopted for urban planning and infrastructure investments to promote environmental sustainability, including the use of a city-level greenhouse gas (GHG) Index.

The evolution of climate change as a World Bank Group corporate priority also provides another useful example of how a global environmental issue is gradually being mainstreamed into development strategic thinking. The World Bank Group had gained experience over 10 years in working with clients to understand and address some of the causes and consequences of climate change (primarily through GEF support and other trust funds). The request to develop a paper for the Gleneagles Summit in 2008 and the subsequent commitment to the Strategic Framework on Development and Climate Change⁸, marked the onset of the institution’s commitment to view climate change as a development challenge and to take action to help clients respond according to their priorities (i.e. among the various areas of mitigation and adaptation to climate change). The establishment of a climate change management team has helped build internal communication and coordination to deliver on the targets set under the Strategic Framework.

Each of the sector strategies and the climate Strategic Framework have attempted to develop results indicators to help measure progress against the sector-related environmental sustainability targets, although at uneven levels of specificity. This is clearly an area for further improvement and is discussed in more detail in the Recommendations section.

Lending Services: The trend in commitments for projects codified as addressing ENRM themes has closely tracked overall growth in Bank lending. Commitments have grown from about \$1 billion in FY02 to \$5.5 billion in FY09. As shown in Fig. 3, ENRM themes have been rising in proportion to total Bank lending going from 5% in FY02 to 11% of total Bank lending in FY09 (with the notable contribution of environment development policy loans (DPLs) in recent years).⁹

Figure 3: ENRM Commitments - all product lines



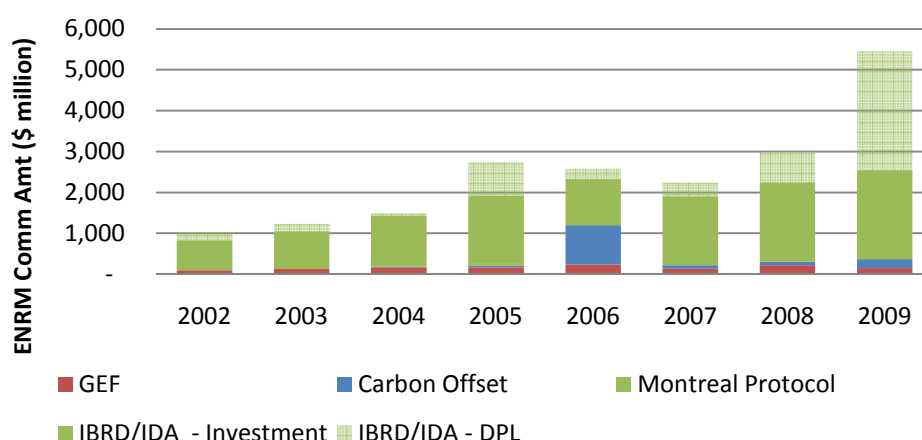
Source: World Bank Business Warehouse. (All figures in this paper are in nominal US \$)

⁸ “Development and Climate Change: A Strategic Framework for the World Bank Group”, Technical Report. 2008.

⁹ The Bank coding system includes 11 themes and 10 sector codes. “Environment and Natural Resources” is one of the 11 themes which in turn is broken down into seven subthemes. See Annex 2 for more details.

Fig. 4 shows the composition of these commitments by product line, highlighting the fact that the volume of DPLs is increasing, although not to the detriment of investment lending. In addition, while GEF and carbon finance commitments had fluctuations over the years, they played an instrumental role in mobilizing World Bank and other co-financing. The Bank Group's GEF portfolio of climate change projects, estimated at \$1.7 billion, has leveraged another \$13.7 billion from other sources, bringing its total value to \$15.4 billion, or a leveraging ratio of 1: 6.3¹⁰. The Bank's carbon finance business encompassing 213 active projects in 57 countries has mobilized \$3.8 of private and public financing for each dollar of carbon finance contracted¹¹.

Figure 4: ENRM commitments by product line



Source: World Bank Business Warehouse

The above figures point to a positive trend in volume of activity with ENRM themes based on the Bank thematic coding system. The system apportions commitments to themes following task team leaders' (TTLs) classification in up to five themes on a mutually exclusive basis (i.e. if only two themes are picked, the system assigns each 50%)¹². This leads to potential discrepancies with respect to the actual amounts that a project may allocate to environmental components. In 2005 the Independent Evaluation Group (IEG) criticized these figures as overstating the amount of lending commitments actually supporting environmental improvement. This potential problem affects all development areas represented by themes in the Bank system (such as urban development, rural development), and is recognized even by the Operations Policy and Country Services Vice Presidency (OPCS) as a simplification aimed at representing the Bank portfolio by exclusive categories (all projects are classified by both sectors and themes).

To reduce the risk of overstatement, a subset of the ENRM portfolio designated as "core" portfolio, defined as the portfolio with 65% or more ENRM thematic content, has been the basis for analyzing the nature of environment activities supported by the Bank. For this paper, a

¹⁰"Beyond the Sum of its Parts. Combining Instruments to Support Low-Carbon Development". Environment Department; 2010, page 2.

¹¹"10 Year of Experience in Carbon Finance," World Bank Carbon Finance Unit, 2009, Fig. 4.

¹² Beginning in FY09 the system was modified to allow manual entry of thematic codes. OPCS reviews and may request adjustments.

comparison was conducted between the actual value of components dedicated to environmental objectives and those derived from the coding system. First, the projects mapped to the Environment Sector Board were excluded since they are designed to achieve environmental outcomes¹³, posing the lowest risk of “misclassification”. Second, project appraisal documents (PADs) of twenty IBRD/IDA projects with the highest commitments coded to environmental themes in all other sector boards¹⁴ were reviewed. These projects mapped to other sector boards represented 74% of commitments in the “core” IBRD/IDA portfolio. Annex 2 presents more details about the approach and results of this portfolio review.

The findings indicate that the coding system is by-and-large robust in accounting for the share of commitments in the core portfolio which actually address environmental improvements, since the level of error was found to be below 3%¹⁵. Thus, while Bank reports will continue to use the overall ENRM share of Bank lending for its reporting, this review would recommend to use their growth trend as evidence of mainstreaming taking place in other sectors, but to refer to the core portfolio when reporting volume and characteristics of lending in environmentally-oriented investments.

3. Relevance to Country Mainstreaming Efforts

Considering the relatively small financial and knowledge contribution the World Bank can provide to development efforts, and in particular to environmental concerns, it is difficult to determine its importance to a country's mainstreaming efforts. However, this review highlights attributes of Bank support to countries where sustained engagement in environmental management has been catalytic in achieving measurable reforms and outcomes.

In Colombia, a combination of World Bank instruments contributed to improving institutional capacity to implement environmental policy reforms. During the mid-2000s, Colombia targeted improvement of air quality in its major cities as a key policy objective, and began implementation of the Air Pollution Prevention and Control Policy, requesting World Bank assistance. Since then, a combination of Bank knowledge and lending services has helped Colombia develop and

¹³ Projects mapped to the Environment Sector Board support policy reforms, investments and technical assistance activities to address environmental issues in the development sectors (e.g., river basin clean-up, waste-to-energy schemes, etc.). Some of these projects also include support for core functions of the environmental authorities, e.g., planning, monitoring, and standard setting, which have an indirect influence on sector activities (when regulations are enforced or monitoring used for decision-making). For simplicity they have been counted as part of the portfolio demonstrating environmental mainstreaming.

¹⁴ The sector boards with projects addressing environmental themes are rural development (ARD), energy and mining (EMT), water (WAT), and urban development (UD).

¹⁵ As described in more detail in Annex 2, this is primarily due to an offsetting effect of slight overstating of ENRM content in water and rural projects with understating in urban projects combined with the large contribution of projects mapped to the Environment Sector Board. In reality, a single dollar can simultaneously address, for example, pollution issues and urban services by investing in municipal institutional capacity for solid waste management. The coding system adopts definitions by convention serving the purpose of reporting the composition of all Bank activities along sector and thematic dimensions. Since the purpose here is to reflect the proportion of commitments used by clients to address environmental issues (irrespective of other objectives being met with the same financing), double counting is not a concern for the conclusions drawn.

implement the Policy. In 2006, the Bank's CEA¹⁶ estimated that 6,000 people died prematurely in Bogota as a result of air pollution every year, and the annual health costs and loss of productivity due to particulate matter (PM) emissions alone was 0.8 percent of the national GDP. These striking findings were disseminated by the government through a media campaign which succeeded in creating high public awareness, including drawing attention from political circles that later helped passage of the new law. A Programmatic Sustainable DPL series accompanied by a technical assistance loan contributed to improved institutional coordination and dialogue on environmental policy across sectors and strengthened capacity to monitor and provide hard data on air quality conditions. Fuels sector SEAs helped underpin technical aspects of the fuel quality improvement program. Ecopetrol, a joint public-private company, the Ministry of Environment (MAVDT) and the City of Bogota signed a voluntary pact, whereby Ecopetrol would lower the sulfur content in diesel from 2,500 to 50 ppm by 2010. The pact played a key role in achieving compliance under the Law on Fuel Quality in 2008. A similar pact has been signed for Medellin.

Today, residents of cities such as Bogota and Medellin breathe improved air, thanks to the government's success in controlling pollution from mobile sources, particularly sulfur content in transport fuels. Colombia's remarkable success in passing the Fuel Quality Law in 2008¹⁷ can be attributed to a sustained effort to address air pollution from a multi-sectoral approach, drawing from a solid analytical basis and actively engaging with relevant stakeholders, such as the national oil company, the public, and legislators.

China is the largest Bank borrower for projects addressing environmental objectives in various sectors, notably water supply and sanitation, rural development, energy, and urban transport. However, financing volume is an insufficient indicator to describe the partnership the Bank has had with China in tackling the extremely complex environmental issues facing this highly dynamic and diverse country. The Bank's financing is a very small share of China's total environmental investment: total Bank lending averages about \$1-1.5 billion per year; in 2004 China invested 1.4% of its GDP in environmental protection, or approximately \$23 billion¹⁸. Instead, in areas such as China's water management challenges, the Bank can be seen to be a "learning" partner, with extensive engagement in testing solutions for difficult urban and rural water issues deploying almost all available instruments (knowledge, capacity building, lending, grants, South-South exchange).

The Bank is aiming to influence China's approach to addressing its water challenges, drawing lessons from its long experience in financing water supply and sanitation, urban environment, watershed management, integrated water resource management (IWRM), and environment projects elsewhere. In China's secondary cities which have seen the highest population growth, for instance, the Bank is encouraging improvement of water utility pricing and regulatory policies to promote equitable and efficient tariffs; expansion of financing options, including

¹⁶ "Colombia – Mitigating Environmental Degradation to Foster Growth and Reduce Inequality," February 25, 2005.

¹⁷ The Law mandated sulfur content in Bogota's diesel to fall from 1,200 ppm in January 2008 to 500 ppm in July and further to 231 ppm in October 2009. Based on air quality monitoring data, the concentration of PM in Bogota fell by 8% in 2008 and continued to further decline in 2009. Furthermore, the number of consecutive days with PM levels out of compliance with the norms fell from 59-50 in 2007 and 2008 to only 12 in 2009.

¹⁸ Source: China Water Quality Management. Policy and Institutional Considerations. EASES Discussion Paper. September 2006.

private financing, for the large wastewater investments expected to double in the next decade; and improvement of planning and operations.¹⁹ In the rural context, introduction of bulk water pricing is being promoted to drive higher efficiency in irrigation water use, while numerous projects have demonstrated successful models of watershed management linking forest management with improved irrigation, drainage, and soil management systems (Tarim Basin I and II, Loess Plateau projects). Finally, in the areas of energy and urban transport, the Bank is assisting China to meet its stated plan to reduce energy intensity (energy efficiency and renewable energy pilots to be scaled-up; studies on inland waterways and rail transport).²⁰

Namibia presents an illustration of how an analytical input and sustained dialogue can influence government's thinking on how to sustain nature tourism, a key source of income which accounted for about 3.8 percent of GDP in 2008. The Ministry of Environment and Tourism (MET), responsible for managing Namibia's national parks, faced a financing gap to adequately maintain the parks and protect the biodiversity that contributes to Namibia's attractiveness as a tourism destination. The Bank prepared a Public Environmental Expenditure Review (PEER) in 2008²¹ to inform the government's assessment of how to improve the financial sustainability of the park system.

