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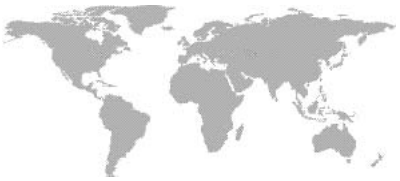

INDIA: Environmental Sustainability in the 1990s

A Country Assistance Evaluation

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2002
The World Bank
Washington, D. C.

OPERATIONS EVALUATION DEPARTMENT

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Acronyms

CAS	Country Assistance Strategy
CDF	Comprehensive Development Framework
CFC	Chlorofluorocarbons (also known as ODS)
CITES	Convention on International Trade in Endangered Species
EA	Environmental assessment
ESSD	Environmentally and Socially Sustainable Development Network
ESW	Economic and sector work
EU	European Union
FY	Fiscal year
GDP	Gross domestic product
GEF	Global Environment Facility
GOI	Government of India
IBRD	International Bank of Reconstruction and Development
ICR	Implementation Completion Report
IDA	International Development Association
IUCN	World Conservation Union
MOEF	Ministry of Environment and Forestry
NEAP	National Environmental Action Plan
NGO	Nongovernmental organization
ODS	Ozone Depleting Substances
OED	Operations Evaluation Department
OIS	Operations information system
OP	Operational Policy (of the World Bank)
OWL	Operations Web Links
PDS	Project Document System of the Operational Core System
QAG	Quality Assurance Group
UNDP	United Nations Development Program
USAID	United States Agency for International Development

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This report was prepared by Mr. Klas Ringskog (Principal Evaluation Specialist) and Ms. Nola Chow (Consultant). Mr. William Hurlbut edited the report. Ms. Helen Watkins provided administrative support.

Preface

This paper is one of the background papers prepared as an input to the India Country Assistance Evaluation (Task Manager: Mr. Gianni Zanini) by the Operations Evaluation Department (OED) of the World Bank. It is also an input into a sectoral review by OED of the treatment of environmental issues by the Bank. Findings are based on a review of project appraisal and completion reports, sector reports, and a number of other documents produced by the Borrower, the Bank, OED, and research papers. An OED mission visited India in April/May 1999. The mission interviewed current and retired government officials and Indian experts. Bank staff were interviewed at both headquarters and in the field office. Their valuable assistance is gratefully acknowledged.

An earlier version of this paper was reviewed within OED and by the Regional Environment team. Subsequently, a workshop was held in New Delhi, in December 1999, where the paper was discussed with government and NGO representatives. It was again discussed at a CAE workshop in New Delhi on April 4, 2000, chaired by Professor K.C. Sivaramakrishnan and with the participation of central and state government officials, academics and members of policy research institutes, and other representatives of civil society.

The author is grateful for all comments received, which have been taken into account in this revised version. However, the views expressed in this paper remain entirely those of the author. They do not necessarily represent the views of OED or the World Bank

Executive Summary

1. India's environmental problems are deep-rooted and severe. Estimates of annual environmental damage range from 4.5% to 8% of GDP, in line with annual economic growth. Out of the estimated environmental costs 59% are related to the burden of disease due to unsafe water and unsanitary excreta disposal , 20% to soil degradation , and 13% to air pollution. With this in mind, the OED evaluation pays special attention to these three areas of environmental damage.

2. Since 1990 the World Bank has lent India $1.94 billion for 19 projects to mitigate environmental damage and another $97 million was granted under GEF and Montreal Protocol trust funds for four projects to protect the global environment. Although sizable, the Bank's role will remain marginal compared to India's own actions. Most of the Bank projects are still active or have only recently closed, which prevents a full evaluation of the impact of the Bank's environmental program at this time. The Bank has also supported a spectrum of economic and sector work (ESW) that address environmental issues based on country assistance strategies. Interviews with Indian stakeholders show that the Bank's ESW has had considerable impact on environmental awareness and policies.

3. OED's summary rating of the Bank's results is *moderately satisfactory.* The summary rating is predicated on India's intractable environmental imbalances where poverty reduction is at times at the expense of the vulnerable environment. As could be expected for a country of India's complexity, the Bank effort has comprised a wide range of projects. The Bank's most significant contribution is in mainstreaming environmental concerns in sectors such as agriculture, power, water resources, and water supply and sanitation,. Compared to the present situation where electric energy and water are under-priced, more realistic pricing of natural resources and energy would reduce both the consumption and pollution through the demonstrated elasticity of demand. Some environmental projects have also had implementation problems, including one that is currently under Inspection Panel review. In contrast, there are highly successful projects, such as the Uttar Pradesh Sodic Lands Reclamation Project and those that aim at reducing the use and production of ozone-depleting substances. The Sodic Lands Project is proof that poverty reduction is possible with lasting environmental improvements. The same would be true of efforts to conserve natural resources and biodiversity since the most vulnerable people are often relegated to the most vulnerable lands.

4. The Government of India (GOI) has attempted to regulate the environment for several decades, but its institutional capacity for efficient monitoring, enforcement, and promotion of more sustainable alternatives does not match the task. The GOI produced a major environmental document, the National Environmental Action Plan (NEAP) in 1993, but its implementation is lagging. Identified main priorities include addressing the pollution of air and water resources, and land degradation that threaten the health and prosperity of the population.

5. OED's evaluation suggest a number of general lessons. The Bank's *safeguards* to minimize environmental damage have been moderately successful and their performance has improved as the Bank and India have become more familiar with policies and issues. Good *stewardship* in the Bank's environment programs is conditioned on in aligning the

Bank's commitment with GOI's priorities and most serious environmental problems (e.g., water supply and sanitation), and change the incentives to rely more on market-based mechanisms. *Mainstreaming* environmental concerns into other sectors has begun, but further efforts are needed. *Global issues* deserve attention since mitigating India's own environmental problems would also benefit global environmental issues to such a large degree, given India's size and diversity..

6. The report identifies eight conclusions for the Bank's future environmental assistance to India. The eight conclusions identify cost-effective measures with both short-and long-term benefits:

- ***Integrate safeguards earlier in the project cycle.*** Environmentally sounder project alternatives can be accommodated at the least cost early in the project cycle. To do so will require added resources to enable Bank staff to review *all* projects and ensure their compliance with safeguards with a set of relevant monitoring indicators.
- ***Provide alternatives to public sector management of water supply and sewerage systems.*** Estimates are that close to 60% of the environmental damage is explained by unsafe water supplies and the absence of sanitary excreta disposal. Alternatives to inadequate and unsafe public management are overdue. One possibility is private management underpinned by a clear separation between public regulation of results achieved and private management
- ***Greatly expand support of sanitation programs.*** A recent Bank research project in the state of Andhra Pradesh has pinpointed the crucial health importance of sanitary excreta disposal. The cost effectiveness of sanitation programs compares favorably with the cost of other health interventions. Safe sanitation is of priority to both urban and rural poor since they are more likely to lack service and quality service. If possible, sanitation programs should use community-based organizations and NGOs as implementers.
- ***Air pollution needs to be targeted as a priority measure.*** Air pollution has rapidly reached crisis proportions in all of India's major cities. Incentives to move to less polluting technology and enforcement of emission standards are urgently needed to start addressing the problem. In-door air pollution deserves special attention because of its direct link to health of the poor.
- ***Step up efforts to promote rational pricing of natural resources.*** Much of the stress on air and water resources can be attributed to unrealistically low resource prices and ineffective metering, billings, and collections in the power and irrigation sectors. More rational prices will remain ineffective unless reforms can create the capacity to administer prices and relate payments to resource use.
- ***Monitoring and enforcement of environmental standards is lagging and undermines the whole regulatory effort.*** Indian environmental legislation is comprehensive, but its enforcement is weak. One good alternative would be to use *private subcontractors* under public regulators Bank projects can raise effective regulatory enforcement rapidly.
- ***Links between poverty reduction and ecological balance must be more fully documented.*** The poorest population segments often live in the environmentally most

vulnerable areas. The Bank, through economic and sector work, could further explore this relationship and seek development paradigms that achieve both goals.

- ***Better recognition of global environmental threats would also address local concerns.*** India is a significant source of greenhouse gases (mainly from coal-based power plants), remains one of the few ozone-producing countries, and faces the extinction of some its threatened species. The Bank through the Global Environmental Facility can and should do more. The greatest positive effect on global issues would be through mainstreaming environmental sustainability in all Bank programs through correct levels and administration of prices of inputs.

1. Background

1.1 India's rich natural environment is rapidly deteriorating and the consensus is that current development patterns are unsustainable in the long term. One contributing factor for the worsening state of the environment is the pressure from the burgeoning but poor population. Total population surpassed one billion in 1999, but annual per capita income broke the level of $400 only in 1998. Although the toll on the environment is evident to residents and visitors alike, it is surprisingly difficult to come by systematic data on the state of the environment. The Annual Report from the Central Pollution Control Board[1] provides a wealth of scattered statistics but lacks an aggregated and continuous analysis of environmental degradation across the nation. In contrast, there are a number of NGOs that produce in-depth and focused analyses of various facets of India's environment.

Estimated Costs of Environmental Damage

1.2 A number of studies have attempted to track the true cost of resource degradation and of environmentally related health hazards. A first and influential study[2] from the World Bank assesses the annual environmental cost at 4.5% of gross domestic product. Close to 60% of the calculated cost is due to the economic losses from unsafe water supplies and unsanitary excreta disposal. Another 20% is explained by soil degradation resulting in lost agricultural output. A further 13% is the estimated cost of air pollution. Finally, the balance of 8% comprises a host of costs associated with deteriorating rangeland, deforestation, and declining tourism revenue. A second study[3] corroborates the substantial costs in the form of air pollution, groundwater mining, deteriorating quality of many aquifers, land degradation, and deforestation. The composite estimate of the annual environmental damage is close to *double* the annual GDP growth rate 1980-90 of more than 5%. A third study[4] calculates a low estimate of the annual economic cost of air pollution, contaminated water, soil degradation, and deforestation at close to 8% of total GDP.

