

Environmental Planning & Management in India

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Abstract: India's economic growth over the past few years has raised the prospect of eliminating extensive poverty within a generation. But this growth has been clouded by a degrading physical environment and the growing scarcity of natural resources that are essential for sustaining further growth and eliminating poverty. It is no coincidence that the poorest areas of the country are also the most environmentally-stressed regions, with eroded soils, polluted waterways, and degraded forests. Simultaneously, rapid growth has unleashed greater public awareness and an unprecedented demand for the sound management of natural resources including air, water, forests, and biodiversity. Environmental sustainability is rapidly emerging as the next major development and policy challenge for the country, and will be central to the 12th Five Year Plan which is currently under preparation. This paper attempts to discuss various issues related with environmental planning & management in India such as challenges, environmental governance, government priorities, list of active projects, projects in pipeline & ongoing research.

Keywords: Environmental planning & management, environmental governance, environmental sustainability.

I. Overview

The World Bank's environmental stocktaking exercise commenced in January 2014. This report covers the following priority areas identified in the Environment Action Program--India issued by the Government of India in January 2014

- 1) conservation and sustainable utilization of biodiversity in selected ecosystems; 2) afforestation, wasteland development, conservation of soil and moisture, and prevention of ground and surface water pollution;
- 3) control of industrial pollution, with emphasis on the reduction and management of wastes;
- 4) access to clean technologies;
- 5) urban environment issues;
- 6) development of an alternative environmental energy plan; and
- 7) scientific understanding of environmental issues, training, creation of environmental awareness, resource assessment and water management problems.

The analytical framework for the stocktaking consisted of assessing each priority area to determine whether issues additional to those identified by the government required attention; to understand better the major programs developed by the government; to assess the range, type, and impact of the support provided by the World Bank and other donors; and to outline policies (legal, regulatory, economic), institutional aspects (administrative, organizational), technical and scientific concerns, and financial areas for further concentrated actions. Estimates were also made of the magnitude of the economic costs associated with environmental degradation.

II. The Challenges

2.1 Pollution: Water, land and air contamination associated with growth are increasing exponentially. Rapid investment in the manufacturing sector, that includes 17 highly polluting industries that are on the Central Pollution Control Board's "Red List", has fuelled this growth. The share of the most polluting sectors in India's exports has increased dramatically during the last decade suggesting that India could be emerging as a net exporter of pollution-intensive commodities. These trends indicate the need for greater investment in environmental management.

2.2 Natural Resources: Ecosystems and Biodiversity: In rural areas, poverty has become intertwined with resource degradation - poor soils, depleted aquifers and degraded forests. To subsist, the poor are compelled to mine and overuse these limited resources, creating a downward spiral of impoverishment and environmental degradation. There is growing pressure to better protect India's pockets of mega-biodiversity which are increasingly recognized as being of immense significance for global biodiversity, yet are increasingly threatened. Greater investment in the protection of these natural assets would yield a double dividend of poverty

alleviation and the improved sustainability of growth.

2.3 Coastal Zone Management: India's coastal zone is endowed with fragile ecosystems including mangroves, coral reefs, estuaries, lagoons, and unique marine and terrestrial wildlife, which contribute in a significant manner to the national economy. Economic activities such as rapid urban-industrialization, maritime transport, marine fishing, tourism, coastal and sea bed mining, offshore oil and natural gas production, aquaculture, and the recent setting up of special economic zones have led to a significant exploitation of these resources. In addition to the contribution of increased economic activity, coastal development and livelihoods are under stress due to a higher incidence of severe weather events, which have the potential to inflict irreversible damage to lives and property, for communities that are traditionally poor and vulnerable to economic shocks.