The PEER highlighted the fact that the park system in Namibia relies primarily on domestic resources (80 percent on average) and faces diminishing donor support. Though most of the domestic resources are derived from the Government's fiscal revenues, MET also receives a small amount of domestic resources transferred through the Game Products Trust Fund, which includes the export levy, hunting concessions, revenues from the proceeds of game product sales and 25 percent of the park entrance fees. The balance of park entrance fees is retained by the Ministry of Finance (MoF). The PEER recommended a periodic review and revision of Namibia's environmental and tourism pricing system over the short and medium term to strengthen MET's revenue collection, notably for fees related to the concession and park entrance. Drawing on the PEER recommendations, the government of Namibia has prepared a plan for 2010-12 which proposes that: Treasury should increase its funding to MET for the parks; the MoF should allow MET to retain a greater proportion or all of its revenue to be reinvested in park management; and park entry fees should be reviewed and updated every three years based on proper analysis of demand, needs and objectives.

Turkey's interest in pursuing energy policy reform while addressing associated environmental challenges has created a fruitful collaboration with the Bank Group. Based on 2004 estimates, energy generation was responsible for emissions of key pollutants: nearly 96% of sulfur dioxide, 23% of nitrogen oxides, and 99% of particulate matter emissions. In 2009, Turkey's primary energy mix consisted of about 31% natural gas, followed by about 28% oil, 15% coal, 14% lignite and 10% renewable sources. In the past decade, the preparation for EU accession provided a

¹⁹ Source: "Stepping up: Improving the Performance of China's Urban Water Utilities," July 1st, 2007.

²⁰ Source: China Country Partnership Strategy Progress Report for the People's Republic of China for the Period 2006-2010. Report No. 46896-CN. December 24, 2008.

²¹ "Namibia - Implementing the Agenda of the Namibian Ministry of Environment and Tourism: A Rapid Country Environmental Analysis with a Public Expenditure Review for Aligning Policy, Institutional and Financing Priorities", December 1, 2008.

major incentive for Turkey to strengthen environmental management in the energy sector.

Turkey has made several legal, regulatory, institutional and financial reforms that are designed to promote sustainable environmental management, improve its energy security and energy efficiency, and support climate change mitigation. The Bank has been actively engaged in the dialogue with the Government of Turkey on the energy and environment nexus and has provided support to the energy sector reform through a number of AAAs and lending operations. Building on its 2003 *Energy and Environment Review* and other studies and policy reform loans,²² Turkey has implemented energy sector reforms and enacted legislation for energy efficiency, renewable energy, and improved local air and water quality, including the 2005 Renewable Energy Law, the 2008 amendment to the Control of Air Pollution from Industrial Facilities Law, and the 2007 Energy Efficiency Law. Furthermore, an EU Integrated Environmental Approximation Strategy (2007-2023) has been adopted for the full transposition of EU Directives. The Bank's more recent DPLs have supported reforms linked to climate change. The Bank has also been supporting projects in Turkey on renewable energy, gas sector development, and electricity rehabilitation and restructuring, which address local environmental conditions.

The Bank's work with **India** in the transport sector demonstrates that safeguards work can be an effective entry point for environmental mainstreaming. Since 1997, Bank has been involved in the country in the preparation and/or implementation of 23 transport projects, including 6 national highway, 15 state highway, and 2 country-wide rural roads projects. Over the years, consistent attention to environmental issues and gradually improving implementation of environmental management plans have produced results that earned acceptance from decision-makers, engineers, local leaders and communities. Combining project-specific sector policy and institution building with dissemination of lessons learned has proven successful in influencing road and highway planning, designing and construction across India.

In addition to due diligence on environment, each Bank-supported project in India attempted sector- and agency-wide mainstreaming of environmental management to achieve goals greater than the immediate project goals. For example, Bank projects helped develop: environmental codes of practice for rural roads containing about 20 aspects of rural road planning and construction; standard or generic environmental management plans for national highways; good practice guidance for hot-mix and batching plants, construction workers' camps, borrow area management, management of cut slopes, etc.; and guidance for environmental monitoring and reporting. Regarding institutional development, the approach evolved from creating an environmental cell within the project management unit to creating environmental management units in roads agencies with broader mandates. The environmental and social development unit created in 2001 in the National Highways Authority of India was the first such example. These units have been sustained and expanded beyond the projects in the states of Andhra Pradesh, Gujarat, Tamil Nadu, Uttar Pradesh, Kerala and Karnataka. Further institutional progress is

²² The DPLs are: Programmatic Electricity Sector DPL (PEDPL I), which was implemented in 2009; Environmental Sustainability and Energy Sector (ESES) DPL II, which is currently underway; and ESES DPL III, which is on the pipeline and builds on the results of PEDPL I and ESES DPL II.

taking place, as the National Highways Authority of India has now developed and adopted environmental management systems for all activities in the process of being implemented.

One important aspect of the Bank's involvement was to help share environmental assessment terms of reference and management plans, good practices and designs of environmental mitigation measures. During 2002-04, Bank produced a collection of 20 self-contained dissemination notes summarized in a report²³ covering a wide range of topics and lessons learned in managing environmental and social concerns in the highway projects in India. A follow-up analytical work titled *Strengthening Institutions for Sustainable Growth in the Highways Sector*, undertaken as part of the 2008 India CEA, analyzed and recorded several examples of successful mainstreaming. These analytical products have been widely disseminated throughout the country.

Further evidence of India's progress in environmental mainstreaming is the country-wide adoption of manuals for environmental assessment and road landscape developed by the India Roads Congress and of environmental codes of practice in programs under the Ministry of Rural Development. At the state level, Gujarat and Himachal Pradesh have adopted environment policies for the roads and highways sector and implemented a training program to ensure their effective implementation. In Karnataka and Kerala, road and bridge works codes and technical specifications have been improved to include environmental mitigation and management measures.

Finally, on a smaller scale but equally illustrative of the potential of safeguards as a mainstreaming tool, the **Pakistan** Sindh Education Sector Reform Program aims at increasing school participation, reducing the gender and rural-urban disparities, and improving the measurement of student learning in Pakistan's Sindh province. The majority of the 49,000 schools in Sindh have one or two rooms, and 22 percent lack buildings altogether; thus, a portion of the project will be devoted to classroom expansion and school construction. There are limited and manageable environmental impacts; however, during the course of the project's environmental assessment three areas were identified to enhance the project's development impact: addressing the poor provision of drinking water and sanitation services, protecting against the high vulnerability to natural disasters such as earthquakes and floods, and enhancing school lighting and ventilation.

Students in Sindh often walk long distances to drink water. Wells in the area may also be contaminated with high levels of arsenic and fecal matter. At the project's inception, many schools had no latrines, and even those that did had only two, regardless of school size, posing a clear barrier for girls to attend school. Because of these environmental health concerns, the government is adopting low-cost water disinfection systems, water quality testing, improving design and siting of wells and pumps, and improving latrine provision and waste disposal. In the area of natural disasters, the environmental due diligence work assessed areas near fault lines and flood plains or other risk-prone areas, and recommended reinforcement, siting, design, and

²³ Management of Environment and Social Issues in Highway Projects in India. Sonia Chand Sandhu, et. Al. South Asia Environment and Social Unit (SASES), May 2006.

construction guidelines to mitigate such risks. As 80% of schools lack electricity services, the government has also focused on designing schools to increase natural exposure to sunlight and wind circulation, enhancing learning conditions.

In all of these countries, circumstances demand that attention be paid to environmental issues linked to sector reforms and investments. They highlight how Bank support can add value beyond financing alone, including advice, sustained engagement and joint learning, willingness to share knowledge beyond the immediate task, and combining instruments to reach policy and institutional objectives. Given pervasive capacity gaps and greater urgency of other development challenges, environmental mainstreaming is less likely to occur in low income countries than in MICs, although exceptions exist. The Pakistan case above, for example, shows that environmental safeguards can be an entry point for enhanced outcomes – in that case improved public health for children.

As described in the next section, client demand requires an institution with the organization and skills to respond with relevant and timely solutions to environmental mainstreaming challenges. The internal institutional context within the Bank plays an important role in sustaining the quality of service clients expect from the largest global development institution.

4. Internal Factors: Accountability, Incentives, Skills

The main findings regarding internal World Bank factors affecting implementation of the 2001 Strategy are that incentives which are driven from the corporate level are difficult to sustain. Attention to environmental objectives in sector strategies has grown organically from within in view of greater public awareness among clients and shareholders. Leadership attention at Sector Director level and below (as opposed to higher levels in senior management), alignment of resources with regional business plans, and sustained attention to skills renewal are key ingredients to support the Bank's ability to improve its environmental mainstreaming work.

The 2001 Strategy set out an ambitious action plan and recognized that institutional incentives such as budgets, reporting, and performance evaluation were weak to overcome the challenges of working on environmental issues, particularly when they require cross-sectoral work. Therefore, three main accountability and incentive measures were instituted: accountability to senior management and the Board of Directors; additional budget resources for Strategy implementation through the Mainstreaming Fund for Environment (MFE); and special recognition in the form of “green awards.” In addition, shifts in the institutional organization and refocusing of staff skills has played a key role in realigning the institution’s capacity to respond to cross-sectoral mainstreaming challenges.

Accountability and Incentive Measures

Accountability to Senior Management and the Board. Initially, the Strategy’s implementation was to be closely monitored at Managing Director level and, as with other sector strategies, progress reports were to be provided to the Bank’s Board. Two progress reports were produced and

submitted to the Managing Director; but by 2005, when leadership changes had taken place in both the Environment Department and Bank senior management, this formal feedback to senior management gradually diminished and eventually was lost. The initial good intentions of the then sole Managing Director to oversee and support progress were met with the difficult reality of too many other pressing responsibilities.

Reporting to the Board also shifted over time. To streamline documentation, progress reports on sector strategies were replaced by a summarized Sector Strategy Implementation Update (SSIU) with environment, forests, and water resources briefly featured in the last SSIU on December 20, 2007. In July 2008, the Board's Committee on Development Effectiveness (CODE) decided to replace the SSIU with a Results Monitoring and Reporting Platform and to focus on each sector when new strategies and mid-cycle evaluations are due (every 8-10 years, and 4-6 years, respectively).

The main lesson learned is that uniform attention from senior management and the Board on one of over twenty sector and thematic strategies is unrealistic. Under the current reporting framework, there is a once-in-every 4-6 year opportunity to seek Board guidance on overall strategic directions at the institutional level. Numerous opportunities exist for feedback on the application of these directions at the regional and country levels, when regional business strategies, CASs, IEG evaluations, major projects, and other important policies are brought to the Board table. However, a focused view of the whole strategic framework will only occur every 5 years or so.

Thus, a viable accountability mechanism should be aligned with existing practices of corporate and regional accountability and reporting. Ideally, the corporate strategy on environment should be consistent and should be reinforced by regional business strategies, and reporting would then reflect the same strategic objectives. The central Environment Department anchor's work program and the trust funds it mobilizes would complement regional business plans and help address global knowledge, corporate advocacy, portfolio monitoring, and other central functions. The question of how to create incentives to shift strategic direction arises when new strategies are developed. The experience of the MFE and more recently the initial development of climate change programs in the regions are useful in considering budgetary incentive measures.