1.3 Whichever study is used – and the estimates are all partial – they converge in reporting that the entire annual economic growth in India is likely offset by the substantial and generalized deterioration of the country's environment.

Water Degradation

1.4 Unsafe drinking water, contaminated by human and industrial waste are estimated to be the biggest environmental burden, with the poor suffering disproportionately.

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1. "Annual Report 1997-98," Central Pollution Control Board, Delhi, 1998.

2. Brandon, C., and K Hommann. "The cost of inaction: valuing the economy-wide cost of environmental degradation in India." presented at the Modeling Global Sustainability conference, United Nations University, Tokyo, October 1995.

3. Khanna, P. and Ram Babu, P "Environmental Evaluation of Economic Growth; An Agenda for Change," Article in the scientific magazine *Yojana*, August 1997.

4. "Looking Back to Think Ahead," Tata Energy Research Institute, Delhi, 1998.

Service levels and standards as reported in the 1997 World Bank World Development Indicators are misleading: 87% of the urban population and 85% of the rural population are reported to have access to safe water in 1993. The reality is different. Hardly any city in India enjoys continuous water service and most cities receive only a few hours of service daily. Groundwater – contaminated by sewage because extensive sewage collection systems are absent – infiltrates the empty and leaky pipes and spreads water-borne disease. In 1987 it was estimated[5] that 60% of all deaths in urban areas were due to water-related diseases such as cholera, dysentery, and gastroenteritis.

1.5 Water resources are under stress from polluted aquifers and dropping groundwater tables. Currently, untreated sewage from urban areas represents the single most serious water pollution source.[6] Industries often release chemical agents, fertilizers, pesticides, and contaminated silt with only rudimentary treatment into the environment. According to one observer the chemical fertilizers and pesticides that underpinned the Green Revolution, "have drastically increased [the] 'non-point source' pollution over the past twenty years."[7]

1.6 Power plants contaminate rivers through coal-washing effluents and thermal pollution. The Narmada project is one example where people and nature have been affected by large-scale water resources development while the full potential benefits are yet to be realized.

1.7 Water resource development has often been supply-driven with insufficient user involvement and with underpriced water. Monthly lump-sum power tariffs for irrigation water encourage overpumping from the aquifer. Tubewells do not have to be licensed and water extracted is neither registered nor charged for. Unreliable irrigation systems induce farmers to sink tubewells rather than rely on unpredictable public supplies.

Air Pollution

1.8 India's major cities such as Delhi, Lucknow, and Mumbai all suffer severe air pollution. For instance, Mumbai's industries, foundries, and automobile stock grew rapidly and brought on serious air pollution.[8] The rapid growth of vehicles fueled with leaded gas has contributed to urban air pollution apart from constituting a health threat, primarily to children. It is estimated[9] that about two-thirds of air pollution in Delhi, half in Mumbai, and approximately one-third in Calcutta originate from inefficient vehicles

5. "India's Environment – Taking Stock of Plans, Programs and Priorities," World Bank, January 1996.

6. Environmental management capacity building technical assistance project: PID. May 1996. Report no. PIC3529.

7. Rich, B. Mortgaging the earth: the World Bank, environmental impoverishment, and the crisis of development. Beacon Press, Boston, 1993, p. 277.

8. Urban Air Quality Management Strategy in Asia; Greater Mumbai Report. December 1997. World Bank technical paper, no. 381.

9. "Slow Murder – The Deadly Story of Vehicular Pollution in India," Centre for Science and Environment, New Delhi, November 1996.

that burn low-grade and polluting fuel. Outside metropolitan areas, industrial air pollution is grave in 22 regions.[10]

1.9 Weak environmental policies in the energy and industrial sectors add to air pollution. Coal-fired thermal plants, metallurgy, and chemical manufacturing release air pollutants such as sulfur and nitric oxides and particulate matter. General economic policy is such that power generating plants find it difficult to comply with environmental standards since under-priced energy and high losses limit capital investments.[11]

Land Degradation

1.10 Land and soil nutrients have suffered from overgrazing, deforestation, and poorly planned irrigation schemes. Fuelwood collection and clearing of land continue in the once vast forests. The most serious problem currently is the degradation of remaining forests that reduce their productivity and returns for those that depend on them for their livelihood. Data on forest cover, its rate of change and the demand and supply of forest products are unreliable which makes planning and meaningful action difficult .[12] Inadequate solid waste management poses an increasing public health risk.[13] The pest epidemic in 1994 in Surat was traced to rat infestation brought on by the unsanitary disposal of solid waste. Sodic wastelands are in part the result of poor irrigation practices. Insufficient drainage in irrigation schemes has brought on waterlogging and salinization of agricultural land.[14]

Environmental Damage and the Burden of Disease

1.11 The urban and rural poor suffer disproportionately from the environmental degradation. They are rarely connected to public water systems or to sanitary systems of excreta disposal. Those poor who are connected suffer the full consequences of service interruptions since they often find it difficult to pay for on-site storage to mitigate rationing. Especially the air inside Indian homes constitutes a health threat because of the widespread use of polluting fuels for food preparation in cramped quarters. Some observers estimate that indoor air pollution exposes the population to pollution levels four times as high as outdoor air pollution. The rural poor will often be relegated to marginal soils where erosion and sodic dust cause respiratory disease.

Global Issues

1.12 India has an extremely rich natural resource base supporting a high biodiversity. Unfortunately, deforestation and other habitat degradation issues are now threatening

10. NEAP December 1993.

11. Environmental Issues in the Power Sector. June 1998. Report no. 205.

12. Alleviating Poverty through Participatory Forestry Development: An Evaluation of India's Forest Development and World Bank Assistance, OED draft report of September,1999

13. Environmental management capacity building technical assistance project: PID. May 1996. Report no. PIC3529.

14. Irrigation Sector Review. Vol. 1. December 1991. Report no. 9518.

flora and fauna throughout the nation. India is a significant contributor to global climate change with continued high levels of greenhouse gas emissions from thermal power plants although the per capita emission levels are much below those of the major emitter: the United States.. In 1992 India was the sixth-largest source of carbon dioxide. By 2010 China and India combined are forecast to account for half of total carbon dioxide emissions (with the United States remaining the largest emitter).[15] India is also a major source of ozone-depleting chlorofluorocarbons (CFCs) through its use and production in the country. The oceans and freshwater basins that India shares with its neighbors are also under pressure from overfishing and pollution.

National Environmental Legislation and Action

1.13 Environmental degradation has been a growing concern of the GOI since the early 1960s. and by the beginning of the 1970s, the GOI had adopted a series of laws to protect the environment. Among the most important of the environmental laws were the Water (Prevention and Control of Pollution) Act of 1974, the Air (Prevention and Control of Pollution) Act of 1981,[16] and the Environment (Protection) Act of 1986, a comprehensive law aimed at conserving sensitive habitats such as coastal zones and at mitigating pollution.[17]

1.14 In recognition of its diverse but dwindling wildlife, the GOI passed the Wildlife (Protection) Act in 1972[18] to protect species and to establish national parks and sanctuaries. A few years later, in 1976, India signed the Convention on International Trade in Endangered Species (CITES). Subsequent amendments to both laws have further improved the possibilities to protect wildlife in India.

1.15 The Forest Conservation Act of 1980 prohibits conversion of designated forest lands to non-forest use. However, lack of incentives for farmers to conserve forests has induced them to continue logging many of the designated lands. Construction of hydroelectric dams and irrigation projects are likely to inundate portions of valuable forestlands as well.[19] From the late 1980s and the 1990s other legislation included: National Water Policy of 1987,[20] and from 1989, rules applying to industrial hazardous wastes.

1.16 In addition, the GOI compiled its environmental concerns and strategies in its Five-Year plans and in a Bank-supported document, the National Environmental Action Plan (NEAP) in 1993. In this vein, the Eighth Five-Year Plan (1992-1997) analyzes measures to improve water supply and sanitation, development of hill areas, irrigation and flood control, and energy (Annex A). The NEAP (Annex B) describes the longer-term strategies proposed in the Five-Year Plans. The NEAP is comprehensive but it is

15. World Resources – A Guide to the Global Environment, Table 14.1, Oxford University Press, 1996.

16. NEAP 1993.

17. NEAP 1993, Ecodevelopment SAR, August 1996, Report no. 14914.

18. Ecodevelopment SAR. August 1996. Report no. 14914.

19. Irrigation Sector Review. Vol. 1. December 1991. Report no. 9518.

20. Water Resources Management Sector Review. September 1998. Report no. 18356.

widely felt that it has remained an academic document due lack of GOI ownership. In contrast, starting in 1994 the GOI began requiring environmental impact assessments (EIAs) for projects regulated by the Ministry of Environment and Forestry (MOEF), in an effort to raise environmental awareness and concern at the project level.

2. Evaluation Methodology

2.1 Standard OED performance evaluation factors were used to evaluate the Bank's environmental assistance to India.[1] *Outcomes* were assessed in terms of actual environmental and institutional impacts and their significance in terms of the magnitude of the problems and the Bank's role in country. The outcome rating represents a composite of the ratings for relevance, efficacy, and efficiency. Each of these is also rated separately. The *relevance* of the results were measured against what the country's environmental goals were in terms of statements of their priorities and how well the Bank's strategies and programs paralleled these goals. Country priorities were found in Five-Year Plans and the national environmental strategy. These documents reflected some of the overarching goals of the environmental action, but may not have been translated into actual working strategies in India. The Bank environmental strategies and programs were derived from the details contained in the Country Assistance Strategies(CASs). The *efficacy* refers to the achievement of the stated objectives of the Bank's country interventions. The *institutional development impact* was evaluated based on the Bank's role in strengthening environmental institutions. The *efficiency* of the Bank's environmental assistance was evaluated by means of relating benefits to the costs expended to produce them. The *sustainability* of the Bank's assistance was assessed by examining the degree to which the environmental gains are likely to continue over the long term. The adequacy of provisions for *monitoring and evaluation* of the environmental programs and the *benefits to the poor* from the Bank's environmental assessment were also evaluated. The evaluation will be framed within the Bank's four-point environmental agenda that was developed in 1991 to: "Do no harm," "Create a supportive framework to improve the environment," "Mainstream the environment," and "Participate in global public policy."

