USER GUIDE TO TOOLS FOR ENVIRONMENTAL MAINSTREAMING

FINAL REPORT – January 2008

Development Alternatives

Resource Persons for Draft Report

This "Final Report" has been prepared by the Environment Systems Branch of **Development Alternatives (DA)**, in association with the International Institute of Environment and Development, London (IIED). The report has been prepared as a part of a project termed **'IIED-Country Wide Survey on Tools for Environment Mainstreaming for India'**. This report outlines the most commonly used tools for environmental mainstreaming, analyzing the strengths, gaps and challenges.

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TABLE OF CONTENTS

USER GUIDE TOOLS FOR ENVIRONMENTAL MAINSTREAMING

1.0 Background

Sustainable development has come to assume the centre stage for all the developmental activities throughout the world. Though the concept of integrating environmental and social concerns in economic development has only recently been advocated in the developing countries, its fast gaining momentum cannot be overlooked. There exists an inseparable link between poverty and environmental sustainability. Our country, India, is faced with a series of environmental challenges, which have a disastrous effect on poverty and development directly. Since there is an additional responsibility of attaining the Millennium Development Goals, it becomes fundamental for our country to divert its productive resources towards environmental sustainability. In order to strike a balance and comply with the sustainability aspect of development, it is high time that all the stakeholders unite and address this impending challenge. They need to effectively mainstream their work and ideology to ensure environmental integration in developmental policies. Keeping in mind the complexity of the problem that looms ahead of us, International Institute for Environment and Development (IIED) has launched an initiative to produce a 'User Guide', comprising large array of tools and methods available for environmental mainstreaming. This guide will cover a broad spectrum of tools and methodologies available for 'environmental mainstreaming', building upon the stakeholders' experiences - ranging from technical approaches like EIA to more political approaches such as citizens' juries.

The contention is that environmental mainstreaming capacity will be much stronger if stakeholders are able to select appropriate tools and methods. Some tools and methods are widely used and others are still under development; some are easy to do, whereas others demand skills and money; some are effective but others are not. Too many tools are being 'pushed' by outside interests, and too few locally developed (and more informal, or less expensive) approaches are widely known. There is not enough 'demand-pull' information from potential users. Neither is there enough information available that helps them to select the right tools themselves – as opposed to taking what others want to promote.

The User Guide shall provide a focused approach to all the stakeholders in decision-making and policy formulation for executing several developmental tasks. Given the increasing dynamics – in water insecurity, climate change, growth in the ecosystem markets, the rapid expansion of bio-fuels, etc. – such decisions cannot be poorly made, or delayed. The User Guide will, therefore, benefit a wide range of audiences who have to cope with such environmental and developmental dynamics and respond appropriately at the same time. The Guide is likely to include an expanded set of tools and approaches, beyond those that tend to be emphasized by technical experts, e.g. those used for civil society or business actions. Decision-making methods will be offered to help users select the approach that is right for specific problems or tasks. An overview of areas for which all tools tend to be weak or missing will also be prepared, to guide further tool development. The User Guide will provide a key resource for a wide range of actors who will have to address environmental mainstreaming, from senior decision-makers to development practitioners, indicating the tools available for particular tasks and contexts, and identifying the skills required. The proposed User Guide will help donors and

developing country decision-makers and development practitioners alike to identify the appropriate tools in meeting the challenge, particularly tools that are used effectively and valued by developing country users themselves. The 'User Guide' provides an informal mandate for the civil society organizations and the corporate to adopt ethical approaches to environmental management and social improvement.

The report analyzes the views of the concerned stakeholders and depicts the availability, implementation and limitations of the tools in hand. The analysis is based on the real experience of different 'users' of the tools along with that of independent technical experts. It includes informal or traditional approaches and private sector and voluntary innovations, in addition to the governmental or regulatory measures or instruments.