Mainstreaming Fund for the Environment (MFE). The MFE was a \$1.6 million off-the-top allocation

Box 2: MFE Effectiveness

The Environment Department (ENV) reviewed the effectiveness of the MFE using analysis of MFE-funded tasks and user interviews. MFE was found to be useful in leveraging funding from country and sector management units, providing seed funding for new approaches and methodologies, and improving flexibility and response time. For examples of MFE contributions see "AAA in Environmental and Natural Resources Management. A Review of FY02-04 Activities". Acharya, et al. September 2005.

centrally distributed to the regional units to help provide seed funding for environmental work to complement country work program agreements (WPAs). Due to budget policy changes, the MFE and other centrally administered Bank funds were discontinued; regions were asked to continue funding MFE as part of their base budgets. While the impact of the

MFE was generally deemed positive (see Box 2), there were also concerns that the fund had

become unfocused and mostly driven by environment Sector Managers rather than the needs of other sectors. Over time, reporting to the Environment Department (ENV) became patchy and regional budget priorities shifted. Latin America and the Caribbean (LCR) was the only region that retained the MFE allocation (at much reduced level) until FY09. The lesson learned is that without sustained control of alignment between resources granted and strategic objectives, funding tends to be captured or dispersed, limiting its impact.

Green Awards. Green awards were designed as a visible recognition of staff and managers from other sectors who supported outstanding environmental work. The award ceremony has taken place for the past 9 years, normally chaired by the Bank's President, Managing Director, or the network Vice President. One Vice President, twenty Country Directors, a Sector Director, the General Services Department (GSD) Director, and 42 task teams have received Green Awards recognizing their efforts to support and promote outstanding environmental work in their areas of responsibilities. In particular, task teams have been distinguished for thorough safeguards work, innovation, and ability to enhance country capacity for environmental mainstreaming. It is difficult to gauge the perception of general staff regarding a special award as incentive for doing an above-average job on environmental issues; however, recipients have indicated that they appreciate and feel proud of the recognition.

Organizational Change

The diverse experience across regions points to key ingredients for more successful integration: a clear mandate, an accountable focal point, a dedicated budget, and leadership attention

The organizational requirements to improve the integration of environmental issues in other sector strategies and interventions have not been assessed systematically²⁴. Anecdotally, and by assessing the changing composition of the portfolio and AAA, and country CASs, it is evident that sector staff and management have growing awareness of these linkages. Constituencies within the sectors, including recognized professionals and public opinion tracking sector development, have influenced growing attention to environment linkages in sector strategies in recent years. Two clear examples are the energy and water management practices which embraced environmental sustainability over the past decade as an essential part of their respective business strategies (see *Annex 1*). Furthermore, collaboration across disciplines has strengthened since the 2007 integration of the Sustainable Development Network (SDN). The rise of climate change as a development issue has provided the integrated SDN with a good opportunity to test an organizational response (see Box 3). The SDN integration has provided opportunities for improved communication, sharing of staff, and collaboration between units working on environment, social, and rural development and the sector units formerly represented in the Infrastructure Vice Presidency (INF) focused on energy, water, urban, and transport. While the organizational change did not substantially change the internal structure,

²⁴ IEG's "Safeguards and Sustainability Policies in a Changing World. An Independent Evaluation of the World Bank Group Experience," forthcoming is a review of compliance safeguards policies (including the Environmental OP4.0 series) including organizational aspects. The implications for mainstreaming are included in a separate background paper.

the leadership of each Region and SDN Department (Director, Sector and/or Cluster/Sector Leaders, and Managers) used different tools to promote integration.

Box 3: Organizational Responses for Climate Change

The Strategic Framework on Development and Climate Change called for a World Bank Group response to the climate challenge across the organization. To enable better communication and coordination of its implementation, a Climate Change Management Group was established composed of managers and staff serving as focal points for the climate program in each unit and for feedback on strategic direction and day-to-day operational follow-up. Another mechanism to support implementation within regions are cross-unit climate teams, such as those set up in the Latin America and Caribbean (LCR) and Middle East and North Africa (MNA) Regions. These teams help prepare specific outputs, such as comments on the 2010 WDR, share knowledge, and coordinate regional climate work programs. In both regions, a point person was charged with coordinating the group and participating in the Climate Change Management Group, and was accountable to the Sustainable Development (SD) Director. The group received a dedicated budget, coordinated work programs, and helped shape requests for the new Climate Investment Funds (CIF). The groups drew staff from across SDN, and engaged with the Poverty Reduction and Economic Management (PREM) and Human Development (HD) networks on specific topics.

LCR, for example, created cross-thematic teams (sustainable development themes) that required inputs from various units to successfully meet the established objectives and deliver outputs on climate change, sustainable tourism, and water management. The Europe and Central Asia Region (ECA) eliminated sector unit fixed cost budgets, helping to reduce competition among units and enabling composition of task teams, with large participation of field-based staff, from across SDN units based on business and client service considerations. Sector leaders in the Africa Region (AFR) have played an important role in promoting sustainability in country programs and in meeting the challenge of ramping up infrastructure and agriculture lending with adequate treatment of social and environmental aspects.

Notwithstanding the above organizational improvements, a number of challenges remain to achieving a greater integration of environmental objectives into sector programs. The institution continues to reward unit level outputs rather than results on the ground (e.g., improved living conditions in a slum rather than a particular infrastructure investment project), with the latter requiring collaboration across the units. Another issue is that environmental safeguards work is often approached mechanistically to comply with a requirement rather than as a means to enhance the project's positive impacts. Finally, in some instances organizational changes may have missed opportunities to cause greater focus on sustainability issues, such as consolidating in a single unit water resources management with all subsectors (irrigation, water supply and sanitation) or testing in a single unit a territorial development approach integrating natural and human assets with production systems instead of the traditional urban and rural units.

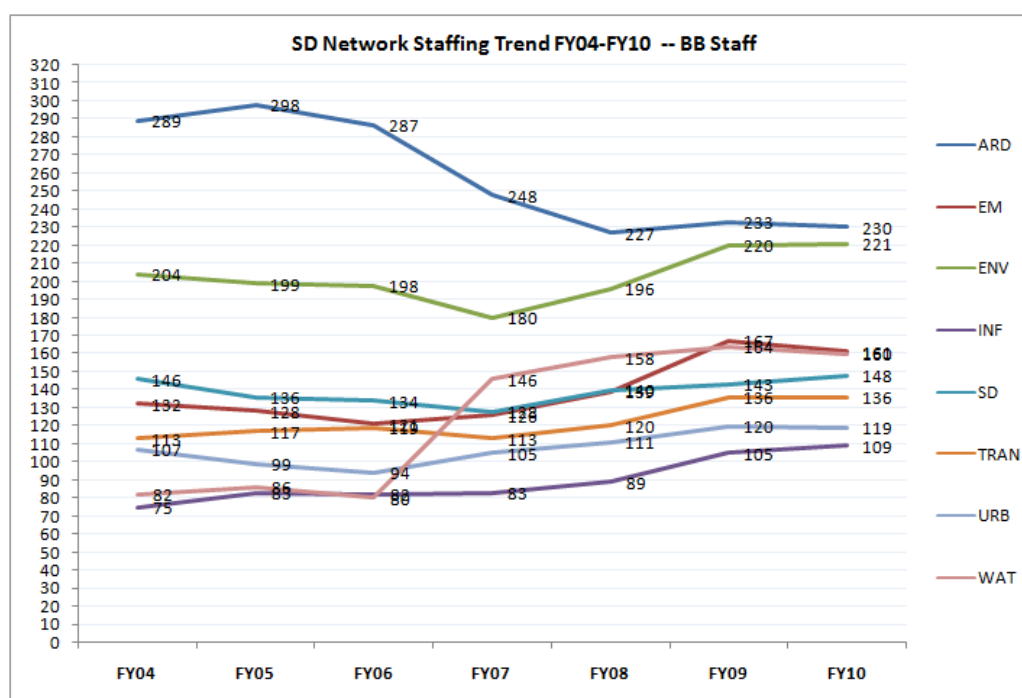
Staffing and Skills

Environment has the highest number of staff among SDN families (term/open-ended and co-term appointments) and sustaining skills in policy and institutional issues has proven useful for mainstreaming. Relatively less is known about the current status of technical skills, including skills for safeguards work.

Staffing represents between 70% and 80% of internal resources available to Bank units, and skills are the assets on which the institution depends to serve clients and remain competitive. The 2001 Strategy called for a stronger skill mix to help drive the mainstreaming agenda it put forward. The bulk of technical/policy skills reside with the environment “family”; however, the other sector families (notably ARD, WAT, and URB) have staff with relevant environmental skills as well. Since there has not been an inventory of environmental skills since 2005 (an update is due by year-end), the information provided here draws from the skills profile of 2005, data on staffing numbers, and inferences from recent staff recruitment.

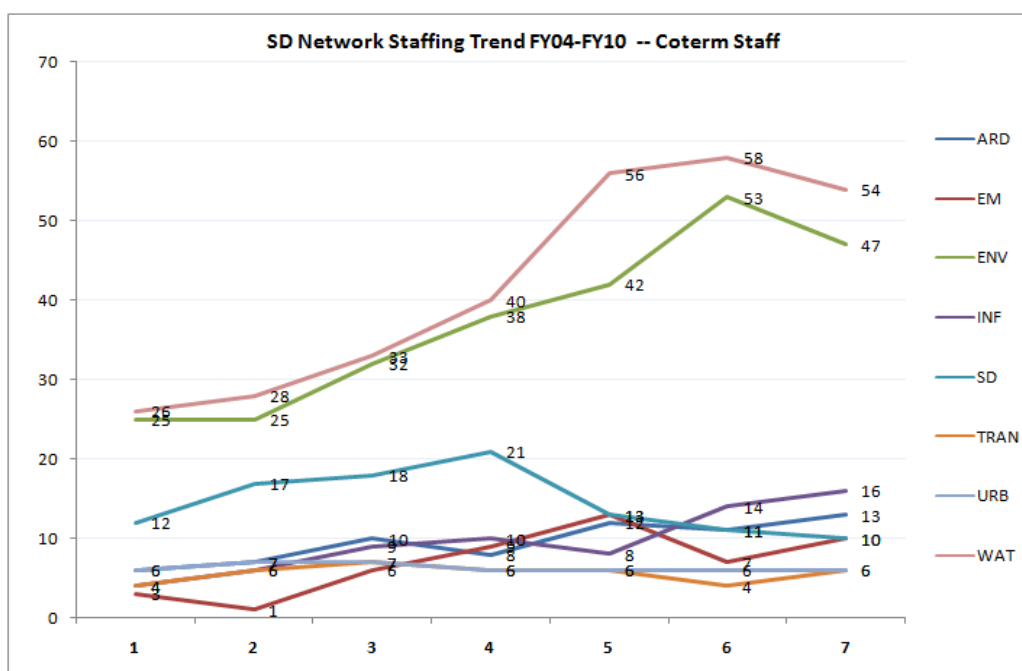
The environment-mapped staffing has grown faster than other SDN families in the past three years. The environment-mapped staffing has seen growth over the past three years in both regular (term or open-ended) and co-term (trust-funded) appointments. From a relatively stable trend at around 200 regular staff in FY04-06, a slight drop occurred in FY07, including the re-mapping of nine staff to the water family as this practice was consolidated. However, in FY08 the number of regular staff went back to about 200 and since then, another 10% increase has taken place bringing the total to 221 regular/term staff (counted as of end of October, 2009). As shown Figs. 5 and 6 below, the co-term (trust funded) staffing has almost doubled from the FY05 base of 25 positions to 47 staff in October 2009.