2.2 This report relies extensively on documentary sources and was complemented by a mission to Bombay, Delhi, and Lucknow in May, 1999 and by interviews. The scope of projects reviewed (1988 – 1999) included Environmental Assessment Category A & B (55 active, 9 closed), environmental sector (19), and Bank implemented GEF and Montreal Protocol (4) projects (Annexes F-H). Of the ongoing Category A & B projects (55), the evaluation emphasis was on those that had completed mid-term reviews.

2.3 This paper also benefited from a stakeholder review consultation in April 2000 held in New Delhi. The report is one of six country case studies that will be input to

1. Additional information on OED evaluation methods are available in "Lessons & Practices," and "Reach" publications available from OED's website at www.worldbank.org (>evaluations >operations evaluations department)

OED's Evaluation of the World Bank's Performance in the Environment and contributes to the OED's India Country Assistance Evaluation.

3. The World Bank Environmental Strategy And Activities

Environmental Issues in Country Assistance Strategies and Policies

3.1 In 1989, World Bank President Barber Conable noted that: "We have to ensure. . . that change is constructive, and that change does not destroy the resources on which human progress is based."[1] His successors, Messrs. Preston and Wolfensohn, have reaffirmed this message and emphasized sustainable development. In the early years the policy interpretation of this was to minimize a project's environmental impact.[2] Since the beginning of this decade, the Bank's environment program has been more directed through the four main themes: "Do no harm," "Create a supportive framework to improve the environment," "Mainstream the environment," and "Participate in global public policy."

3.2 The objectives have been incorporated into Bank policies, including an Operational Policy on Environmental Action Plans (OP 4.02; Bank Policy on Country Assistance Strategies (BP 2.11), and an Operational Directive on GEF lending procedures (OD 9.01). One of the most direct impacts on the project level was the adoption in 1991 and revision in 1999 of the OP on Environmental Assessments (OP 4.01). Under the Environmental Assessment Policy, projects expected to have greater environmental impact, Category A and B projects, are subject to more extensive review in order to minimize the adverse effects.

3.3 At the country level, all the five CASs produced for India since 1988 note the impact of economic development on the environment (Annex C), and demonstrate the Bank's awareness of environmental problems in India but prior to 1997 the CASs lack a clear strategy to address the problems. Significantly, the 1988 CAS states "the Bank does not have an environmental strategy for India." Discussion of environmental problems is only related to the rural sector and the poverty linkages, stating "poverty reduction strategies need to be integrated with environmental management policies, but to address this discusses rainfed agricultural projects." However, it does earmark funding for other specific critical issues, coal usage and water supply and sewerage. The 1991 CAS specifies that: "future Bank assistance in [the environment] will be formulated within the framework of an Environmental Action Plan [NEAP]," although time has shown this has not been the case. No specific strategy or objectives are given beyond this.

3.4 The 1993 and 1995 CASs lack explicit environmental strategies. Environmental problems are identified in general, but the CASs stop short of addressing the problem and

1. From President Barber Conable's address, "Development and the environment," presented at the Conference on global environment and human response toward sustainable development, Tokyo, September 1989.

2. Wade, R. "Greening the Bank: The struggle over the environment." in Kapur, D., J.P. Lewis, and R. Webb. (eds.). *The World Bank: It's First Half Century.* Vol. 2 Perspectives. 1997. Brookings Inst. Press, Washington.

providing possible solutions. For instance, while the transport and energy sectors are identified as environmental concerns in the CASs, but lending and other commitments are missing from the strategy. The 1993 CAS does ensure that Bank projects will commit to applying the newly introduced environmental safeguards, "from preparation to supervision," in accordance with GOI and Bank standards.

3.5 Despite vague environmental targets in the CASs, they do accomplish important sector work such as the Energy, Forest, Industrial Pollution, and Water Resources Sector Reviews which have helped develop future strategies. The 1993 CAS earmarked a significant funding proposal for the environment ($1.1 billion). Following the establishment of the Global Environmental Facility (GEF) in 1991, the 1995 CAS supported several GEF projects that are relevant to NEAP, such as the Ecodevelopment plan and Renewable Energy Resources project. Like 1991 CAS the 1993 and 1995 CAS emphasizes environment - poverty linkages, and also mention the weak institutional capacity to address environmental problems. The 1995 CAS also describes GOI discussions about future projects and ESW to address environmental issues, including institution building, policy-making, enforcement, and sector-specific issues.

3.6 The 1997 CAS Program Matrix (Annex C) commits the Bank to specific environmental strategies to a greater extent than previous CASs. Strategies are listed with the required means to implement them, and a proactive approach is adopted on environmental assessments.

4. Evaluation Findings

4.1 The analysis of the Bank's environmental program in India is described by the four main elements of the Bank's overall environmental agenda of the 1990s: safeguards, stewardship, mainstreaming, and global sustainability.

Safeguards: Mitigating Environmental Damage

4.2 Nine projects, accounting for $1.8 billion in net disbursements, with Environmental Categories A or B have closed in the 1990-99 period. OED rated the outcome for five projects as satisfactory (Annex G). Two were audited (*Hyderabad Water Supply* and *Bombay Suburban Electric Supply (BSES)*. The OED audit for the BSES project identified the poor performance of the Bank and borrower on the projects' environmental safeguards. In the ICRs, the implementation of environmental components (mitigation, standards, etc.) when they were mentioned at all, were only briefly discussed, even for Category A projects.

4.3 An internal review of the main safeguard mechanism in the India Environmental Assessments (EAs), found the quality of most to be 'satisfactory' and to have improved over the 1990-97 period.[1] This is natural as both the clients and the Bank itself gain familiarity with the EA requirements. The EA requirement has also brought about greater

1. India: Review of the Effectiveness of Environmental Assessments in World Bank-Assisted Projects FY 1990-97, September 1999.

awareness of environmental impacts among operational staff[2] and has triggered steps to reduce pollution.

4.4 However, problems common to EAs remain. The detected weaknesses include the lack of standard format, identification of alternatives, and assessment of project impacts. The EA also focuses only on the individual project and while one may have a relatively minor impact, when projects are examined cumulatively or in combination the sum of the whole can have a greater deleterious impact.[3] Additionally, the review found compliance with the Environmental Management Plans (EMPs) to be inadequate in several of the projects reviewed and recommended a greater effort on the supervision of the EMPs and on building EA capacity with the clients.[4] Some stakeholders also contend that in some projects, both older (Narmada and Tata Energy specifically) and more recent projects task managers have pressured GOI to compromise environmental regulations in order to facilitate project implementation.[5]

4.5 India has several examples of EAs of inconsistent quality. For Category A projects, the review found that EAs for Bank projects that comply with GOI requirements often contain voluminous data irrelevant to the environmental impact. For one Category B project, the *Power Grid* project, the EA had an extensive discussion of project environmental concerns related to developing a series of power lines, and details on how each was to be addressed. By contrast, the *Malaria* project, also Category B, did not provide much environmental evaluation, nor were issues such as indirect and long-term effects of insecticide use raised, nor were alternatives considered.

4.6 Differences in addressing environmental concerns exist between sectors as well. The Bank has had a difficult time addressing environmental issues in the energy sector, for instance. A number of the Bank's energy projects are controversial because of the lack of substantial improvement in air and water quality. The *Bombay Suburban Electric Supply (BSES) and TEC Power projects* contain components to mitigate environmental problems, but have not been successful. One of the most environmentally controversial Bank projects—the Narmada Dam project—and the Bank's effort to enforce compliance with its safeguard policies for resettlement eventually led the GOI to discontinue Bank funding for the project. Other more recent projects in this sector continue to have outstanding environmental concerns. One of two recently completed private power projects, *BSES* is one of the first completed energy projects with an EA. An OED Project Performance Audit[6] found that the Bank had failed to identify the negative impact on surrounding wetlands at the time of appraisal and, as a result, failed to mitigate the damage during project implementation. Due to this oversight the project outcome was

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2. Effectiveness of Environmental Assessments and National Environmental Action Plans; A process study. World Bank, OED June 1996.

3. This was a comment from the April 2000 stakeholder review consultation.

4. India: Review of the Effectiveness of Environmental Assessments in World Bank-Assisted Projects FY90-97, September 1999.

5. These allegations were presented by NGO representatives at the April 2000 stakeholder review consultation; however, despite attempts to follow up on this issue, they have not been substantiated by documented evidence.

6. OED Performance Audit Report "INDIA-Private Power Utilities (BSES) Project" (Loan 3344-IN), Report No.19512, June, 1999.

downgraded to *moderately satisfactory*. The *NTPC power generation* project was reviewed by the Inspection Panel after a complaint was brought on resettlement issues, which are part of the EA policy (although not extensively analyzed in this OED evaluation.). The inspection panel results found that the Bank had failed to meet the requirements of analyzing alternatives and to promote and support the capacity for borrowers to carry out resettlement and environmental actions.[7]

4.7 In spite of shortcomings in the application of Bank safeguards, their introduction has meant an improvement as compared to the previous attention to environmental issues. Based on interviews with stakeholders and NGOs in India in May 1999, the application of the Bank environmental safeguard have had a positive impact on the compliance of standards for pollution discharge and other indicators. The review of projects in India shows Indian borrowers and project implementing agencies have made a substantial effort to safeguard the environment although further improvement are still possible. Lesson dissemination and knowledge sharing amongst Bank staff and stakeholders have been and will be key to continually achieving better results.