The report aims to address policy makers, civil society organizations, academicians and the corporate sector. It authenticates how these stakeholders can steer their decisions towards attaining environmental sustainability objectives. The study also summarizes the challenges faced by the stakeholders in implementation of environmental integration tools.

Development Alternatives (DA) is partnering with IIED to undertake a survey in India to secure on-the-ground user feedback about the challenges the tool users face, their needs related to integrating environmental concerns as well as their perspectives, pertaining to which the tools may be found to be useful or not.

2.0 Objectives of the Country Study

- To identify and assess environmental integration **tools**, focusing on the 'top five tools' that have been found to be the most effective in environmental mainstreaming in India through the Country Survey.

- To identify the suitability and problems associated with the tools.

Tools

Tools are basically instruments, methods and tactics that are used (individually or in combination) to carry out the above processes to take Environment into consideration in decision-making, e.g. approaches for providing information, assessment, and consultation, analysis, planning, and monitoring so as to have informed decisions.

3.0 Approach and Methodology for the Country Survey

For getting the User's perspective on the most effective processes involved for environmental mainstreaming, a large number of experts were interviewed from all relevant sectors across the country. The basis of the interview was to analyze the application value of various tools and identify the gaps and challenges. The interviews were designed to assess the awareness levels on the existing environmental tools.

The study was divided into three phases:

- **Phase 1: Desk Review**

The project team reviewed the secondary literature to identify and assess the effectiveness of various existing/overlapping tools used by various multilateral organizations, Government, professional association's etc. (both published and web-based). The findings of the literature survey were used to identify the kind of tools used by the key people and decision-makers. The use of various tools for specific tasks was studied, covering organizations across a range of key user groups (for example, Government departments, agencies, NGOs and CBOs, including international NGOs and business communities). The desk review identified specific individuals or categories of persons to interview from each of the categories of organizations within the above range.

- **Phase 2: Design and Development**

Questionnaire Survey

A customized questionnaire survey was conducted, based on a core questionnaire developed by IIED in consultation with the country teams. The questionnaire was sent to selected individuals for their opinions. Based on the questionnaire, a framework was designed for semi-structured interviews. The interview was carried out and it was documented for analysis.

Consultations with individual experts/users

The project team held detailed discussions with individual experts and user agencies to identify effective and preferred integration tools that work and the problems associated with them.

Finalization

The results and inputs were interpreted and analyzed and profiles of particular tools were prepared with relevant user-based perspectives.

- **Phase 3: Preparation of Draft Report**

Analysis of questionnaires and notes from interviews were carried out to distil out the final report on findings, lessons and conclusions.

4.0 Environmental Mainstreaming

Environmental Mainstreaming originates as a core institutional thinking, to capitalize the existing resources to the optimum, with minimum environmental damage. It is a way of incorporating environmental issues into an organizational policy frame-work by:

- Providing the methodology for integrating environmental protection concerns within developmental policies and programmes;
- Providing a platform to the policy-makers on ways to pursue environmental policy interests, in coordination with other development policies and programmes; and
- Active promotion of environmental sustainability in terms of identification, planning, design, negotiation, and implementation of strategies, policies and investment programmes.

Environmental mainstreaming identifies how interventions targeted at environmental and natural resource management can play an integral part in achieving broader development objectives, as well as how initiatives outside the narrowly-defined *Environment Sector* could be taken to support environmentally sustainable development.