Figure 5: SD Network Staffing Trend FY04-10 -- BB Staff



Source: Human Resources data

Figure 6: SD Network Staffing Trend FY04-10 -- Co-term (trust funded) Staff



Source: Human Resources data

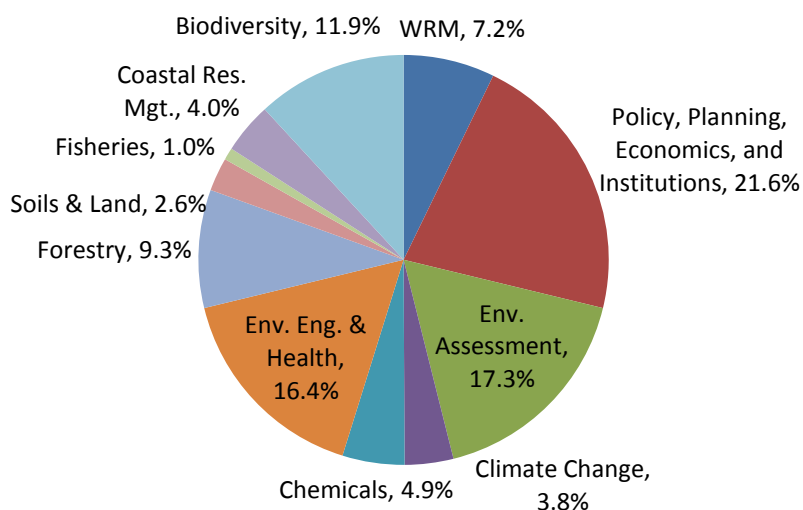
The growth in about 21 regular staff positions is due to an increase of about 9 positions in the anchor, 4 Young Professionals (YPs), and the remaining 8 positions in the Development Economics Vice Presidency (DEC) and some of the regions (SAR, ECA, LCR, and EAP). The new positions in the anchor respond mainly to the growth in the climate change program. The growth of 22 co-term staff is explained by an increase of 19 positions in the Carbon Finance Unit with the remaining three positions in the climate and other ENV units.

Environment staff is among the largest groups in SDN. Of the net staff increase in the SDN network as a whole (which includes 8 sector families, including Infrastructure (INF)), the ENV family accounts for the single largest share (38%) of new co-term positions, and for the second largest share (matched by energy and INF -- not counting water because it gained staff from other families) (19%) in regular staff positions. Even discounting GEF staff (13 positions in FY10), the family remains the largest in staffing terms.

A shift towards integrative and policy skills has helped mainstreaming. The 2001 Environment Strategy pointed to an increasing focus on cross-sectoral work and a shift in emphasis from project-level safeguards work toward integrated portfolio-level risk management and quality enhancement. The technical skill base was deemed adequate in areas such as natural resources management, biodiversity, environmental policy and planning; environmental engineering; and water resources management. While technical skills would remain important, a strategic shift towards integrating environmental considerations into macro-economic and sectoral planning called for new skills to enable participation in upstream analytical work and policy dialogue. Effective communications with country and sector teams would require environmental staff to develop knowledge in other areas, such as economics, health, rural development, etc.

Consequently, a shift in recruitment efforts took place, targeting economists and policy analysts, in order to create capacity to integrate across a wide range of development issues. By 2005, a skills inventory of approximately 200 staff (level GF and above) with primary mapping to the environment family revealed that staff with abilities to lead analytical work and upstream dialogue had reached 25% of the total skills assessed. The remaining 75% of skills assessed were in operational functions, either on own-managed work (33%) or in providing support to other projects (42%). The distribution of skills by thematic area is shown in Fig. 7. Expertise in policy, planning and institutions skills accounted for the larger share followed by environmental assessment, environmental health/engineering, forestry, water management, etc.

Figure 7: Distribution of Skills



Source: Based on 2005 Skills Inventory - primary skills only. Human Resources data

From 2005 to the present, excluding the Carbon Finance Unit, the environment family has seen a turn-over similar to the Bank average of about 7%. While a detailed skills inventory (such as the 2005 exercise) is planned, a preliminary analysis of exits and entries based on position titles shows that the number of economists (in all sub-disciplines, e.g., water resource economists, NRM economists, etc.) mapped to the environment family has held steady, at about 28-29 staff. The broad category of “environment specialists” has seen the largest growth relative to other titles; however, only a detailed skills analysis can disaggregate the areas of specialization. Nevertheless, recent hiring (particularly in the anchor) reflect growth in the number of climate change specialists, suggesting that the overall share is now much larger than the approximate 4% inventoried in FY05.

A direct association of the skills profile to the characteristics of work performed by each area of specialization is beyond the scope of this paper. However, it is evident that the shift to integrative and policy skills has helped maintain a steady volume of analytical work, contributed to the development of policy based lending, and helped influence other sector agendas. Trends in the degree of cross-support in all environmental disciplines with focus on safeguards work would merit a detailed assessment to determine the extent to which the positive results in mainstreaming have been the result of skills in the environment family or skills acquired within the respective sector families.

5. Recommendations for the 2010 Strategy

As presented in the preceding sections, Bank activities (financial and knowledge services) have increasingly introduced environmental content across sectors and there is evidence of incentives to work on complex environmental issues, such as climate change. Looking ahead, and recognizing the catalytic role that the environment practice has played over the last nine years, the following actions are recommended to guide the environmental sustainability agenda for the next decade:

- (a) **Develop a joint work program of sector environmental sustainability indicators and expand support to cross-sectoral themes.** The opportunities provided by the rapid increase of the climate change agenda across sectors and the efforts to measure the carbon intensity of sector development should not be missed to build other indicators linked to local environmental issues. Sector strategies have an initial set of indicators that could be improved. For example, defining meaningful environmental indicators for water supply and sanitation investments, including the economic and environmental justification for wastewater treatment in a site-specific context, requires close collaboration of water and environment specialists. Furthermore, support to existing cross-sectoral themes, such as those handled by the Pollution Management and Solid Waste thematic teams, should be reinvigorated. A few additional areas linking environment with other sectors could be selected for joint work programs, such as indoor air pollution with energy (alternative fuels and power) and rural development (reaching rural communities); systematic piloting of ecosystem valuation in productive landscapes with rural development; and, promoting “green” cities with urban development.
- (b) **Highlight good practice in safeguards work and its use as entry-point for mainstreaming.** Shift the emphasis on safeguards from compliance to a value-added approach. As the India and Pakistan examples showed, this means more actively managing the engagement on safeguards by intervening as upstream as possible and by investing in client capacity and skills renewal. Moving away from minimum safeguards compliance will require significant efforts to overcome barriers in the form of insufficient resources, inadequate skills, and deep-seated attitudes.
- (c) **Continue to improve the quality and effectiveness of core environmental work.** The past nine years have shown that good and timely analytical work coupled with better implementation of environmental projects have contributed to increased country capacity and demand for tackling the complexities of environmental issues in sector interventions. Thus, sustaining the focus on quality and relevance of the core environmental work is a fundamental ingredient to empower environmental advocates at the country level.
- (d) **Support resource mobilization and innovation in financing to achieve sector environmental sustainability goals.** This review has highlighted the strength of the human resource base working on environmental topics and the key role that financing, through

traditional trust funds and new financing instruments, has played in achieving environmental mainstreaming. The environment family should continue to catalyze enhancement of the facilities already in place (GEF, carbon finance, CIF, trust fund programs), contribute to fund-raising, and promote innovation in financing instruments.

6. How to operationalize these recommendations

Joint work programs with sectors

- Develop a joint work program with willing sectors to **help define or refine sector sustainability results indicators**. Building on existing indicators (see *Annex 1*), partner with sectors to help deepen data requirements and monitoring of improved indicators. These indicators could provide measures of resource efficiency per unit of sector output which could be proxies of pollution intensity and natural resource waste (e.g., fuels consumed per unit of freight hauled, water use per hectare of irrigated agriculture, tons of greenhouse gas emitted per unit of sector output) and measures of service expansion linked to environmental outcomes (e.g., percent wastewater treated discharging to sensitive water bodies, share of vehicle fleet under inspection and maintenance programs for emissions control, share of solid waste collected and adequately disposed, share of urban space with vulnerability mapping, share of population with improved water supply and sanitation services). Baseline and time series similar to those presented in the Bank's Little Green Data Book would be useful for comparative analysis across income groups and similar economic structures.
- **Agree on a few well-defined joint accountability targets with sectors and regions**. Not all targets that may appear important to the environment family will find the same appeal within regional business strategies or sector strategic objectives. A focused dialogue with concrete offers of resource matching would be needed to reach areas of shared strategic relevance and interest.
- **Catalyze financing innovation and partner with Sectors to conduct joint fund-raising** for the agreed target areas elements of the work programs addressing environmental sustainability. Re-invigorate collaboration with GEF and promote innovation in financing instruments aimed at supporting environmental sustainability goals at the sector level. This may include support for developing more instruments for climate finance, monetizing the value of environmental services through market creation and other means, and tapping financial markets to front-load environmental financing.
- **Invest in skills development, particularly for cross-thematic work**. As mentioned above, cross-thematic practices addressing environmental topics should be supported by enabling adequate functioning thematic groups (e.g., with designated budgets, visibility of output in various sector boards and weeks) and by developing structured learning programs. As a rapidly evolving field, staff needs opportunities to refresh skills, exchange experiences, and update technical knowledge. The environment family could offer to co-sponsor a few strategic thematic groups, or play a more active role in developing learning programs.

Value-Added Safeguards

- **Implement the recommendations of the IEG review** dealing with re-centralizing accountability for the quality of safeguards work to environment and social units. Increased management oversight would help not only in quality assurance, but in identifying opportunities for more structured and upstream engagement on safeguards with client countries.
- **Reinstate a work program in the anchor** for environmental safeguards with emphasis on learning and skills development, fundraising for upstream work and client capacity development, and follow-up to the IEG evaluation.
- Environmental units in regions should more explicitly **plan safeguards cross support** on the basis of guaranteed demand, and join the anchor in fund-raising to develop a work program on client capacity development.

Sustain Core Environment Work Quality

- Regions should **sustain selectivity and rigor in designing environmental projects** drawing from lessons of recent improvements in AAA and portfolio quality. Lessons from portfolio improvement efforts should be disseminated more broadly.
- **Anchor should strengthen portfolio monitoring function** with a strong focus on collaboration with sectors on the improved indicators mentioned above and close tracking of portfolio classification. Enhance learning program on good operational practices in project design and supervision in environmental components drawing from QAG, IEG, and other sources.

Annex 1: World Bank Group Sector Strategies and the Environment

This matrix selects sector strategic directions, business lines and illustrative indicators linked to environmental sustainability.

Environment-Relevant Strategic Principles	Associated Business Lines	Environment-related WBG Actions/Indicators ¹
“Water Resources Management Strategy: Mid-Cycle Implementation Progress Report”, FY10-13²		
Integrated water resource management/ development for sustainable water use and climate change mitigation/ adaptation Infrastructure for improved access	<ul style="list-style-type: none"> Integrated Water Resources Management Projects and AAA Sanitation and wastewater and reuse 	<ul style="list-style-type: none"> Water is a pillar of the new Environment Strategy³ Number/volume of water lending that is based on a water resource analysis done by government, Bank or agency. Number of water projects that address adaptation/climate variability. Adoption of a screening tool for water projects Number/volume of agriculture projects featuring water resources management Share of CASs/CPSs that include comprehensive water resource considerations (percent). Volume of sector investments with water resource management theme (\$ million). Number/volume of “integrated” water projects Number of Economic and Sector Work that adopts a comprehensive water framework or includes analysis of several water-using sectors. Volume of non-lending technical assistance for sanitation Volume of wastewater treatment, reuse and solid waste projects (IFC)
“Urban and Local Government Strategy: Systems of Cities – Harnessing Urbanization for Growth and Poverty Alleviation (FY10-14)⁴		
Promoting a safe and sustainable urban environment	<ul style="list-style-type: none"> Urban Environment, Climate Change and Disaster Management 	<ul style="list-style-type: none"> Standards adopted for urban form and infrastructure investments to promote environmental sustainability. City-level GHG Index⁵. Five-Cluster Analysis for Urban Environmental Management, including Eco-Management.⁶
“Transport Business Strategy for 2008-2012: <i>Safe, Clean, and Affordable...Transport for Development</i>”⁷		
Promote clean transport: Help mitigate transport’s contribution to “the health and environmental impact of vehicle emissions and the broader contribution of transport activities to climate change.” (Transport Strategy, Page 17)	<ul style="list-style-type: none"> Increase engagement in the urban transport subsector 	<ul style="list-style-type: none"> Incorporate the transport contribution to climate change into Bank policy agenda. Develop guidance note and policy paper⁸ Increase financial support for urban transport with emphasis on public transport and/or traffic management to support public transport. Mainstream assessing carbon footprint of transport operations. Develop methodology in coordination with other IFIs. AAA and country dialogue to address the need for building capacity in urban transport governance; enhancing the role and <u>quality of affordable public transport</u>; increasing financing mechanisms; mobilizing the private sector in the delivery of public services; <u>managing demand for private car travel</u>; <u>reducing vehicle emissions</u>; and <u>recognizing the needs of pedestrians and non-motorized transport forms</u>.