Stewardship: Improving the Environment

4.8 The Bank has promoted stewardship through its environmental "brown" and "green"projects and through its economic and sector work (ESW). The Bank's ESW comprises research and has benefited from the collaborative energy of environmental NGOs. Four sector reports targeting the environment sector and natural resources of India have been published.[8] These assess the situation and sketch possible future scenarios for critical sector problems: pollution, water resource issues, and forest management. A number of informal Bank reports and research papers have also dealt with environmental issues in India, such as air pollution in the major urban centers of Delhi and Bombay.[9]

4.9 Economic studies have focused on the cost of cleaning up the environment and include the carbon tax study, commercialization of non-conventional energy, economic effects of carbon dioxide and methane emissions restrictions, and social impacts of biodiversity conservation (Annex E). Organized discussions with the Indian government have dealt with topics such as a clean coal initiative, air pollution, environment and the transport and energy sectors, and Integrated Conservation and Development Programs (ICDP) . Current OED work includes a Forest Policy Review. Interviews with policymakers. NGOs and think-tanks underline the great value of the Bank's non-lending services to identify issues, analyze them and suggest solutions.

4.10 Other ESW has been carried out in the form of discussions and meetings with the GOI. Early on this was demonstrated in the Bank's commitment in the 1991 CAS draft to

7. The Inspection Panel; the first four years. World Bank, 1998.

8. Sector Reviews: Irrigation, December 1991, Report no. 9518; Policy and Issues in the Forest Sector, June 1993, Report no. 10965; Environmental Issues in the Power Sector, June 1998, Report no. 205/98; Water Resources Management, September 1998, Report no. 18356.

9. Urban air quality management strategy in Asia: Greater Mumbai report. December 1997. World Bank technical paper no. 381, The Health effects of air pollution in Delhi, India. December 1997. Policy research working paper no. 1860.

assist in the development of the NEAP. More recently, ESW has consisted of promoting environmental workshops. The Metropolitan Environmental Improvement Program (MEIP) was a Bank-executed effort sponsored by several agencies. Bombay was part of the program from 1991 to 1997, that engaged major cities worldwide in sharing their experiences with improving their air quality, water supply and sanitation, and waste disposal problems. It was successful in building environmental awareness. Most recently, a workshop was held in Delhi to work towards a new program for combating vehicular air pollution. [10]

4.11 Knowledge sharing has also been part of the Bank's efforts to collaborate with other donors and NGOs. The importance of partnerships is demonstrated in the 1997 CAS, where NGO participation is actively sought and is listed in several projects. Cooperating organizations include international donor organizations such as the EU and UNDP; national donors such as USAID, DFID, DANIDA, and OECF; and conservation organizations such as the World Wildlife Fund and Conservation International.

4.12 The lending portfolio of fiscal years 1990 through 1997 comprises 19 projects with a primary environmental objective, totaling $1.94 billion (11.8% of total commitments) (Annex F). The performance of the environmental sector shows that 5 (26%) of the projects are at risk of unsatisfactory results; all of them were projects approved within the last five years. In one sector, urban water supply, in spite of 25 years of Bank assistance to the sector, practically no city can claim to provide safe service since service is typically limited to a few hours per day. Progress is inadequate to come to grips with India's number-one health problem: achieving sanitary sewage disposal. The *Bombay Sewage Disposal* project has made little progress towards reaching its objectives of introducing sanitary excreta disposal in the city's slums (Box 1).

Box 1. The Bombay Sewage Disposal Project – Sanitation or Sewerage?

The World Bank Group is supporting the $300 million Bombay Sewage Disposal Project with a loan of $167 million and an IDA credit of $25 million. The bulk of the project cost is for the construction of submarine outfall with ancillary pumping works. In planning the project, the emphasis placed on studying the outfall's environmental impacts has been a positive sign of stewardship and the construction components are advancing well. However, only about 7% of the total project cost will provide improved sanitation to about one million slum dwellers. This component is planned with extensive community participation but has been advancing very slowly. To date, only three of abut 1,000 planned communal sanitation centers are under construction and none has been completed. The scarce progress shows the difficulties of changing hygiene practices, the low priority assigned by local government, and the difficulties to convince slum dwellers to contribute to the construction and upkeep of the sanitation centers. Yet, beneficiary participation is vital to create ownership.

4.13 The success of the *Industrial Pollution Control* and *Industrial Prevention* projects is open to debate. Based on interviews with NGOs the building of Common Effluent Treatment Plants (CETPs) has not resulted in major reductions of pollution in the majority of project sites because enforcement has lagged.

10. Integrated approach to vehicular pollution control, workshop summary, April 1998. Delhi. World Bank unpublished report.

4.14 In the agriculture and forestry sectors, several watershed management projects and forestry projects could have been used to promote environmental sustainability. However, although the *Himalayan Watershed Management* project stressed the successful agricultural development, environmental goals were not met. The *Watershed Development in Rainfed Areas Pilot Project* also set out to develop sustainable agricultural lands and transferable appropriate technologies. The main goals of the pilot were achieved, as were environmental goals such as the development of sustainable croplands, the prevention of erosion, the protection of groundwater, and institutional strengthening. The success of the physical objectives of this project was attributed to the adaptability of the project.

4.15 Successful projects in the irrigation subsector have increased agricultural yields and their successes have largely been due to involvement of farmers in planning and management. Examples include the *Orissa*, *Andhra Pradesh*, and *Tamil Nadu* water resources projects where, with the organizing help of NGOs, the farmers have participated in canal walkthroughs where problems are discussed and options drawn.[11] The *West Bengal Forestry* project is one of several similar forestry projects aimed at preventing continued degradation and biodiversity loss and enhancing sustainable forest productivity. The project was rated as satisfactory for having reforested a large area and slowed degradation. Institutional outcomes include the changing of attitudes of forestry officials who previously worked from a top-down approach, and formation of local Forest Protection Committees. A more in depth analysis of the forestry sector in India is underway in a case study for an OED Forest Policy Review.[12]

4.16 One project to reclaim degraded land in Uttar Pradesh – the *Sodic Lands Reclamation* project – is considered an unqualified success (Box 2). Not only has the project increased productivity of degraded lands but the major share of the benefits have accrued to the lower-caste, poor population that have acquired land tenure. In this fashion, this project has struck at the heart of the environmental dilemma in India: how to alleviate poverty without further damaging the environment. The project also has important benefits in controlling the health hazard that the fine salt dust from sodic soils represents. The *Sodic Lands Reclamation* project also represents best practice in its careful monitoring of progress, which makes effective use of remote sensing by satellite.

11. Water Resources Management Sector Review. September 1998. Report no. 18356.

12. Uma Lele, Forest Policy review team leader, Nalini Kumar, leading India country case study. OED.

Box 2. The Uttar Pradesh Sodic Lands Reclamation Project – A Replicable Success

Flat topography, geology, and irrigation with insufficient drainage have created sodic soils with low or no productivity. The owners of these arid soils are mainly the poorest farmers. The Bank project has combined application of gypsum to the soils, improved drainage, technical assistance, and improved seed and fertilizer to increase cropping intensity from 37% to 230%. A rigorous system for organizing farmers and monitoring progress through satellite Remote Sensing Application have sustained the success of the project. Income levels of farmers have risen sharply and the economic rate of return is estimated at 32% against the 23% projected at appraisal. In order to deepen community participation and underpin the rise in income levels, Women's Self Help Groups have been organized to create micro-credit schemes for cottage industries and small infrastructure works. The success of the First Sodic Lands may now be replicated by a recently approved Second Sodic Lands Reclamation Project and possibly by analogous projects in other states.

4.17 Stewardship has also been promoted in Bank projects through technical assistance projects. In India, a few such projects are applying long-term strategies for sustainable development. The first technology assistance project, *Forestry Research Education and Extension*, proposed in 1994, has not yet been evaluated but has been rated "potentially at risk" for unsatisfactory performance. Another infrastructure/technical assistance project funded by the Bank is the *Environmental Management Capacity Building*, approved by the Board in 1996 but where implementation and performance have not yet been evaluated. This project is currently rated as a potential risk for unsatisfactory performance, based on poor compliance and management and procurement problems. Some components have not disbursed at all and ultimate objective -building effective environmental capacity –is slow in coming.

4.18 In spite of the Bank's efforts to promote stewardship in environmental sustainability in India, its performance has room for further improvement. In ESW in India, the Bank has accomplished important research and analysis of pollution issues and has been instrumental in developing several new pollution abating initiatives. The environment in India might also benefit from a broadening of the project scope and ESW to better address other environmental issues as well.

Mainstreaming Environmental Sustainability

4.19 Mainstreaming the environment entails an effort to incorporate sustainability measures whenever possible into projects, country strategies, and sector work. It is a critical factor in effective reversal of environmental degradation as stand alone environmental projects are not enough. Intervention in other sectors will help reduce both future environmental problems and reliance on weaker environmental ministries and natural resource management capacities. The implementation of the safeguard policies and the requirement of EAs have greatly increased environmental awareness across all sectors. Environmental concerns have become more manifest in CASs and ESW over the past decade. While the number of projects with primarily environmental components has steadily increased, the Bank's other operations often do not take the environment enough into consideration. For instance, biodiversity has been given the most attention in forestry projects, while projects involving biologically diverse and sensitive areas such as coastal zones and freshwater wetlands, as in the *Shrimp and Fish Culture* project (Category B) and the *Malaria Control* project (Category B), have not given it adequate attention. In order to fully mainstream the environment, it is necessary to look at every aspect of Bank

operations, from project design and implementation to financial strategies and incentives for environmentally beneficial opportunities.

4.20 The effort to promote environmental sustainability also involves more rational consumption and production patterns in the economy. Here the record under Bank-assisted projects is mixed. In particular, pricing policies for the extraction, production, and consumption of water and energy remain highly damaging to the environment. Irrigation water is priced at zero at the margin since power tariffs are flat and vary only with the size of the electrically powered pump. Water extraction is not metered. Similarly, urban water consumed is much under-priced and inefficiently used. As a rule, metering is absent or unreliable and cannot be used to control demand. The incentive structure is such that high physical and administrative losses are the norm.