5.0 Relevance in India

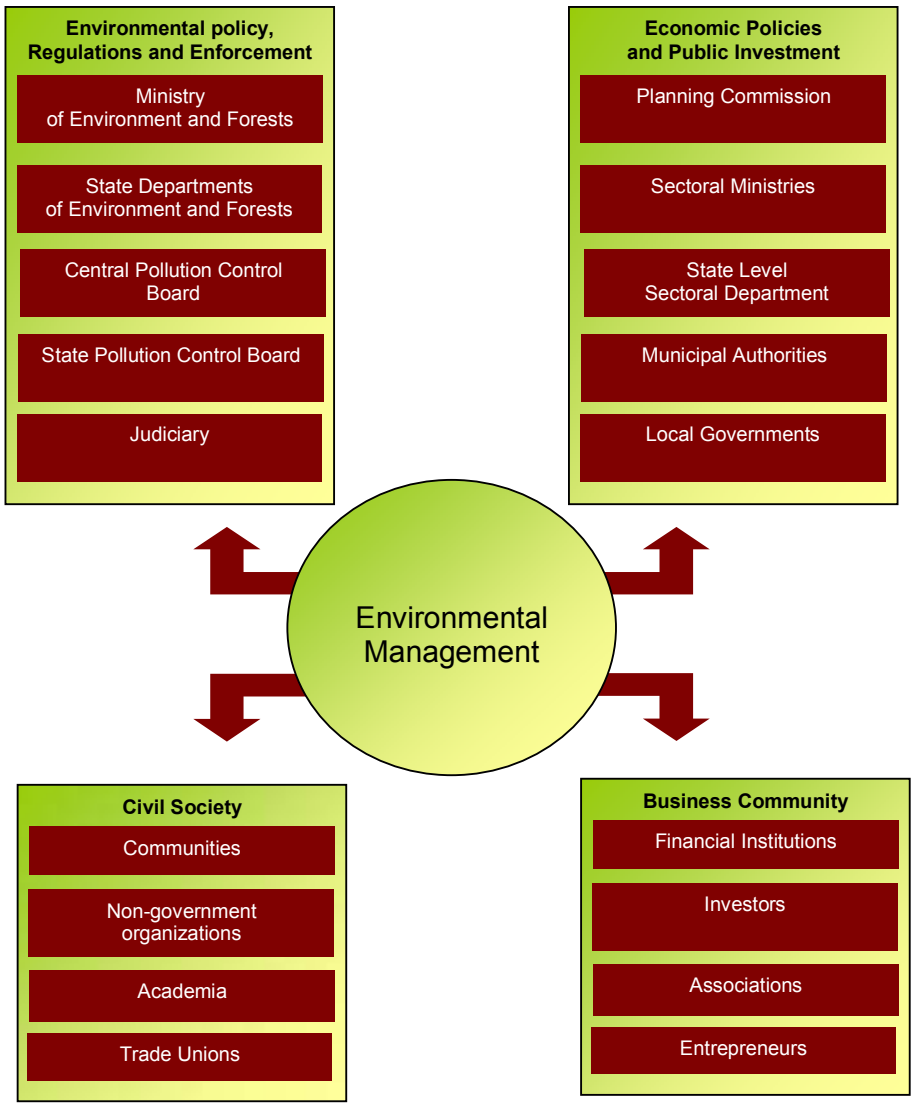
India's development process is on its way to incapacitate the environment. Country's economic prosperity in terms of its GDP at the cost of environment is only making us tread on the path of unsustainability. To clearly understand this, we can say, 'Environment is often a causality of rapid developmental processes.'

In the most recent four-year period – 2003-04 to 2006-07 - India's GDP has grown at an average rate of 8.6 percent a year. In particular, the growth rate during 2006-07 was a splendid 9.4 percent. The national poverty ratio has halved from 36 to 18 percent in less than ten years, from 1994 to 2002 (National Institute of Rural Development, 2003). Even though the robust economic growth has already allowed millions of people to emerge from poverty, yet poverty, disparity and challenges infect our system severely. On one hand, robust economic growth may result in environmental degradation through the extensive use of natural resources and generation of pollution, aggravated by institutional failures while on the other, economic growth permits improvement in environmental quality by making available the necessary resources for environmental investments and generating societal pressures for improved environmental behaviour and institutional and policy change. The condition is even worsened when an incorrect picture is portrayed by conventional monetary estimates of national income and the impacts on the environmental resource base are neglected. Rapid economic growth and the resulting changes in consumption patterns are drastically changing the nature and scale of impact on the country's environment and natural resources, thus testing the carrying capacity of the natural ecosystems, upon which much of the country's economic growth depends. Growth of India's economy is led by the robust performance of the industrial sector, primarily belonging to the 'red category' of major polluting processes designated by the Central Pollution Control Board (CPCB), and has significant environmental consequences. Hence, the challenges that arise are immense and there is a need to capitalize on potential opportunities that benefit both environmental resources and functions along with development priorities.