Environment-Relevant Strategic Principles	Associated Business Lines	Environment-related WBG Actions/Indicators ¹
“World Bank Group Agriculture Action Plan” (FY10-12)⁹		
Raise agricultural productivity Enhance environmental services and sustainability	<ul style="list-style-type: none"> Land security strengthened Livestock intensification, fisheries management, improving rangeland, watershed and forest management, and farmers access to carbon markets 	<ul style="list-style-type: none"> Raise awareness and capacity for improved fisheries governance and improved aquaculture management. Effective implementation ongoing programs in 25 countries. New programs in at least 10 countries. Support incorporation of forestry in post-Kyoto climate agreements; operationalize forest program to address drivers of deforestation and degradation; develop incentives for certification. Support recognition of soil carbon; strengthen capacity to trade agricultural carbon in developing countries.
“Energy Strategy Approach Paper”¹⁰		
Facilitating the shift to a more environmentally sustainable energy development: driven by resource as well as local and global environmental constraints—to transform the global energy market. For the WBG’s client countries, this will be facilitated by new and additional international financing to meet incremental costs, non-financial risks, and institutional and technical capacity needs (approach paper, Page 10)	<ul style="list-style-type: none"> Greater attention to end-use energy efficiency improvement and energy conservation—and increasing supply efficiency. Support countries in their efforts to shift to a low-GHG-intensity path Promote technology for global and local environmental sustainability Selectively support energy development projects in extractive industries where these contribute to sustainable development of communities and countries. Continue to be guided by the Management Response to the Extractive Industries Review. 	<ul style="list-style-type: none"> <i>“WBG will give priority to interventions with direct GHG reduction benefits such as (a) thermal power plant rehabilitation, (b) increasing the efficiency of new thermal power plants, (c) early retirement of inefficient plants and replacement with state-of-the-art facilities, and (d) gas flaring reduction (gas could be used for power generation)—as well as the specific agreed criteria with respect to coal”.</i>^{11/} To be developed To be developed To be developed

¹ Indicators are drawn from Results Annexes as footnoted or are stylized illustrations of indicators mentioned in approved sector strategy texts.

² World Bank Group. Mid-Cycle Implementation Progress Report for the Water Resources Sector Strategy. Outcomes and Way Forward. (March 8, 2010)

³ Ibid. Indicators directly drawn from Annex C.

⁴ The World Bank Urban and Local Government Strategy. Systems of Cities. Harnessing urbanization for growth and poverty alleviation. 2009.

⁵ Ibid. Table A-2.

⁶ Ibid. Page 34, para. 118. The five clusters include: urban household and workplace environmental health challenges; city environmental challenges; city eco-systems challenges (interaction between cities and their physical regions); disaster risks to city systems; and cities and global environmental challenges. Eco² Cities is a new World Bank Program combining energy efficiency design with environmentally sound technologies supporting holistic planning and long-term investment.

⁷ Safe, Clean, and Affordable Transport for Development. The World Bank Group's Transport Business Strategy for 2008-2012.

⁸ Ibid. Table 6-6E. Strategic Direction 5. Transport and climate change – control emissions and mitigate impacts.

⁹ World Bank Group Agriculture Action Plan (FY10-12). Results Framework.

¹⁰ The World Bank Group. Energy Strategy Approach Paper. Sustainable Development Network. October 2009.

¹¹ Ibid. Page 11, para.32 of Energy Strategy Approach Paper.

Annex 2: ENRM Portfolio Analysis

The World Bank's "Business Warehouse" information system allows Task Managers to code operations into two exclusive dimensions: 10 sectors and 11 themes. One of the themes is "Environment and Natural Resources Management - ENRM", which in turn consists of seven subthemes (biodiversity, climate change, environmental policies and institutions, land management, pollution management and environmental health, water resources management, and other environmental and natural resources management). A project is therefore, both, classified into sectors and themes – up to five each -- according to Task Managers views of project content. Up until FY08, the system automatically apportioned commitments proportionally depending of the number of themes selected. For example, a project with three themes would have 33.33% of its commitments allocated to each theme. Beginning in FY09, TTLs could assign a given percentage of commitment to subthemes.

Aiming at testing the robustness of the coding system in depicting actual thematic content, a selective review of project appraisal documents (PADs) was conducted using the following methodology:

1. The time series of commitments allocated to ENRM themes was extracted from business warehouse and classified between projects mapped to the environment (ENV) sector board and projects classified to all other sector boards (SB). As shown below, the ENV SB accounted for \$6.7 billion of the total \$9.8 billion throughout the series (this includes all Bank product lines, i.e. IBRD, IDA, GEF, Carbon Finance, etc.). The breakdown by SB is also provided below.

ENRM Commitments of Core Projects

Sector Board	2002	2003	2004	2005	2006	2007	2008	2009	Grand Total
ENV	39	300	88	825	1,506	276	720	3,004	6,759
Other SB	54	63	212	354	214	531	919	733	3,080
Total	93	363	301	1,178	1,720	807	1,639	3,737	9,839

Sector Board	2002	2003	2004	2005	2006	2007	2008	2009	Grand Total
ARD	43	25	98	148	144	132	86	233	908
EMT		24	29	60	11	58	409	309	899
ENV	39	300	88	825	506	276	720	3,004	6,759
FPD			19	14				11	45
GIC								-	-
PS					1				1
SDV			8	-					8
SP		10							10
TR			6			8	7		20
UD			7			10	216	48	282
WAT	11	4	45	132	58	324	201	133	907
Total	93	363	301	1,178	1,720	807	1,639	3,737	9,839

Note on Acronyms: ENV (environment); ARD (agriculture and rural development); (EMT) energy; FPD (financed and private sector development); (GIC) global telecommunications; PS (public sector management); SDV (social development); SP (social protection); TR (transport); UD (urban development); and (WAT) water (WAT).

2. Since the commitments mapped to the ENVSB (\$6.76 billion above) are primarily about addressing environmental objectives, they were excluded from the analysis. To further narrow the analysis, the review focused on the \$3.08 billion in the remaining SBs, and within these, only on \$2.06 billion in IBRD/IDA commitments, thus excluding other product lines (GEF, Carbon Finance, etc.) since these are mainly financing environmental components. The resulting IBRD/IDA commitments by the main Sector Boards are presented below.

Core ENRM projects mapped to other Sector Boards

	ENRM Comm	Total Comm Amt	Non ENRM Comm Amt
Carbon Offset	368	384	16
GEF	485	587	102
GEF Med Size	10	11	1
IBRD/IDA	2,056	2,464	408
IDF	-	-	-
Rainforest	7	7	0
Recipient Executed A	131	137	7
SN	-	-	-
Special Finc.	23	32	9
Grand Total	3,080	3,622	542

Core ENRM projects mapped to ENV Sector Board

	ENRM Comm	Total Comm Amt	Non ENRM Comm Amt
Carbon Offset	1,019	1,027	7
GEF	483	556	73
GEF Med Size	25	27	2
IBRD/IDA	5,117	5,401	284
IDF	-	-	-
Rainforest	9	9	0
Recipient Executed A	54	58	4
Montreal Prot	49	49	-
Special Finc.	1	2	1
Grand Total	6,759	7,129	371

3. The projects accounting for largest IBRD/IDA commitments in each sector boards were selected for a detailed desk review of the corresponding PADs. As shown below, these projects accounted for 74% of the total commitments for the corresponding sector boards. Assessing the actual content and costing of each component and then, contrasting to the commitment derived from the coding system allowed for accepting or correcting a derived ENRM commitment amount. The results of the detailed PAD review are summarized after item 6 below and the project review sheets are contained in the pages appended to this annex.

Sector Board	Total IBRD/IDA ENRM Comm (\$m)	Analyzed ENRM Comm (\$m)	% Analyzed
ARD	694	258	37%
EMT	346	330	95%
UD	232	232	100%
WAT	775	691	89%
Subtotal	2,046	1,511	74%

Note: The difference of \$10 million between the above subtotal and the \$2,056 figure presented under item 2 above is due to a project under the social protection SB which was not included in the sample.

4. The results of the analysis are shown below. The projects with the largest “overstatement”, that is discrepancy between the commitments derived from the detailed PAD review and those provided by the coding system were in ARD, particularly because land administration-- a subtheme known to produce this distortion (since land administration projects are primarily about cadastre, administrative systems, etc. and not about physical aspects of land management). A large number of energy projects deal with renewable energy, climate change policy, and energy efficiency issues – all of which are considered accurate in depicting an environmental motivation. Water projects primarily addressed water quality issues, but when water supply subcomponents were included in ENRM commitments, these were discounted. Urban projects tend to cover more than one theme (expand urban services, waste management) which the system treats as mutually exclusive, but are in reality are complementary; and, therefore are treated as necessary to achieve the environmental goals. Double counting is not a concern for the purpose of these analysis since the attempt is to define how much of Bank commitments are allocated to achieve environmental outcomes irrespective of the fact that a single dollar can meet more than one goal (e.g., in strengthening institutions to meet multipurpose programs).

5. From the figures shown below, the analysis concludes that of the ENRM commitments from ARD, EMT, UD, and WAT, approximately 7.8% are overstating actual amount allocated in project components in those sectors.

Sector Board	ENRM Comm from Coding (\$m)	ENRM Comm from PAD Review (\$m)	Percent Over-statement
ARD	258	162	37.2%
EMT	330	330	0.0%
UD	232	250	-7.8%
WAT	691	651	5.7%
SubTotal	1,511	1393	7.8%

6. Extrapolating this 7.8% share to all ENRM commitments (i.e. applying this 7.8% to the \$2.06 billion of total ENRM IBRD/IDA commitments), we derive an estimated overstatement of \$160 million. To calculate the overall share of overstatement we divide this \$160 million by the sum of \$5.12 billion in ENVSB IBRD/IDA commitments (assumed to be 100% about environmental objectives²⁵) and \$2.06 billion of IBRD/IDA commitments from the other sector boards. The resulting discrepancy is only 2.2%. The conclusion is that the coding system is by and large robust in presenting the composition of the environmental portfolio.

²⁵In fact, a share of ENVSB commitments were coded to non-ENRM themes (namely \$284 million as shown in the table under item 2) such as, expanding urban services, stakeholder inclusion, etc. which are complementary to environmental goals and could have been counted as ENRM commitments. They were not accounted for to keep the results on the conservative side.