4.21 The potential efficiency gains from demand management and efficient prices are substantial. For instance, in the present situation power tariffs are roughly 50-60% of the long run marginal cost, and system power losses are as high as 40% in some states. Assuming a price elasticity of demand of –0.5 a gradual transition to economically efficient prices, and power losses reduced to 15% through a changed incentive structure and better management one would expect per capita power consumption to be reduced by up to 60%.[13] The resource use would drop commensurately. Similarly, experience elsewhere shows that efficient metering can reduce per capita water consumption by 40%, over and above a price elasticity of water demand of –0.3.

4.22 Under the Bank's approach of concentrating lending on reform-minded states progress has been made on more rational power pricing in states, such as Haryana and Orissa. These projects demonstrate that mainstreaming policies such as more rational pricing and subsidies targeted at the poor is contingent on success in improving the production and distribution of these services. In all likelihood, success will lag until inefficient public utility monopolies are subjected to competition through contracting with private operators where conditions permit this.

Global Sustainability: Mitigating Global Environmental Degradation

4.23 India's size and wealth in flora and fauna make it central in any effort to mitigate global environmental degradation. India is one of the most biologically diverse countries and yet only 4.8% of its land is designated as protected areas compared to 6.4% in China and 13.4% in the United States.[14] India has received four grants under the Global Environment Facility (GEF) and the Montreal Protocol Trust Fund totaling approximately $97 million (Annex F). As member international treaties such as the Convention on Biological Diversity and Kyoto Protocol, the tension exists between mitigation of global environmental degradation and national economic interests. For instance, quite naturally, India will continue to rely on its coal resources to generate thermal power, with the inevitable rise in emissions of carbon dioxide and effect on global warming. Moreover, Bank-sponsored programs for coastal zone management and

13. Meeting India's Energy Needs (1978-1998): A Country Sector Review. OED draft report, June 1999.

14. World Development Indicators, 1999, World Bank.

international waters in India exist only as mitigation components and have yet to have a major positive impact.

4.24 More specific analysis was conducted for the two Bank-GEF sponsored projects, *Renewable Resources Development* and *Ecodevelopment*. The *Ecodevelopment* project has two main thrusts: to support management of protected areas of significant global biodiversity, and to protect local population in and around these areas. Early in 1999 the project was rated 'at risk' and the supervision mission report rated the progress as 'unsatisfactory,' where the main risk factors were the implementation delays and disagreements with the government regarding staffing. A key weakness in the project design, lack of local participation, has also been cited.[15] In fact, tribal people from one of the seven sites lodged a complaint with the Inspection Panel for lack of local consultation and relocation of indigenous people in the project's protected areas. The Inspection Panel did find evidence of a Bank failure to follow the guidelines on adequate participation, which was subsequently acknowledged by the Bank. Implementation has since improved, and the most recent ratings have risen to 'non-risky' and the project is seen as making satisfactory progress.

4.25 By contrast, the *Renewable Resources Development* project is considered successful. One component of the project, the Tamil Nadu Newsprint and Papers Limited Expansion, has been successfully completed and could serve as a model (Box 3). The closing date of the main components of researching alternate power generation has been extended and are still under implementation.

Box 3. Tamil Nadu Newsprint Component of Renewable Resources Project

The Renewable Resources project in Tamil Nadu demonstrates how environmental sustainability should be built into the design of a project. The project is generating increasing profits, supplies an alternative resource to wood-based products, and benefits local people. The project has made efficient use of natural resources, with both global and local benefits, and has been implemented smoothly. Already in operation from a previous Bank loan (approved in 1982), the component's objectives were to help expand the bagasse-based pulp mill to commercial capacity and mitigate environmental issues arising from the industry. In doing so, the Bank performance was rated as satisfactory and upgraded to highly satisfactory in the OED evaluation for encouraging the enterprise to expand into private sector ownership and pay more attention to environmental issues at entry. The presence of an environmental specialist on the team enabled Bank supervision missions to quickly respond to procurement issues and resolve mitigation issues.

Upon completion, the project had not only expanded use of the sugar cane bagasse for pulp production with environmentally sensitive techniques but also had demonstrated the efficiency of the wood alternative as an economic resource. In addition, the project benefited the local community by making available its treated effluent for irrigation and extended the growing season and productivity for the local farmers. The project shows how innovations to standard projects can produce viable natural resource alternatives, secondary benefits, and yield sustainable and replicable projects.

4.26 The energy components have produced 52 alternative power schemes generating 945 MW thus far from small hydro, wind, and solar power. Another alternative energy project, the *Solar Thermal Electric* project, was recently approved. However, against the magnitude of the task of providing sufficient power to the country's industries and

15. Inspection panel report. 1999. Ecodevelopment project.

residents, the World Bank's effort to support development of alternative energy resources appears insignificant.

4.27 To address the global threat of ozone depletion, India has received two grants from the Montreal Protocol Trust Fund, *Ozone Depleting Substances I and II*. The first was a successful small pilot ($1.2 million) that promoted the new equipment design in targeted industries and companies. The second ODS project covers the incremental cost associated with switching consumption to non-ODS materials and has also been successful. The main reason for the success is the readiness of affected companies to collaborate following GOI's signing of the Montreal Protocol, and the agreed phaseout of all ODS production and use by 2010. A third ODS project has been agreed upon and will spend $80 million to close down ODS production plants.[16]

Client Evaluation of the Bank Assistance

4.28 The expectations of Bank assistance from Indian government counterparts, academia, NGOs, and other bilateral and multilateral donors are great considering the limited scope and size of the Bank's assistance to the environment in India. A workshop organized on May 11, 1999, at the World Bank Country Office in New Delhi revealed a number of themes. The participants agreed that the World Bank environmental safeguards had helped limit environmental damage and promote project sustainability and argued that the Bank's greatest contribution may well be sponsoring ESW and disseminating best worldwide environmental practice in India. Some of the past Bank ESW had a considerable impact on public opinion in India. The consensus was that India has sufficient environment legislation but insufficient enforcement capacity, which remains the brake on environmental improvement. For this reason the participants opined, market-based instruments offer a credible enforcement alternative where command-and-control measures have failed. Finally, continued Bank Group financial assistance is much needed to address a series of environmental problems such as water conservation and urban pollution of air, solid waste and water supply, and sanitary excreta disposal.

5. Conclusions For The Bank's Future Environment Assistance

5.1 The Bank's assistance in the environment will always be marginal in comparison to India's needs. As a consequence, the priorities and selectivity will have to be sharp to offer any chance of noticeable impact. At the same time, for any given project, the Bank should commit ample administrative resources for both preparation and implementation. Similarly, selected projects should be relevant in the sense that they respond to the most pressing needs of the environment where economic damage and human suffering are the greatest. The Bank's environmental strategy for India – under preparation and expected

16. C. Brandon, SASEN, World Bank, personal communication.

within 1999 – will no doubt reflect these general concerns of greater selectivity and of meaningful resources committed. In addition, the following themes are relevant. The lessons found from the India country case study could also indicate what similar action will be needed in other Asian countries where environmental conditions are analogous to those in India.

Safeguards: Mitigating Environmental Damage

5.2 ***One – Ensure early integration and implementation supervision of safeguards.*** The review of the correct application of the Bank's safeguard policies demonstrates that the analysis of alternatives should occur at the earliest possible stage in the project cycle when mitigation is the most cost-effective. This would require sufficient resources for the Bank environmental staff to review all projects—including those in the C-category—already in preparation. To gage the success of the safeguard measures, monitoring indicators must be introduced into project components. Supervision by qualified specialists during implementation is also needed.

Stewardship: Improving the Environment

5.3 ***Two – Provide alternatives to public sector management of water supply and sewerage systems.*** Projects must be evaluated on the basis of results achieved and not on effort expended. By that token, the Bank's strategy in the urban water supply and sanitation sector has had mixed results and has not resulted in sustainable operations. Urban water supply and sanitation needs to prepare projects that incorporate financial and institutional reform along with equitable distribution of benefits. Reforms announced in the past have been timid measures and relied on public sector management. Water supply and sewerage will have better chances of success if alternatives to public sector management are available and should be encouraged by the Bank. Based on the successful experience in other regions in the world private sector participation (PSP) offers a clear alternative. Successful PSP would require a reformed incentive scheme where higher efficiency and service quality should be awarded. PSP would offer the promise of transparent management, and tap new sources of financing to allow scarce budgets to focus on the service needs of the poor.

5.4 ***Three – Greatly expand support of sanitation program.*** The recent World Bank research from Andhra Pradesh on the benefits from water supply and sanitation intervention[1] is seminal (Box 4).

1. "Investing in People through Investing in Water," Kseniya Lvovsky, Gordon Hughes, Meghan Denleavy, World Bank, Draft, Spring 1999.

Box 4. Andhra Pradesh – Health Impacts and Priorities for Water Supply and Sanitation

A recent World Bank research study analyzed health benefits from different levels of water supply and sanitation, measured in terms of DALYs (disability-adjusted life years), which permitted combining benefits from postponing mortality and avoiding morbidity. The study showed that:

- A coverage of 60% sanitary excreta disposal produces almost all benefits resulting from sanitation and it is not necessary to reach 100 % coverage.
- The external health benefits from sanitation are large and exceed the sum of individually perceived benefits.
- The health benefits of providing private access to water supplies are significant, especially in urban areas, but were found to be comparatively small for public (standpost) supplies.
- The cost effectiveness of improved health through safe water and sanitary excreta disposal compares favorably with other public health measures in curative care.

5.5 The results of Andhra Pradesh study motivate a large increase in water supply and sanitation efforts, particularly rural water supply and sanitation programs, and special attention to urban slums. Sanitary excreta disposal is a critical need in urban slums where the crowded living conditions perpetuate disease. Greater emphasis on sanitation improvements should build on Community-Based Organizations and NGOs as the preferred way of organizing community support and operations in order to reduce costs and improve the likelihood of sustainability.

5.6 ***Four – Combating air pollution deserves higher priority.*** Air pollution is pervasive and rapidly worsening in Indian cities. Yet no lending operation is scheduled in the 1999-2001 operations program although the Bank has provided a range of non-lending services in the area of air pollution. A benchmark operation designed to be replicated is of high priority. It might combine key emissions source targets, incentives for emissions reductions and enforcement of air quality standards.