2.4 Environmental Governance: The pace of infrastructure investments, which could reach \$500 billion in the 12th Five Year Plan, calls for integrated and coordinated decision-making systems. This is made especially challenging by fragmented policies and multiple institutional legal and economic planning frameworks, with often conflicting objectives and approaches. **Environmental Health:** The health impacts from pollution are comparable to those caused by malnutrition and have a significant impact on the productivity, health and the quality of life. Environmental health challenges are largely caused by poverty-related risks associated with poor access to basic services, such as safe drinking water and sanitation, and poor indoor air quality. The contamination of surface waters and the spread of pathogens are promoted by the alteration of catchments and watersheds that have accompanied rapid urbanization and intensive farming. Despite significant improvements in rural water supply and sanitation over the past few decades, water-related diseases still account for a large number of avoidable child deaths every year.

2.5 Climate Change: India is highly vulnerable to climate change due to a combination of; (i) high levels of poverty, (ii) population density, (iii) high reliance on natural resources, and (iv) an environment already under stress (for instance water resources). By mid-century, the mean annual temperature in India is projected to increase 1.1° to 2.3 ° C under the moderate climate change scenario of the Intergovernmental Panel on Climate Change (A1B), with anticipated deterioration of agro-climatic conditions. In the higher portion of that range, the loss to Indian GDP would be greater than the world average, and could be close to 5 %. Simultaneously, there is likely to be greater variability in rainfall, leading to higher risk of increased frequency and severity of droughts, floods and cyclones.

Reflecting the size of its economy and population, India is ranked as the sixth largest emitter of greenhouse gas emissions in the world. However, by most measures, India would be classified as a low carbon economy. It has: (i) a low intensity of emissions per unit of GDP (on par with the world average); (ii) per capita emissions that are among the lowest in the world (at about 10 percent of the developed country average) and (iii) forest cover that has stabilized. However, India's emissions are set to grow substantially due to its sustained economic growth.

2.6 Government Priorities

India has made a substantial effort in attempting to address environmental challenges. It has enacted stringent environmental legislation and has created institutions to monitor and enforce legislation. The National Environmental Policy (NEP) recognizes the value of harnessing market forces and incentives as part of the regulatory toolkit, and India is one of only three countries worldwide which has established a Green Tribunal to exclusively handle environmental litigation. On environmental governance, the GOI is contemplating the establishment of the National Appraisal and Monitoring Authority (NEAMA) to carry out environmental appraisals.

During the current 11th Five Year Plan, the Government issued regulations to promote an integrated and inclusive approach to coastal zone planning and the sound management of hazardous wastes, issued a number of critical policies (e.g. revised river conservation strategy and the National Biodiversity Plan), and established a Wildlife Crime Control Bureau to supplement existing conservation measures for species at risk, such as tigers. In response to the threat of climate change, the Prime Minister's National Council on Climate Change issued India's first comprehensive National Action Plan in June 2008. In the run-up to Copenhagen, India also volunteered its own target to reduce carbon intensity by 20 to 25 percent by 2020 against a 2005 baseline and established an Expert Group on Low Carbon Growth to identify how best to meet this challenge.

World Bank Support

Responding to these pressures, the World Bank has developed a multi-pronged approach to address environmental issues and mitigate its lending risks: A Sound Program of Knowledge Products and Lending: This

seeks to improve the knowledge base for environmental solutions, and to pilot a number of programs to address key environmental challenges. Risk Management and Mainstreaming through Cross Support Activities: Through the World Bank's safeguard policies, a sound mechanism for decision making has been developed. A number of tools to enable the integration of environmental management in project design, and minimize the environmental footprint of the Bank's operations have also been developed. Country Systems and Capacity Building Initiatives help build institutional capacity, and include the piloting of country (state) systems for managing risks of World Bank projects.

III. The Vision for Water Conservation

The World Bank is currently developing a new vision for water that strengthens the water practice to deliver on the bold leadership aspirations and meet changing client need. The vision places water at the center of helping people, economies and ecosystems thrive and thus contributing to a world free of poverty. Moving forward the Bank will:

- Strengthen efforts to address climate variability in Bank-financed projects through improved storage and other adaptation measures, flood control, and emergency response preparedness
- Devote more resources to explore and strengthen the linkages between water and other sectors such as energy, agriculture and the environment, and support initiatives that aim at improving water allocation mechanisms and institutions
- Ensure that water considerations are included in country-sectoral planning
- Improve efficiency of water supply systems
- Ensure that the food security agenda considers irrigation and work with clients to improve water efficiency of existing irrigation schemes
- Strengthen the use and supply of data for decision making and dialogue between countries, and facilitate the integration of technologies for more reliable information
- Continue its strong support to institutional reform and capacity building of relevant organizations, and strengthen global water partnerships for lasting impact

3. List of Active Projects

The World Bank has a growing relationship and portfolio in the environment sector. Projects under implementation include the following.