Summary Table of Projects Reviewed

(Figures rounded to the nearest USD million)

Energy and Mining Sector Board

PO#	Project Name	IBRD/IDA Loan Amount	ENRM Amount	Amount from PAD Review
P084874	China - Energy Efficiency Project	200	200	200
P093882	China - Shandong Flue Gas Desulfurization	50	50	50
P100968	China - Shanxi Coal Bed Methane Development	80	80	80
Total		330	330	330

Urban Development Sector Board

PO#	Project Name	IBRD/IDA Loan Amount	ENRM Amount	Amount from PAD Review
P096925	China - Bengbu Integrated Environment Improvement	100	80	90
P104985	Azerbaijan - Contaminated Sites Rehabilitation	75	75	75
P110682	Azerbaijan - Large Scale Oil Polluted Land Clean Up	60	60	60
P104960	Jordan - Amman Solid Waste Management	25	18	25
Total		260	233	250

Water Sector Board

PO#	Project Name	IBRD/IDA Loan Amount	ENRM Amount	Amount from PAD Review
P077752	China - Shandong Environment 2	147	147	129
P081776	China - Guangdong/PRD 2	96	64	96
P093461	Montenegro - Sustainable Tourism Development	10	7	2
P099811	Tunisia - Tunis West Sewerage	67	50	33
P105270	Serbia - Irrigation and Drainage Additional Financing	49	33	49
P086505	China - Ningbo Water and Environment	130	104	62
P093491	Argentina - Urban Flood Prevention and Drainage	70	58	57
P093806	Africa - Niger Basin Water Resources	186	140	135
P102732	Croatia - Coastal Cities Pollution Control 2	88	88	88
Total		843	691	651

Agriculture and Rural Development Sector Board

PO#	Project Name	IBRD/IDA Loan Amount	ENRM Amount	Amount from PAD Review
P096418	Vietnam - Land Administration Project	75	75	0
P081255	Changjiang/Pearl River Watershed Rehabilitation	100	67	96
P088964	China - Guangxi Integrated Forestry Development	100	66	16
P096532	Indonesia - Dam Operational Improvement	50	50	50
Total		325	258	162

Core IBRD/IDA ENRM projects mapped to other sector boards

Energy and Mining Sector Board

China (P084874)	Project Name: Energy Efficiency Financing	Total Project Cost: US\$ 593.6	IBRD/IDA Loan Amount: US\$ 200
Sector Board: Energy and Mining		Theme codes: Climate change 100%	
Objectives: The objective of the Energy Efficiency Financing Project is to improve the energy efficiency of medium and large-sized industrial enterprises in China, and thereby reduce their adverse environmental impacts on climate.			
Component 1: Promotion of Energy Efficiency Financing: The proposed activities will address key barriers to developing energy conservation financing businesses in the domestic banking sector, primarily for medium and large-sized industrial energy conservation investments.			100% ENRM
Component 2: Energy Conservation Investment Lending			100% ENRM
Component 3: National Policy Support and Capacity Building: This component will strengthen the government’s capabilities to implement industrial energy efficiency policies and programs.			100% ENRM
Component 4: Project Implementation Support, Monitoring and Reporting			100% ENRM
ENRM Content from Coding System			US\$ 200
ENRM Content from PAD			US\$ 200

China (P093882)	Project Name: Shandong Flue Gas Desulfurization	Total Project Cost: US\$ 86.14	IBRD/IDA Loan Amount: US\$ 50
Sector Board: Energy and Mining		Theme codes: Pollution management and environmental health 67%, Environmental policies and institutions 33%	
Objectives: The objective of the Shandong Power Plant Flue Gas Desulfurization Project for China is to reduce Sulfur Dioxide (SO2) emissions in the heat and power sector and enhance the capacity of regulatory authorities to monitor and enforce compliance with their SO2 emissions reduction program.			
Component 1: Technical Assistance Component (US\$2.28 million) is intended to strengthen the technical and institutional capacity related to SO2 emission control and reduction, particularly in the following areas: emission control planning, emission monitoring and regulation enforcement, technical and managerial training, installation of online monitoring equipment. The component would include both studies and capacity building activities.			100% ENRM
Component 2: Investment Component (US\$74.955 million): The investment component is to finance the installation of FGD facilities in four coal-fired heat and power plants that are currently operating or are under (or planned for) construction.			100% ENRM
ENRM Content from Coding System			US\$ 50
ENRM Content from PAD			US\$ 50

China (P100968)	Project Name: Shanxi Coal Bed Methane Development	Total Project Cost: US\$ 204.3	IBRD/IDA Loan Amount: US\$ 80
Sector Board: Energy and Mining		Theme codes: Climate change 70%, Pollution mgmt and environmental health 30%	
Objectives: The development objective is to increase the production and utilization of CBM/CMM to replace coal as a fuel for thermal use and to reduce GHGs and local air pollutants associated with coal combustion.			
Component 1: Investment Component (base cost US\$178.6 million) to finance the exploration and development of CBM wells and construction of a Liquefied Natural Gas plant			100% ENRM
Component 2: Technical Assistance Component (base cost US\$1.7 million), which includes two sub-components: (i) a program to assist the project entity in developing its capacity to construct and operate the facilities efficiently and safely, and to expand business activities in the area of CBM/CMM development to achieve long term financial sustainability; and (ii) a program to assist the key stakeholders in Shanxi Province to enhance their institutional and technical capacities for policy making and implementation to scale up the CBM/CMM industry in Shanxi.			100% ENRM
ENRM Content from Coding System			US\$ 80
ENRM Content from PAD			US\$ 80

Urban Development Sector Board

China (P096925)	Project Name: Bengbu Integrated Environment Improvement	Total Project Cost: US\$ 224.63	IBRD/IDA Loan Amount: US\$ 100
Sector Board: Urban Development		Theme codes: Pollution management and environmental health 40%, Water resource management 40%, Other urban development 20%	
Objectives: The objectives of Bengbu Integrated Environment Improvement Project for China is to improve the effectiveness and sustainability of selected urban environmental services delivered in Bengbu Municipality through improving water supply, reducing incidents of land submergence from flooding, and enhancing wastewater management.			
Component 1: Comprehensive Water Resources Management (US\$27.39 million): (a) Tianhe Lake Water Resources Management: construction of a pumping station to manage floods and increase storage capacity of Tianhe Lake; and (b) Lonnzi Lake Flood Management, Ecological Improvements and Restoration: construction of a flood discharge pumping station at the Longzi outfall for flood management, and lake embankment improvement for erosion control and ecological restoration			100% ENRM
Component 2: Urban Environmental Infrastructure Improvement (US\$109.09 million): (a) Bengbu City Proper (south of the Huai River): storm drainage facilities in the old city area, High Tech Development Zone (HTDZ), Economic Development Zone (EDZ), and Longzi Lake District, reconstruction of Xinchuantang and Nanshijia storm drainage pumping stations, and rehabilitation of Zhi Huai Road storm drainage pumping station; and (b) Huaishang District (north of the Huai River): construction of storm drainage networks, three flood discharge pumping stations, wastewater collection networks (including a pipeline to transfer wastewater from Huaiyuan County to Huaishang District for treatment), roads, and desilting of drainage canals			Component 2 and 3 finance activities related to flood prevention and drainage, but the component also includes roads. 10% from sector coding (TA: roads & highways) was discounted from ENRM contents.
Component 3: Sub-urban Environmental Infrastructure Improvement (US\$66.84 million): (a) Guzhen County: construction of storm drainage networks, wastewater networks, roads, and desilting of drainage canals; (b) Huaivuan County: construction of storm drainage networks, two storm drainage pumping stations, roads, and desilting and rehabilitation of three flood retention basins and a drainage canal; and (c) Wuhe County (Mohekou Industrial Zone (MIZ) and Township): construction of a water supply intake, treatment plant, transmission and distribution networks, an industrial wastewater treatment plant (WWTP) and collection networks, storm drainage networks, a flood discharge pumping station including a detention storage basin, facilities for containing first flush flows and accidental spills, desilting drainage canals, and roads			
Component 4: Institutional Development and Capacity Building (US\$6.87 million)			100% ENRM
ENRM Content from Coding System			US\$ 80
ENRM Content from PAD			US\$ 90

Azerbaijan (P104985)	Project Name: Contaminated Sites Rehabilitation	Total Project Cost: US\$ 99	IBRD/IDA Loan Amount: US\$ 75
Sector Board: Urban Development		Theme codes: Pollution management and environmental health 67%, Environmental policies and institutions 33%	
Objectives: The objective is to support the Environmental State Program (ESP) to curtail environmental degradation in the Absheron Peninsular, by assisting in decontamination of former iodine production sites and the development of a strategy for remediation/containment of Naturally Occurring Radioactive Materials (NORM) contaminated sites. The project will also support in developing institutional capacity for the cleanup of former oil production sites and for developing rehabilitation and redevelopment plans for a specific oil production site.			
Component 1: Cleanup and rehabilitation of two former iodine sites (US\$12.15 million): This component will develop immediate cleanup activities to decontaminate two former iodine production sites in Surakhani and Ramani. Site contamination includes radioactive materials that pose serious exposure hazards for the increasingly dense housing development surrounding the sites. Radioactive dust particles affect a much larger area. Decontamination should consider future land use.			100% ENRM
Component 2: Construction of a dedicated NORM storage facility (US\$23.70 million): Azerbaijan has no facility to safely store or dispose o f NORM. This component will finance development and construction of a dedicated facility to store radioactive waste from the two former iodine sites to be decontaminated under Component 1, and NORM from former oil production sites.			100% ENRM
Component 3: National Mapping and Remediation Program for NORM Contaminated -Sites (US\$11.0 million): This component will enable MES to execute an extensive national-level survey to map NORM-contaminated sites and investigate them to determine contamination levels, priorities, and remediation or containment actions to produce a national phased mitigation program. This component includes US\$5.0 million for high-priority NORM contamination cleanup operations that will be selected during the national mapping and planning activities and will incorporate lessons learned during the cleanup of the iodine sites.			100% ENRM
Component 4: Component 4: Remediation Program for the 1,000 ha site (US\$22.0 million): The objective would be to develop efficient approaches for remediation and returning to alternative productive reuse of polluted former oil production sites by a comprehensive plan and partially cleaning-up approximately 1,000 hectares of oil polluted land with 350 wells between the Buzovni and Mashtagi settlements.			100% ENRM
ENRM Content from Coding System			US\$ 75
ENRM Content from PAD			US\$ 75

Azerbaijan (P110682)	Project Name: Large Scale Oil Polluted Land Cleaning	Total Project Cost: US\$ 184	IBRD/IDA Loan Amount: US\$ 60
Sector Board: Urban Development		Theme codes: Pollution management and environmental health 100%	
Objectives: The Third ARP/Large Scale Oil Polluted Land Cleanup Project for Azerbaijan development objective is to improve: (i) State Oil Company of Azerbaijan Republic (SOCAR) capacity and effectiveness in environmental management and in cleaning up of oil polluted land in the Absheron Peninsula; and (ii) the quality of soil conditions in oil polluted lands cleaned up under the project. This project is one of several operations which the Bank will finance to support environmental cleanup activities in the Absheron Peninsula of Azerbaijan.			
Component 1: Large scale oil contaminated land clean-up: This component will finance the purchase of multiple units of semi-mobile soil washing equipment and provide technical assistance to SOCAR with the goal of cleaning up approximately 1,000 - 2,000 ha of oil polluted land(Total cost is US\$166.02 million including VAT, of which US\$53.44 million from IBRD).			100% ENRM
Component 2: Monitoring, communication, and public outreach: This component will finance independent monitoring and supervision to the clean-up operation, and promote public awareness of environmental clean-up challenges and activities supported by the project (Total cost is US\$1.50 million including VAT, of which US\$0.94 million from IBRD).			100% ENRM
Component 3: Operational costs and project management			100% ENRM
ENRM Content from Coding System			US\$ 60
ENRM Content from PAD			US\$ 60