Mainstreaming Environmental Sustainability

5.7 ***Five – Promote environmentally sustainable pricing.*** Environmental sustainability is predicated on correct and effective pricing of natural resources. By that token, environmental sustainability in the Indian context is still a long way off since the use of scarce natural resources, such as non-renewable energy sources, water, and forests, is often unregistered and not charged on a volumetric basis. Economic and sector work to calculate the true costs of natural resources would be justified, including an estimate of the surcharges to reflect the costs of pollution. The calculated economic costs could then be used as a guidance in setting pricing policies that would internalize the environmental costs of natural resources. Sustainable pricing would also be predicated on an efficient administrative and incentive system to administer prices. Pricing reform will only proceed at the pace of political support at the state level to reform the power sector. The driving force for reform will not be the concern for the environment but rather the objective of reduce government subsidies to the sector and raise efficiency and service quality.

5.8 ***Six –Better enforcement of environmental standards needed.*** A credible system for administering such environmental/economic prices requires improvements in the capacity to register, license, bill, and collect for the use of resources. Failure to enforce regulations are largely due to institutional weaknesses in administration and incentives

and must be addressed. A modest beginning to the public sector's role to collect data has been made under the hydrology project where hardware and software have been procured to improve on the collection and analysis of hydrological data. In the same vein, regulation could be improved by sub-contracting data collection, analysis and monitoring to outside firms, under public oversight.

5.9 ***Seven –Vulnerable lands, vulnerable people: Find the linkages.*** The most vulnerable population segments in India, as elsewhere, live in areas with the greatest environmental damage. They may compete with issues such as bio-diversity and conservation of forestry. The forestry review covers these linkages. In order to demonstrate examples and policies where poverty reduction and environmental improvement go side by side and reinforce each other, additional economic and sector work *is recommended to better document links between poverty reduction and ecological balance in India* in a special study. The study would incorporate policy and project issues, including analysis of the improving ownership and concern, consequences of incorrect pricing of natural resources, energy, and alternative resource uses.

Global Public Policy

5.10 ***Eight – Increased integration of global issues.*** Increased integration of global environmental concerns in the country portfolio lead to both significant global as well as national benefits. As a major source of greenhouse gases (especially from coal-based power plants), and one of the few ozone producing countries, as well as an country with looming extinctions of some of the greatest biological diversity, the Bank global environmental strategy for India would benefit from better mainstreaming of global environmental sustainability. The Bank should continue to encourage GEF projects in India.

Environmental Components of GOI Eighth Five-Year Plan[1]

Strategy	***Means***
Protection strategy	Raising awareness, strict enforcement of laws, impact assessments
Regulation of ongoing activities	Reporting pollution sources, strengthen regulation agencies, provide comprehensive and realistic standards, industry incentives, public participation
Regeneration and restoration of degraded ecosystems	Regenerate and restore the ecosystem by those responsible for degrading it
Decentralization	Village-level decisions
Development and sharing of an understanding of nature and natural processes	Redirect research toward relevant priorities, training and education
Formulation of national policy	NEAP
Co-ordination of Government Action	Alter activities in irrigation, energy, agricultural, and rural development to promote sustainability
"Accountability"	Development of suitable methodology for quantifying environmental costs and benefits
Monitoring the environment	Both by government and people's organizations

1. Eighth five-year plan: 1992-1997, Government of India, Delhi.

GOI National Environmental Action Plan[1]

NEAP Priorities

- Conservation of and sustainable utilization of biodiversity in selected eco-systems, including forests, mangroves, wetlands, coral reefs, and mountain ecosystems.
- Afforestation, wasteland development, conservation of soil and moisture, and ensuring that w ater resources are not polluted.
- Control of industrial and related pollution with an accent on the reduction and/or
- Management of wastes, particularly hazardous wastes.
- Improving access to clean technologies.
- Tackling urban environmental issues.
- Strengthening scientific understanding of environmental issues, as well as structure for training at different levels, orientation and creating environmental awareness, resources assessment, water management problems, etc.
- Alternative Energy Plan.

NEAP Strategies: *Economic*

- Intensification of industrial and non-industrial pollution control measures
- Facilitating a process of switch over by our small scale industries to cleaner production process and technologies at the least social cost.
- Tax reform that provide fiscal incentives for environmental protection (credit for waste minimization, reduction of custom duties for facilitating technology upgrading)
- Improve the rate of cess (Water Pollution tax) collection from all categories of industrial units, rather than confine collections to thermal power stations, integrated steel plants, fertilizer plants, petroleum refineries, etc., and extend the ambit of cess to cover more sectors in the rural areas including agriculture.

NEAP Strategies: *Programmatic*

- Strengthen the env ironment impact assessment process by creating the base for drawing up 'Regional' Environmental Impact Assessment profiles based on studies of carrying capacity and regional/local siting plans through a process of popular participation.
- Transform the EIA into a basic tool of decision making at the national, regional, and local levels and in the establishment of systems of Natural Resource Accounting and developing Environmental Statistics for the seven priority areas.
- Develop a tax base for environmental protection in the country
- More scientific research and development institutions
- Training programs
- Organizational development
- Improved environmental services and integration of environmental consideration into the programs for economic development.
- Further capacity building, developing capacity in the context of sustainable development, which results cooperation within more global schemes. Global treaties have led to the evolution of schemes in the Government both in an organizational and non-organizational aspects, ideas evolve from such proposed projects from GEF and Capacity 21 of UNDP.

1. Ministry of Environment and Forests, Government of India. National Environmental Action Plan. December 1993. Report no E0026. 117-140

Environmental Components Of India Country Assistance Strategies

	Issues Identified	*Environmental Strategy and Objectives*	*IBRD/IDA Fiscal Program*
1988[1]	* environmental problem seen as rural problem (while no brown issues are mentioned) (¶ 68) * identifies some linkages to rural poor * Government lacks implementation capacity (¶ 117)	"The Bank does not yet have an environmental strategy for India." CAS states an environmental assessment (i.e., ESW study) is key starting point. Through current and future project activities designed to directly or indirectly "preserve and enhance India's resource base" the Bank is addressing degradation Statement made that there is "possible" assistance to capacity building Lending for rainfed agriculture, and urban water supply are the only specific measures identified. "Close attention to environmental issues" will be paid indirectly through lending in industrial, energy, and infrastructure projects. (taken from ¶ 116 and ¶ 117)	IBRD Lending for coal efficiency ($250 M) and urban sanitation ($100 M), or 4% of total lending for FY88-92 IBRD lending for Environmental Sector Review for $35 M, or 4% of IBRD ESW spending IDA lending for urban sanitation of $300 M or 7% of total lending IDA spending on ESW Environment/ Indigenous Energy work for $30 M, or 3% of total IDA ESW spending
1991[2]	* recognition that GOI lacks institutional capacity to address environmental problems and "depletion of the [sic] India's resource base . . . is seriously impairing the overall quality of life." * Pressure on natural resource base will intensify with continued population growth (¶ 21)	Agricultural strategy makes a general statement that conservative resource management is seen as one of the "critical areas for improving agricultural performance" "Future assistance in {the environment} will be formulated within the framework of an NEAP" "Increased attention is being paid to environmental issues . . .through the application of Environmental Assessments" (taken from ¶ 71 and ¶ 72)	ESW: forest and energy policy, agricultural sector reviews ($565 M or 43% of total for FY90-93 specific issues: industrial pollution, water supply, global issues, institutional arrangements (strengthen central and state agencies) IBRD/IDA projects: industrial pollution, rainfed agriculture, forestry ($150 M) urban water supply and sanitation ($1.00 B), totaling $1.25 B or 9.4% of total lending for FY90-95 Again, lending for rainfed agriculture, and urban water supply are the only specific measures identified as a mechanism to "preserve and enhance resource its base through projects"
1993[3]	CAS is sector specific: * Urban – lack of environmental services for slums and the increasing urban population are deteriorating the environment	To satisfy the Bank's requirements in India, the "focus will be on implementing environmentally sustainable technologies and on increasing GOIs {institutional} capacity." ESW: promote environmentally sound transport policies and technologies (¶c21), sustainable development, and foster sustainable development of energy	IBRD lending for projects with Environment and Natural Resources as Primary Objective: $200 M, or 4 % of total lending for FY94-97 IDA lending for projects with Environment and Natural Resources as Primary Objective: $950 M, or 21% of

1. India – Country Strategy Paper, June 22, 1988. Country Operations Division, India Department, World Bank.

2. India: Country Strategy Paper: Draft, February 8, 1991. Country Operations Division, India Department, World Bank.

3. Country Strategy Paper – India, December 15, 1993, South Asia Regional Office, World Bank.

	Issues Identified	*Environmental Strategy and Objectives*	*IBRD/IDA Fiscal Program*
	deteriorating the environment * energy – environmental externalities such as emission and enforcement are problems * rural – sector has "environmental repercussions induced by distortions in incentive structure . . . and weakness in the management of natural resources (¶22)	sustainable development, and foster sustainable development of energy ESW: study of Agro-industry development Energy sector states need to emphasize renewable energy sources and environmental improvements, (¶c28) review environmental issues in energy sector (¶ c19), and provide incentives for energy reform (¶c15) Urban sector notes the need for decentralization, land reform and land titling to improve environment (¶c32) and take into explicit account impact of policy changes and investments on urban environmental quality (¶c24)	total lending Financing Industrial Pollution Control, state-level forestry development programs, water resource consolidation, renewable energy development, and demand management programs in energy sector (Box 1) ESW costs were not estimated
1995[4]	* Water resource management * Overexploitation and loss of forests * coupled with weak state management policies * Regulatory compliance of standards is weak (from Attachment 2)	Priority has been given to environment - poverty linkage: "Considerable attention is being paid to the management of natural resources which have a strong positive impact on the living standards of the poor – conservation and sustainable utilization of biodiversity, soil and water conservation, and industrial pollution control." (¶ 70), and new lending program should support among other areas; the sustainable use of India's natural resources (¶ 9) ESW: ongoing work on environmental issues in energy sector and more generally in "sustainable development are leading to expanded lending in this program area." (¶ 40) Developing Projects: *Discussion of possible projects for environmental capacity building, including policy, monitoring, and financing (¶ 70) Improving management of water resources (¶ 31) *Project being developed with GEF for an eco-development strategy in 7 protected areas (¶ 49)	ESW for environment: $742 thousand, or 5.5% of total projection for FY94-98 No IBRD/IDA lending programs for specifically for environment
1997[5]	Bank's past approach lacked a strategic approach, requiring developing dialogue with government and stakeholders, and exploiting win-win situations.	'do no harm' policies (¶ 51) integrating environmental issues into sector policies (¶ 51) support India in complying with global treaties (¶51) environmental strategy in FY99 (Annex 6) forestry policy review in FY99 (Annex 6) (from Annex 1:) strengthen forestry and biodiversity management	IBRD/IDA lending for environment sector is $50 M, or 0.4% of total lending, for FY97-2000 ESW not estimated

4. Country Assistance Strategy, May 19, 1995. Country Department II, South Asia Region, World Bank. Report no. 14509.

5. India-Country Assistance Strategy, December 19, 1997. Country Department II, South Asia Region, World Bank. Report no. 17241.