Integrated Coastal Zone Management Project (\$222mn approved June 2010) to help build the appropriate institutional arrangements, capacity and advanced knowledge systems needed to implement the national program on integrated coastal zone management. It will also help pilot this approach in three coastal states, Gujarat, Orissa and West Bengal, through a range of complementary pilots in select coastal stretches to build state-level capacity.

Capacity Building for Industrial Pollution Management Project (\$65mn approved June 2010) to build tangible human and technical capacity in state agencies in Andhra Pradesh and West Bengal for undertaking environmentally sound remediation of polluted sites and to support the development of a policy, institutional and methodological framework for the establishment of a National Program for Rehabilitation of Polluted Sites (NPRPS).

The National Ganga River Basin Authority Project (\$1bn approved in May 2011): to build capacity of its nascent operational-level institutions, so that they can manage the long-term Ganga clean-up and conservation program; and implement a diverse set of demonstrative investments for reducing point-source pollution loads in a sustainable manner, at priority locations on the Ganga.

Biodiversity Conservation and Rural Livelihoods Project (GEF/IDA \$23m approved in May 2011): to develop and promote new models of conservation at the landscape scale through enhanced capacity and institutional building for mainstreaming biodiversity conservation outcomes.

IV. Pipeline Projects

Environmentally Sustainable Development Policy Loan in the State of Himachal Pradesh: The proposed Development Policy Loan will seek to establish a framework for environmental sustainability, which will promote the participation of the state public and private sectors in the National Mission on Enhanced Energy Efficiency, develop a policy and institutional framework for the further development of environmentally

sound hydropower development, and enable sustainable development in a number of key sectors of the economy including: tourism, industry, and agricultural development and horticulture.

Global Environmental Facility (GEF): Following the recent replenishment, the World Bank has been requested to prepare a number of projects to be financed by the GEF, namely: Climate Resilience through Community-Based Approaches in Semi-Arid Areas, Integrated Biodiversity Hotspots and Improvements, Adaptive Management Tools in Sustainable Land Management, and Integrated Ecological Management of the Lakshadweep Sea.

V. Research

Energy Intensive Sectors of the India Economy: Options for Low Carbon Development: The study looks at five sectors of the Indian economy that accounted for three quarters of India's CO₂ emissions from energy use in 2007 – power generation, energy-intensive industries (like iron and steel, cement, fertilizer, refining, pulp and paper etc), road transportation, commercial buildings and residential housing. It presents three carbon emission scenarios, outlining the different growth paths that India could follow from 2007 to 2031 -- the end of the Fifteenth Five Year Plan. Sundarbans Sustainable Socio-Economic Development: The objective of the Non-Lending Technical Assistance is to assess measures that would build resilience of the socio-economic and biophysical system and achieve long term sustainable development. Resilient systems are those having a capacity to adapt when faced with persistent stresses, but the adaptive capacity of those residing in the Sundarbans has been undermined on an ongoing basis. Historic sea level rise from deltaic subsidence, salinity intrusion, flooding and nutrient loss in local soils have all conspired over the past century to render this one of the most hazardous areas in the Indian sub-continent.

India 2030: Vision for an Environmentally Sustainable Future: This study deals with a broader debate on the implications of rapid economic growth on environmental sustainability and the need to rethink India's current institutional arrangements in light of promoting long-term environmental sustainability. The primary objectives of the study are to identify environmental challenges, opportunities and constraints to growth that will emerge in India over the next few decades and suggest policy responses and develop strategies to harmonize the twin objectives of growth and environmental sustainability in urban and ecologically fragile hill areas.

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