Jordan (P104960)	Project Name: Amman Solid Waste Management	Total Project Cost: US\$ 40.5	IBRD/IDA Loan Amount: US\$ 25
Sector Board: Urban Development		Theme codes: Pollution management and environmental health 70%, Other urban development 30%	
Objectives: The objective is to strengthen the operational, financial, and environmental performance of Municipal Solid Waste Management (MSWM) in Amman.			
Component 1: Institutional Strengthening and Capacity Development (US\$1.8 million): This component will finance technical assistance and capacity-building activities benefiting GAM departments involved in the planning, development, operation, and evaluation of MSW services.			100% ENRM. Project's primary objective is to meet Jordan's environmental sustainability goals by improving infrastructure for solid waste management.
Component 2: Infrastructure Development (US\$34.1 million): Component 2 includes three subcomponents aimed at improving the cost recovery and effectiveness of disposal and transfer, management strengthening and capacity expansion of the existing landfill, and using LFG to generate electricity.			
Component 3: Project Management (US\$0.6 million): Component 3 will finance necessary technical assistance to the Project Management Unit (PMU)			
ENRM Content from Coding System			US\$ 18
ENRM Content from PAD			US\$ 25

Water Sector Board

China (P077752)	Project Name: Shandong Environment 2	Total Project Cost: US\$ 281.11	IBRD/IDA Loan Amount: US\$ 147
Sector Board: Water		Theme codes: Pollution management and environmental health 67%, Water resource management 33%	
Objectives: The objective is to improve the environmental conditions in participating municipalities and counties through a package of priority interventions including upgrading and development of waste water collection and treatment facilities, river embankment rehabilitation, solid waste management, water supply improvements, industrial pollution monitoring, and enhancement of the financial performance and efficiency of key urban environmental service agencies.			
Component 1: Wastewater Management (US\$206.9 million): Component includes construction of wastewater collection systems, treatment plants, treated effluent re-use facilities, pilot septic tanks management and associated river improvements.			100% ENRM
Component 2: Solid Waste Management (US\$24.3 million)			100% ENRM
Component 3: Water Supply Management (US\$34.6 million)			Component 3: Water Supply Management is aimed to increase service coverage and is therefore subtracted from ENRM commitments.
Component 4: Institutional Development and Capacity Building (US\$4.5 million)			100% ENRM
ENRM Content from Coding System			US\$ 147
ENRM Content from PAD			US\$ 129

China (P081776)	Project Name: Guangdong/PRD 2	Total Project Cost: US\$ 187.9	IBRD/IDA Loan Amount: US\$ 96
Sector Board: Water		Theme codes: Pollution management and environmental health 33%, Access to urban services and housing 33%, Water resource management 17%, Environmental policies and institutions 17%	
Objectives: The development objective is to reduce water pollution in the Pearl River system originating from Foshan and Jiangmen municipalities through a package of key initiatives, including wastewater treatment and sludge disposal, water quality monitoring, sediment removal from waterways, and flood protection and river embankment improvements.			
Component 1: Foshan Components :(a) Wastewater Management. Expansion of Zhen’an wastewater treatment plant,(b) Sludge Treatment and Disposal. Construction of a 400 tons/day capacity centralized sludge treatment and disposal facility,(c) Flood Protection and Embankment Rehabilitation, (d) River Water Quality Improvement. (e) Institutional Strengthening and Training (US\$72million from Bank loan)			100% ENRM. All components are related to infrastructure improvements addressing water quality issues.
Component 2: Jiangmen Components :(f) Wastewater Management. Expansion of Wen Cheng Sha wastewater treatment plant; construction of interceptors, secondary sewers, pumping stations; and improvements in the water quality monitoring system. (g) Institutional Strengthening and Training (US\$24million from Bank loan)			
ENRM Content from Coding System			US\$ 64
ENRM Content from PAD			US\$ 96

Montenegro (P093461)	Project Name: Sustainable Tourism Development	Total Project Cost: US\$ 41.1	IBRD/IDA Loan Amount: US\$ 10
Sector Board: Water		Theme codes: Water resource management 29%, Access to urban services and housing 29%, Pollution management and environmental health 14%, Environmental policies and institutions 14%, Biodiversity 14%	
Objectives: The project will assist Montenegro in better designing and implementing an integrated coastal zone management approach to reduce coastal degradation and at the same time foster environmentally sound tourism development.			
Component 1: Integrated coastal zone management policy and institutional capacity building will finance improvements in land-use planning and protection to guard against uncontrolled construction and development (US\$2.1million).			100% ENRM
Component 2: Coastal environmental infrastructure component will finance investments for the continental and southern part of the regional water supply scheme to provide water from Lake Skadar to the Municipality of Bar (US\$34.8million).			Component 2, Regional Water Supply Scheme, is deducted.
Component 3: Project Management (US\$0.5million)			100% ENRM
Component 4:			
ENRM Content from Coding System			US\$ 7
ENRM Content from PAD			US\$ 2

Tunisia (P099811)	Project Name: Tunis West Sewerage	Total Project Cost: US\$ 71.9	IBRD/IDA Loan Amount: US\$ 67
Sector Board: Water		Theme codes: Pollution management and environmental health 50%, Water resource management 25%, Other urban development 25%	
Objectives: The Tunis West Sewerage Project for Tunisia will help achieve the following objectives: (1) Improve the quality of sanitation services in Greater Tunis, and preserve the achievements of the sector; (2) promote the reuse of treated wastewater in irrigation on a sustainable basis and in significant quantities; and (3) enhance ONAS performance through financial and operational management capacity building. The project combines sewerage and institutional building components.			
Component 1: The sewerage component includes building: a) a waste water treatment plant in El Attar in the western part of Great Tunis. b) a system of mains and pumping stations to transfer raw sewage to the treatment plant; and c) a system of mains to transfer treated sewage to Oued Meliane with valves for connection to irrigation basins; and d) technical assistance for construction supervision.			One of the objectives is to improve the quality of sanitation services, so half of the commitments were deducted.
Component 2: The institutional building component includes: a) strengthening of the National Sewerage Board (ONAS) financial management; b) environmental management of the Project, including mitigation measure for sludge disposal; c) the preparation of strategic technico-economic studies for sanitation; and d) the establishment of a customer’s management system.			
ENRM Content from Coding System			US\$ 50
ENRM Content from PAD			US\$ 33

Serbia (P105270)	Project Name: Irrigation and Drainage Additional Financing	Total Project Cost: US\$ 62.5	IBRD/IDA Loan Amount: US\$ 49
Sector Board: Water		Theme codes: Water resource management 67%, Natural disaster management 33%	
Objectives: The Additional Financing would scale-up the flood protection activities under IDRP to generate a substantial impact in terms of losses avoided by the end of the project. The incremental activities would fall entirely under the original second objective of the project, to "reduce the risk of damage from flooding to land, crops, property, and infrastructure as well as reducing risk of life loss from flooding in project areas".			
Component 1: Rehabilitation and Improvement of Drainage and Flood Control Infrastructure – scale-up activities would include: upgrading and improvement as well as rehabilitation works (about 80 small works) that affects major (e.g., Danube, Tisaza, Sava, Tamis) as well as smaller rivers and are more in the nature of emergency repair taking care of major landslides, culvert collapses, rebuilding retaining walls, and structures guiding and regulating flows. The upgrading and improvement program also includes rebuilding or protection of pump stations, embankment foundations as well as crests, and rehabilitation of embankments; and (ii) reconstruction works consisting of larger, continuous efforts along the four major streams - the Danube, Tisza, Tamis, and Sava - and strengthening about 89 km of flood defenses.			100% ENRM (water resources management), but it overlaps with another thematic category (i.e. natural disaster management)
Component 2: Consultant Services: This component will finance consulting services for designs for additional flood control rehabilitation works envisaged under the Additional Financing.			100% ENRM
Component 3: Project Management and Monitoring			100% ENRM
ENRM Content from Coding System			US\$ 33
ENRM Content from PAD			US\$ 49

China (P086505)	Project Name: Ningbo Water and Environment	Total Project Cost: US\$ 291.3	IBRD/IDA Loan Amount: US\$ 130
Sector Board: Water		Theme codes: Pollution management and environmental health 40%, Water resource management 40%, Municipal governance and institution building 20%	
Objectives: The Project will facilitate the expansion and quality of water and wastewater services in Ningbo City and Cixi City in an economically efficient and environmentally sustainable manner, thereby protecting public health, improving the environment, and supporting economic growth.			
Component 1: Ningbo Water Supply (IBRD-US\$67.3 million): The component includes: (i) raw water supply line consisting of an intake tower in Jiaokou reservoir and a 9.6 km tunnel; (ii)500,000 m3/d Maojiaping water treatment plant; and (iii)treated water transmission pipes, including a new 47 km ring main around Ningbo City, and 29 kms of transmission pipes from Maojiaping water treatment plant to the new ring main. The component is a significant part of Ningbo’s overall plan to service the entire city, improve water quality by accessing new water sources and upgrade water treatment, and enhance distribution system reliability and flexibility.			Component 1: Ningbo water supply was deducted.
Component 2: Cixi Wastewater (IBRD-US\$57.9 million): The component includes: (i) two wastewater treatment plants, one located in the north of City (100,000 m3/d) and one in the east (50,000 m3/d); and (ii)associated collection system mains and link sewers (230 km of pipe and 58 pump stations). The component will provide comprehensive wastewater services for all urban areas in Cixi City, and help protect Hangzhou Bay.			100% ENRM (Treatment of wastewater contributes to reducing pollution loads to Hangzhou Bay).
Component 3: Institutional Development (IBRD-US\$4.1 million): Technical assistance will be provided to improve water planning, utility price and service regulation, and enhance NWSC and CMSC operational and business management capacities. Design review and construction management technical assistance will also be provided to ensure smooth implementation of the infrastructure works.			Half of the commitments of Component 3 were deducted as the activity is related to institutional development of municipal government agencies.
ENRM Content from Coding System			US\$ 104
ENRM Content from PAD			US\$ 62

Argentina (P093491)	Project Name: Urban Flood Prevention and Drainage	Total Project Cost: US\$ 91.57	IBRD/IDA Loan Amount: US\$ 70
Sector Board: Water		Theme codes: Biodiversity 33%, Land administration and management 33%, Water resource management 17%, Improving labor market 17%	
Objectives: The program will develop a risk reduction framework to increase economic resilience to flooding. It will help reduce the vulnerability of Argentina to flooding, through a mix of structural and non-structural measures. The APL is horizontal and will assist the City of Buenos Aires (phase 1) and provinces subject to flooding (phase 2).			
Component 1: Institutional Strengthening (US\$2.77 million): The component is aimed at providing the provincial institutions with flood risk reduction instruments.			100% ENRM
Component 2: Improving Flood Preparedness (US\$12.51million): For vulnerable areas not benefiting from further investment in structural defenses, the component would provide improved housing in safe areas for lower income families living in flood prone areas. It would also provide housing for those that may be resettled from the lands required for the works.			Component 2 was deducted. The project overlaps with another thematic category (natural disaster management).
Component 3: Development of Key Defense Facilities (US\$ 52.15 million): This component would finance works to protect important urban areas against flood effects.			100% ENRM
Component 4: Project Implementation and Administration (US\$2.39 million)			100% ENRM
ENRM Content from Coding System			US\$ 58
ENRM Content from PAD			US\$ 57