Issues Identified	*Environmental Strategy and Objectives*	*IBRD/IDA Fiscal Program*
	abate various pollution sources	
	mitigate the environmental impact of infrastructure investments	
	Develop more effective management of natural resources	
	Implement national forest policy	
	Support biodiversity, including coastal zone management	
	Strengthen GOI pollution control	
	Create economic incentives for pollution abatement	
	Promote clean fuel and power alternatives	
	Explore renewable energy and energy efficiency	
	Expand investments in sanitation	
	Adopt pro-active approach in EAs	

Consistency Of CAS With GOI And World Bank Environmental Agenda

CAS	*Consistency with GOI (NEAP and Five Year Plan)*[1]	*Consistency with Bank environmental agenda*
1988	Modest: * Released before NEAP completed * Critical projects are given attention * Problems mentioned in most sectors are consistent with GOI * Statements are general, not enough specific targets identified	Modest: * Global issues not mentioned * Mainstreaming not mentioned
1991	Modest: * Released before NEAP completed * Bank did not assist in funding NEAP though CAS stated it would	Modest: * Global issues not mentioned * Mainstreaming not mentioned
1993	Modest: * Emphasis on industry, transport and other pollution sources * Does not adequately address problems in some sectors such as forestry, and water resources	Modest: * No capacity building mentioned * 'Do no harm' only mentioned for industry energy, and transport sectors * Global issues not mentioned * Mainstreaming not mentioned
1995	High: * More ESW could be defined to achieve goals, * Environment not yet defined as sector	Substantial
1997	High: * Comprehensive diagnosis and uses integrative strategies * However, sector funding may be inadequate	Substantial

Economic and Sector Work Described in CAS

CAS	*Environmental ESW work prescribed*
1988	Carry out a comprehensive environmental assessment through a series of studies over time
	Examine possibilities of enhanced role for NGOs
1991	ESW: forest and energy policy, agricultural sector reviews
	specific issues: industrial pollution, water supply, global issues, institutional arrangements (strengthen central and state agencies)
1993	Special emphasis on cross-cutting themes, including environmental sustainability:
	Strategy ensures EAs are carried out in accordance to India's laws, and
	EAs to be carried out in collaboration with NGOs and project implementing agencies
	Seek adjustments in national standards and processes in order to satisfy Bank requirements
	Focus on implementing sustainable technologies and on
	Increasing government's capacity to identify, design, implement and monitor environmental initiatives
	CEM will provide critical assessment of NEAP strategy for dealing with priority issues, paying particular attention to community and beneficiary participation
1995	Completed sectoral reviews in Irrigation, and Forestry are basis for future dialogue
	Upcoming agricultural strategy review (FY96) will also facilitate discussions for improvements
1997	Studies of individual states' environmental issues

1. Ratings scale: high, substantial, modest, negligible.

Economic And Sector Work Publications Since 1988

Report Title	*Dept.*	*Year*	*Some major conclusions*
Sector and Policy Reviews:			
Forestry policy	OED	ongoing	Unavailable
Water resources	OED	ongoing	Unavailable
Environmental issues in the power sector	ESMAP	1998	pricing scheme undervalues resource
Policy and Issues in Forestry sector	SAS	1993	overexploitation and reliance on fuelwood are major problems, macroanalyses fail to paint the whole picture
Irrigation sector	SASRD	1991	mediocre performance because of poor sector planning and financial management, inadequate water management, and a government monopoly
Water resources sector I	SASRD	1998	see text
Research:			
Urban air management strategy in Asia: Greater Mumbai report	SASEN	1997	planning strategy
Health effects of air pollution in Delhi	DECRG	1997	direct causal links found
Inspections and emissions in India	DECRG	1997	
Does environmental regulation matter?: Determinants of the location of new manufacturing plants in India in 1994	DECRG	1997	Location is more affected by level of existing business activity than environmental regulation
Social assessment in World Bank and GEF funded biodiversity conservation	ENV	1997	increased participation would improve project performance
India's Environment; Taking stock of plans, programs, and priorities	SAR	1996	see text
Cost of inaction: Valuing the economy wide cost of environmental degradation in India	SASEN	1995	-expensive health effects -land degradation is most costly
Water conservation and pollution control in Indian industries	SAS	1994	fiscal incentives are essential
Carbon taxes, the greenhouse effect, and developing countries	DECRG	1992	-global carbon tax would be difficult to administer -national carbon tax can be cost-effective
Windfarm pre-investment study	ESMAP	1992	proposes replicable project framework
Pesticide externalities, comparative advantage, and commodity trade	SAS	1992	integrated pest management is most feasible and environmentally method of control
How restricting carbon dioxide ad methane emissions would affect the Indian economy	SAS	1992	-model found profound negative effects -various restriction forms may have different effects
Opportunities for commercialization of non-conventional energy system	ESMAP	1988	
Workshop Proceedings:			
Integrated approach to vehicular pollution control in Delhi	SASEN	1998	discussion of control mechanisms
Clean Coal Initiative		1996	discussion of environmental efficiency

Environment Sector Projects

Project Name	*Approval FY*	*Proj. ID*	*Div*	*Env A Cat*	*IBRD/IDA Amt (USD mill)*	*Implement Progress*	*Objectives Progress*	*At Risk Category*
Watershed – Plains	1990	9860	SASRD	D	62	Satisfact	Satisfact	Non-risky
Watershed – Hills	1990	9882	SASRD	D	88	Satisfact	Satisfact	Non-risky
Industrial Pollution Control	1991	9906	SASEN	D	155.6	Satisfact	Satisfact	Non-risky
Dam Safety *	1991	9877	SASRD	B	153	Satisfact	Satisfact	Non-risky
Maharashtra Forestry *	1992	10390	SASRD	D	124	Satisfact	Satisfact	Non-risky
Uttar Pradesh Sodic Lands Reclamation	1993	9961	SASRD	B	54.7	Satisfact	Satisfact	Non-risky
Renewable Resources	1993	10410	SASEG	A	190	Satisfact	Satisfact	Non-risky
Forestry Research and Education	1994	10448	SASRD	C	47	Satisfact	Satisfact	Non-risky
Andhra Pradesh Forestry	1994	10449	SASRD	B	77.4	Satisfact	Highly Sat	Non-risky
Industrial Pollution Prevention	1995	10463	SASEN	A	168	Unsatisfact	Unsatisfact	Actual
Madhya Pradesh Forestry	1995	10506	SASRD	B	58	Satisfact	Satisfact	Non-risky
Bombay Sewage Disposal	1996	10480	SASIN	A	192	Satisfact	Satisfact	Non-risky
Hydrology	1996	10485	SASRD	C	142	Satisfac t	Unsatisfact	Actual
Coal Environmental and Social Mitigation	1996	43310	SASSD	C	63	Unsatisfact	Unsatisfact	Actual
Ecodevelopment	1997	36062	SASRD	B	28	Unsatisfact	Unsatisfact	Actual
Environmental Capacity Building Technical Assistance	1997	43728	SASEN	C	50	Unsatisfact	Unsatisfact	Actual
Uttar Pradesh Forestry	1998	35169	SASRD	B	52.9	Satisfact	Satisfact	Non-risky
Kerala Forestry	1998	49477	SASRD	B	39	Satisfact	Satisfact	Non-risky
Delhi Urban Environmental Infrastructure IM	2003	10548	SASIN	C	200	n/a	n/a	n/a
Total : 19 projects					1944.6			

***Source*:** World Bank Intranet site for South Asia Region Operational Data (5/25/00)
note: these projects are also included in Annex H

* recently closed

Global Environment Facility (GEF) and Montreal Protocol projects

Project Name	*Proj. ID*	*FY*	*Type*	*Division*	*Env Cat*	*Status*	*Loan Amount*	*Grant Amount*
Alternate Energy	9583	1993	GEF	SASEG	A	Active	190	26
Ozone Depletion I	9585	1995	MPT	SASEN	B	Active	0	1.3
Ozone Depletion II	31829	1995	MPT	SASEN	B	Active	0	50
Ecodevelopment	9584	1997	GEF	SASRD	B	Active	28	20
Total: 4 projects							218	97.3

***Source*:** World Bank: ESSD Core database and project reports

Completed Projects With Environmental Assessment Category A And B

Project Name	*Env Cat*	*Proj. ID*	*Division*	*Approval FY*	*IBRD/IDA Loan (USD mill)*	*OED overall rating*	*OED Bank Performance Rating*
Petrochemicals Development	A	9885	SASEN	1991	245	Satisfactory	Satisfactory
Hyderabad Water Supply	B	9890	SASIN	1990	89.9	Satisfactory	Satisfactory
Private Power Utility (TEC)	B	9900	SASEG	1990	98	Satisfactory	Satisfactory
Cement Industry Restructuring	A	9981	SASFP	1990	300	Satisfactory	Highly Satisfactory
Jharia Mine Fire Control	B	10411	SASEG	1992	12	Marginally Satisfactory	Satisfactory
Gas Flaring Reduction	B	10381	SASEG	1991	450	Satisfactory	Satisfactory
Maharashtra Rural Water Supply	B	10369	SASRD	1991	109.9	Marginally Satisfactory	Unsatisfactory
Private Power Utility (BSES)	A	9993	SASEG	1991	200	Marginally Satisfactory	Satisfactory
Maharashtra Power II	B	10400	SASEG	1992	350	Unsatisfactory	Satisfactory
Total: 9 projects					1854.8		

***Source*:** World Bank: ESSD Core database, OED

Active And Pipeline Projects With Environmental Assessment Category A Or B Rating

Project Title	*Proj. ID*	*Approval FY*	*Env Cat*	*Loan Amt (USD mill)*
Agriculture				
Punjab Irrigation & Drainage	9965	1990	B	165
First Agricultural Development (Tamil Nadu)	9958	1991	B	112.8
Shrimp and Fish Culture	9921	1992	B	85
Rubber	9959	1993	B	92
Uttar Pradesh Sodic Lands Reclamation	9961	1993	B	54.7
ADP – Rajasthan	10407	1993	B	106
Bihar Plateau	10408	1993	B	117
Water Resources Consolidation	9964	1994	A	258
Andhra Pradesh Forestry	10449	1994	B	77.4
Tamil Nadu Water Resources Consolidation	10476	1995	A	282.9
Madhya Pradesh Forestry	10506	1995	B	58
Orissa Water Resources Consolidation	10529	1996	A	290.9
Andhra Pradesh Irrigation III	35158	1997	B	325
Uttar Pradesh Forestry	35169	1998	B	52.9
Uttar Pradesh DIV Agricultural Support	35824	1998	B	129.9
Kerala Forestry	49477	1998	B	39
Uttar Pradesh Sodic Lands II	50646	1999	B	194.1
Rajasthan Water Resources Consolidation	40610	2000	A	250
Rural Water V	55454	2000	B	75
Maharashtra Rural Water Supply	50653	2003	B	150
Education				
Power and Energy				
Power Utilities Efficiency Improvement	9888	1992	B	265
Northern Region Transmission	9982	1990	B	485
Renewable Resources	10410	1993	A	190
PGC Power System	10416	1993	B	350
NTPC Power Generation	10423	1993	A	400
Orissa Power Sector	35170	1996	B	350
Coal Sector Rehabilitation	9979	1998	A	532
Haryana Power APL-I	35160	1998	B	60
Andhra Pradesh Power APL I	49537	1999	B	210
Haryana Power APL-II	51871	2000	B	200
Haryana Power APL III	59148	2001	B	200
Environment (see also Annex F)				
Dam Safety	9877	1991	B	153
Finance				
Financial Sector Development	10563	1995	B	700
Infrastructure and Finance (IL&FS)	39935	1996	A	205
Industry				
Industrial Pollution Prevention	10463	1995	A	168
Mining				
Population, Health & Nutrition				
Malaria Control	10511	1997	B	164.8
Orissa Health Systems	10496	1998	B	76.4

Project Title	*Proj. ID*	*Approval FY*	*Env Cat*	*Loan Amt (USD mill)*
Maharashtra Health Systems	50651	1999	B	134
Uttar Pradesh Health Systems	50657	2000	B	200
Social Protection				
Transportation				
National Highways II	9946	1992	B	306
State Highways I(Andhra Pradesh)	9995	1997	B	350
Gujarat State Highways	10566	1999	B	380
Rajas State Highways	50640	1999	B	360
West Bengal State Roads	50650	2002	B	380
Water Supply & Sanitation				
Karnataka Water Supply & Environmental Sanitation	10418	1993	B	92
Madras Water Supply II	10461	1995	A	275.8
Bombay Sewage Disposal	10480	1996	A	192
Uttar Pradesh Rural Water	10484	1996	B	59.6
Chennai Urban Water III	42744	2000	A	170
Hyderabad Urban Water II	42755	2000	B	180
Other				
Andhra Pradesh Emergency Cyclone	49301	1997	B	150
TOTAL: 55 projects				10,854.2

***Source*:** World Bank: ESSD Core database

Comparison Of Projects At Risk Ratings By Sector In The Active Portfolio

	Count of projects			
Sector	***ACTUAL***	***POTENTIAL***	***NONRISKY***	***Grand Total***
Agriculture	5	4	10	19
Economic Policy	0	0	1	1
Education	0	0	7	7
Electric Power & Energy	2	1	5	8
Environment	3	0	0	3
Finance	0	0	2	2
Population, Health & Nutrition	5	2	9	16
Mining	2	0	0	2
Public Sector Management	0	0	0	1
Social Protection, etc.	2	2	0	4
Telecommunication	0	0	1	1
Transportation	1	0	4	5
Urban Development	0	0	1	1
Water Supply & Sanitation	0	0	4	4
Grand Total	20	10	44	74

***Source*:** World Bank portfolio status intranet site (7/9/00)

Summary Evaluation Of Bank Assistance For The Environment

Performance Factor	*Overall*	*Safeguards*	*Stewardship*	*Mainstreaming*	*Global Policy*
Aggregate assistance	Moderately Satisfactory	Moderately Satisfactory	Moderately Satisfactory	Moderately Unsatisfactory	Moderately Unsatisfactory
Outcomes and impacts significance–Results	Moderately Satisfactory	Moderate	Moderate	Negligible	Moderate
Relevance of results in relation to the country's development strategy and the Bank's CAS?	Substantial	High	Moderate	Moderate	High
Efficacy of results in relation to Bank goals?	Modest	Moderate	Moderate	Moderate	Moderate
Efficiency in achieving the results (balance of benefits and costs, incl. Externalities)	Modest	Moderate	Moderate	Negligible	Substantial
Sustainability of results achieved the long term?	Uncertain	Moderate	Moderate	Negligible	Moderate
Benefits of results on the poor	Moderate	Moderate	Substantial	Negligible	Negligible
Monitoring and evaluation provisions?	Moderate	Substantial	Moderate	Moderate	Moderate
Institutional Development Impact	Modest	Moderate	Negligible	Moderate	Negligible
Bank Performance	Moderately Satisfactory	Moderately Satisfactory	Moderately Satisfactory	Moderately Unsatisfactory	Moderately Satisfactory
Borrower Performance	Moderately Satisfactory	Moderately Satisfactory	Moderately Unsatisfactory	Moderately Unsatisfactory	Moderately Satisfactory
Other Donor's Performance	Not available	Not available	Not available	Not available	Not available
Exogenous Factors	No Effect	Positive	No Effect	No Effect	Positive

Ratings categories for performance: Highly Satisfactory, Satisfactory, Moderately Satisfactory, Moderately Unsatisfactory, Unsatisfactory, Highly Unsatisfactory; and outcomes: High, Substantial, Moderate, Negligible

Summary of Discussion at CAE Workshop on Environment Sector

April 4, 2000

1. Participants generally welcomed the candor and openness of the Evaluation Report and its willingness to admit some errors in the past. Beyond that, they expressed a number of concerns about the approach in the evaluation and the performance on the ground. It was one of the more vocal and critical of the workshops, and a number of the reactions were repeated in the general session.

2. Several speakers commented on the difficulty of obtaining data on the environmental projects from the Bank in general and the office in Delhi in particular. The criteria for measurement were also unclear to the participants, so it was hard to judge the validity of the conclusions This made it difficult to give adequate commentary on the report, since there was no independent way to analyze the underlying information and arrive of possibly different conclusions. Since the overall conclusion was that the performance had been moderately satisfactory, the major focus should be on how to improve performance in the future. The rating of the Bombay suburban electricity project (BSES) and the TEC power projects were challenged specifically as being too generous. It was argued that the EA process did not prevent bad impacts as hard decisions were too frequently avoided, and it was not clear where the responsibility lay between the government and the Bank.

3. The evaluation was viewed by some as being too narrowly vertical and not adequately covering a number of impacts related to sectors outside the environment. Secondary effects were not adequately covered, for example the health impacts. The ten workshops seemed to fragment the discussion by sector and failed to look at the interactions across sectors and broader impacts. It was noted that the wrap-up session would be the place to address the interaction issues. The allegation of too narrow a view of impacts was also applied to projects. It was suggested that the Environmental Assessment process should look at impacts of the assessed project on other projects and activities, and not be confined to the narrow limits of the project itself. The Bombay water project was cited as an example. It brought water from tribal lands, and those impacts were not taken into account. The mining project affecting the Bengal Tiger habitat was also cited for taking too narrow a view of its impacts and for not addressing issues of indigenous peoples adequately. It had been stopped and then restarted without adequate explanation to the parties concerned, according to the speaker.

4. There were several comments about the application of Bank environmental guidelines. Some complained that the goalposts were moved too frequently and it was hard determine what to judge performance against, the original or the new guidelines. It was also hard for the local participants to keep up with the changes in approach emanating from Washington. On the other hand, there were strong complaints that the Bank's task managers did not insist that their own project entities followed the Bank's guidelines (pollution emissions in some power projects were cited). There were also charges that Bank task managers had urged (insisted) that Indian environmental regulations be eased or waived to facilitate certain Bank projects. Changes in land use rules and zoning were cited. In view of the severity of this charge, specific

documentation was requested and promised. Once it is received, it will be possible to determine the validity of the charges.

5. Several participants urged that monitoring and evaluation of projects be improved, presumably for all projects, not just Bank supported ones. There was also interesting in knowing more about how the Bank's environmental activities had affected compliance with international environmental conventions. The growing emphasis on poverty impacts in environmental projects was welcomed, and it was noted that forestry projects were very important in that regard. It was not clear whether they were included in this evaluation, or should have received more attention. Several interventions welcomed increased participation in project preparation, but commented that it was not yet very well done.