Africa (P093806)	Project Name: Niger Basin Water Resources	Total Project Cost: US\$ 233.2	IBRD/IDA Loan Amount: US\$ 186
Sector Board: Water		Theme codes: Water resource management 50%, Environmental policies and institutions 25%, Other rural development 25%	
Objectives: The project development objective is to enhance regional coordination, development and sustainability of water resources management in the Niger River Basin.			
Component 1: NBA institutional strengthening and capacity building (US\$7.77 million equivalent): This component would enhance the capacity of the NBA, its National Focal Structures, and other institutions involved in project implementation and supervision. This component would strengthen regional water resources management and planning.			100% ENRM
Component 2: Rehabilitation, optimization and development of regional infrastructure (US\$138.45 million): Activities include rehabilitation of the Kainji dam and hydropower plant (US\$115.88million), rehabilitation of Jebba hydropower dam (US\$11.67million), assessing optimization and management options for regional water infrastructure development (US\$10.9million).			Half of the commitments of two sub-components in Component 2 ("rehabilitation of Kainji dam and hydropower plant" and "rehabilitation of Jebba hudropower dam") were deducted as the purpose of activities includes increasing the energy production.
Component 3: Sustainable management of selected degraded areas and rehabilitation of small water infrastructure (US\$39.78million): Activities include rehabilitation and diversification of small dams (US\$9.26million), Rehabilitation and construction of small irrigation schemes (US\$9.26million), support to the community-based development fisheries (US\$4.91million), Watershed restoration and management, and agro-forestry (US\$20.12million), and operational support to national implementing agencies (US\$3.09million).			100% ENRM
ENRM Content from Coding System			US\$ 140
ENRM Content from PAD			US\$ 135

Croatia (P102732)	Project Name: Coastal Cities Pollution Control 2	Total Project Cost: US\$ 181.4	IBRD/IDA Loan Amount: US\$ 88
Sector Board: Water		Theme codes: Pollution management and environmental health 92%, Environmental policies and institutions 8%	
Objectives: The objectives are: (i) to improve the provision of efficient and sustainable wastewater services in participating coastal municipalities; and (ii) to reduce the nutrient load entering Croatia's coastal waters from, and pilot innovative 'wastewater treatment solutions in, selected municipalities.			
Component 1: Wastewater investments (Euro 111.8 million, of which Euro 54.15 million from IBRD and Euro 3.5 million equivalent (US\$5.6 million) from GEF) will finance investments and engineering design and construction supervision for the construction, expansion and rehabilitation of wastewater collection, treatment and disposal systems. Phase 2 will scale up the number of cities participating in the project from 11 to 30 using the same financing structure as Phase 1.			100% ENRM (Treatment of wastewater will help reduce the nutrient load entering Croatia's coastal waters).

Component 2: Institutional strengthening (Euro 6.25 million, of which Euro 3 million from IBRD and Euro 0.25 million equivalent (US\$0.4 million) from GEF) to finance equipment, technical assistance, training and studies in three sub-components: (a) sector development to assist MRDFWM and HV implement the Water Management Strategy and further align the sector to EU accession priorities; (b) institutional strengthening of MWSCs to improve their financial and operating efficiency; and (c) project management to support the Implementing Unit, Hrvatske Vode Jadranski Project (Hv Adriatic Project; HVJP) , to implement the project.	100% ENRM
Component 3: Seawater quality monitoring (Euro 5.95 million, of which Euro 2.85 million from IBRD, Euro 0.25 million equivalent (US\$0.4 million) from GEF) to finance equipment, civil works and technical assistance to strengthen the HV monitoring systems; and the seawater quality monitoring systems of the Ministry of Environmental Protection, Physical Planning and Construction (MEPPPC).	100% ENRM
ENRM Content from Coding System	US\$ 88
ENRM Content from PAD	US\$ 88

Agriculture and Rural Development Sector Board

Vietnam (P096418)	Project Name: Land Administration Project	Total Project Cost: US\$ 100	IBRD/IDA Loan Amount: US\$ 75
Sector Board: Agriculture and Rural Development		Theme codes: Land administration and management 100%	
Objectives: To increase access to land information services by all stakeholders through development of an improved land administration system in selected provinces in Vietnam			
Component 1: Modernization of the Land Registration System Component: total cost estimated at SDR52.89 million (US\$85.32 million) would support the development of an accurate, current, and complete information system to support land registration, in the nine project provinces, through (a) completing and updating spatial data coverage; (b) completing and updating land records; (c) further developing and implementing a computerized land records management system to store, access and update land registration and land use information; and (d) key policy studies in support of land administration system modernization.			100% Land administration project
Component 2: Improvement of Land Registration Service Delivery Component: total cost estimated at SDR4.59 million (US\$7.41 million) would support improvement of service delivery by all land registration offices; provision of access to land registration and land use data through all land registration offices; and implementation of a program to promote awareness by the public of land information availability and participation in the processes to complete and update land records and surveying. Under this component, nationally consistent service standards and mechanisms for data access would be developed and implemented.			100% Land administration project
Component 3: Support to Project Management and M&E Component: total cost estimated at SDR4.51 million (US\$7.28 million) would support overall implementation of the project through activities aimed to strengthen project management capacity and enhance monitoring and evaluation to provide timely feedback for management actions.			100% Land administration project
ENRM Content from Coding System			US\$ 75
ENRM Content from PAD			US\$ 0

China (P081255)	Project Name: Changjiang/Pearl River Watershed Rehabilitation	Total Project Cost: US\$ 200	IBRD/IDA Loan Amount: US\$ 100
Sector Board: Agriculture and Rural Development		Theme codes: Other environment and natural resources management 33%, Water resource management 17%, Land administration and management 17%, Rural services and infrastructure 17%, Other rural development 16%	
Objectives: To improve farmer's livelihoods and protect the environment in poor and highly degraded watersheds of the Changjing and Pearl River Basins in China by promoting an integrated and replicable model of sustainable rural development			

<p>Component 1: Soil and Water Conservation (about US\$40.4 million), which would include pre-dominantly physical investments (works and goods) for soil and water conservation which generate primarily ‘public goods’. a. Minimum capital farmland (about US\$12.2 million), Le. the construction of relatively expensive “stone-faced” terraces in areas with thin layers of soil with and without irrigation facilities. b. Sediment Retention Structures (about US\$6.8 million), which would intercept the sediment at its source, to check the water discharge and to slow the flow of flood water in the tributary gullies of the major rivers. c. Afforestation and Vegetative Cover (about US\$11 million) and Protection/Closing of degraded forests and other slopeland (about US\$3.6 million), which would include the planting of forest trees including pines, firs, poplar, cypress etc. and shrubs, and the closing and protection of areas for natural re-vegetation with primary purpose of soil and water conservation and limited scope for commercial use. d. Village Infrastructure (about US\$6.9 million), which would include the construction of drinking water supply systems, improvement of access roads, tractor roads and field tracks.</p>	<p>Primary purpose of the project is to address land degradation while helping poor farmers introduce sustainable agriculture and land management practices. For this reason, the entire Bank financing is considered to be primarily addressing environmental objectives. However, Village Infrastructure sub-component under component 1 is deducted as the activity includes the construction of drinking water supply systems (3.57 million).</p>
<p>Component 2: Livelihood Improvements (about US\$140.5 million), which would include predominantly physical investments (works and goods) that are primarily designed to improve the income of farmers; which brings about a change in the prevailing unsustainable land use practices. a. Terracing of slope land (about US\$8.8 million), which would include the cost-effective construction of “earth-faced” terraces on slope land of 5 to 15% gradient with incremental crop production expected to generate significant income increases. Horticulture and Fruit and Nut Trees (about US\$36.1 million) c. Grasslands (about US\$8.1 million), which would include the establishment of perennial grassland and Lucerne and thereby lead to improved fodder production and soil erosion. d. Livestock Development (about US\$29.0 million), which includes livestock activities that will significantly increase incomes and are fully integrated with soil and water conservation. e. Irrigation and Drainage (about US\$40.8 million), which would include irrigation facilities including small-scale tanks and cisterns filled by runoff to provide emergency water supply in cases of severe drought or for the initial establishment of tree seedlings in plantations or orchards. Renewable Energy Supply (about US\$17.7 million), which would support energy-savings oven and small-scale bio-gas production facilities based on manure farm livestock.</p>	
<p>Component 3: Project Management and Support Services (about US\$16.3 million), which would ensure a participatory design process with inclusion of vulnerable groups, the quality management and implementation of activities under Components 1 and 2, the right institutional setting for sustainable operation and maintenance of project activities, the mitigation of environmental and social risks, and strong project management including M&E.</p>	
ENRM Content from Coding System	US\$ 67
ENRM Content from PAD	US\$ 96

China (P088964)	Project Name: Guangxi Integrated Forestry Development	Total Project Cost: US\$ 204.6	IBRD/IDA Loan Amount: US\$ 100
Sector Board: Agriculture and Rural Development		Theme codes: Other environment and natural resources management 33%, Environmental policies and institutions 17%, Rural markets 17%, Rural services and infrastructure 17%, Land administration and management 16%	
Objectives: To improve the effectiveness of forest management and institutional arrangements in timber production, watershed protection and nature reserves management in selected areas of the Guangxi Zhuang Autonomous Region (GZAR)			
Component 1: Expanding Timber Plantations (Projected Cost US\$171.10 million): The project would finance: (a) the establishment of approximately 200,000 ha of fast-growing, high-yield timber plantations; and (b) the improvement of nursery management, including the establishment of four central nurseries and facilities to produce high-quality planting materials to enable the introduction of superior genetic materials and management technologies. These activities would enhance the productivity of forest resources and increase the supply of timber products, thereby taking pressure off natural forests and biodiversity conservation as well as increasing household incomes and generating job opportunities for local farmers.			Half of the commitments of component 1 are included as the project objective is to support forest resources management priorities of China, including ecological forest protection, biodiversity conservation and timber plantation expansion.

Component 2: Increasing Ecological Forest Cover (Projected Cost US\$18.67million): Since 1996, the GZAR has been implementing the Integrated Management of Protection Forests in the Upper Reaches of the Pearl River project. This component would contribute to the objectives of this government program by developing and demonstrating models that would combine economic, environmental and social benefits.	100% ENRM
Component 3: Improving Management of Nature Reserves (Projected Cost US\$7.02 million): The aim of this component is to enhance the management of existing nature reserves; increase management capacity and knowledge of biodiversity resources (particularly in the little-known limestone ecosystems); and strengthen cooperation between local communities and nature reserve staff to address areas of mutual interest. Specifically, the component would finance: (a) the development and implementation of management plans for five globally significant, high priority nature reserves for demonstration purposes; (b) targeted biodiversity survey and research to increase knowledge to better integrate biodiversity conservation into the broader landscape; (c) activities which will strengthen collaboration between nature reserves and local communities; and (d) development and implementation of a simple participatory monitoring and evaluation system focused on the nature reserves and building on the experiences of previous GEF-financed biodiversity projects in China.	100% ENRM: Financed by GEF
Component 4: Enhancing Institutional and Management Capacity (US\$5.06 million)	100% ENRM: Financed by GEF
ENRM Content from Coding System	US\$ 66
ENRM Content from PAD	US\$ 16

Indonesia (P096532)	Project Name: Dam Operational Improvement	Total Project Cost: US\$ 70.43	IBRD/IDA Loan Amount: US\$ 50
Sector Board: Agriculture and Rural Development		Theme codes: Water resources management 100%	
Objectives: (i) increase the safety and the functionality with respect to bulk water supply of large ministry of public works-owned reservoirs; and (ii) strengthen the safety and operational management policies, regulations and administrative capacity of ministry of public works			
Component 1: Dam Operational Improvement and Safety Works and Studies (Base cost US\$31.48 million) to design and implement construction of localized rehabilitation and remedial works on about 34 dams reservoirs.			100% ENRM
Component 2: Operations & Maintenance Improvement and Capacity Building (Base cost US\$13.24 million) to improve operation and maintenance capacity and procedures; to conduct participatory programs with local communities to protect the greenbelt of reservoirs.			100% ENRM
Component 3: Reservoir Sedimentation Mitigation (Base cost US\$13.12 million) to conduct surveys and community participatory programs with local communities to protect the upstream catchments.			100% ENRM
Component 4: Dam Safety Institutional Improvement (Base cost US\$2.14 million) to support the strengthening of the regulatory framework.			100% ENRM
Component 5: Project Management (Base cost US\$4.36 million)			100% ENRM
ENRM Content from Coding System			US\$ 50
ENRM Content from PAD			US\$ 50