Keeping pace with the international competition and giving adequate attention to environmental promotion, it is imperative to allow the benefits of environmental mainstreaming take its own course. Hence, emerges the need to integrate environmental concerns in our planning and policy.

6.0 Stakeholders for Environmental Mainstreaming in India

Figure 1: Key Stakeholders for Environmental Management in India



Source: India Country Environment Analysis, World Bank 2007

7.0 Key Actors in Environmental Mainstreaming

Environmental policy, Regulations and Enforcements

Role

- Technical advice, political advice
- Coordination with other ministries
- Environmental policy making, possibly being involved in economic policy making
- Implementing agency for Government programmes/projects
- Monitoring of compliance with regulations
- Service as secretariat to a higher body (which may ensure the link between the ministry and the higher policy making body)
- Environmental education, awareness campaign, etc.
- Environmental database

Economic policies and Public investments

Role

- National development goals/ Five year plans
- Review recommendations
- Release of funds

Civil Society

Role

- Environmental awareness
- Environmental assessment and advocacy
- Community mobilization
- Influencing policy
- Bridging the gap between the people and Government.

Business community

Role

- Credit and risk analysis procedures, to internalize environmental and social costs in investment decisions
- Investment screens or credit criteria to reward companies that minimize social and environmental risks

- Limit access to credit or capital to firms with weak environmental management or poor environmental track records
- Environmental investment plans for pollution abatement
- Setting best practice norms among corporate actors and private sector organizations
- Effective oversight and regulation over private sector development

8.0 Key Considerations for Environmental Mainstreaming

♦ Paradigm shift

For effective mainstreaming, a conceptual shift is required to ensure that environmental mainstreaming should be a primary objective of the development process rather than a mere compliance to environmental standards.

For attaining this, a pro-active and well thought approach is required for investments in policies and projects so that environmental concerns are integrated upfront in development strategies.

♦ Cross Sectoral Approach

A separate Environment Ministry was established with the objective of strengthening the regulatory capacity and supporting specific environmental protection efforts. Although it reinforces environmental protection and conservation as a major priority of the Government, it has led to a faulty perception that addressing environmental issues is the exclusive responsibility of the designated agencies and units.

Therefore, this demands coordinated efforts by all sectors to align their policies and activities towards environmental security by means of mandates, procedures and capacity to meet such accountabilities.

♦ 'Up-stream' to 'Mainstream'

Normally, mainstreaming must occur 'upstream' in the planning process, whether in the context of developing a country strategy, designing a sector reform programme, or planning a specific project. Once development interventions have been selected to address objectives other than environmental sustainability, the opportunity to mainstream may have already been lost. Accordingly, mainstreaming requires revisions to planning processes within institutions to ensure that environmental sustainability is integrated early and systematically into standard decision-making procedures.

♦ Exploring New Horizons

Effective environmental sustainability is enhanced if proposed investment programmes and policies are assessed, taking into account an appropriate ecosystem scale that seldom corresponds to political jurisdictions or the mandates of development agency units. In this regard, full mainstreaming of environmental sustainability would require the consideration of environmental implications outside the region (such as those associated with greenhouse gas emissions), trans-

boundary environmental impacts within the region (such as those associated with biological corridors), and ecosystem scale impacts within countries (as is the case with watershed management).

♦ **Flexibility in implementation**

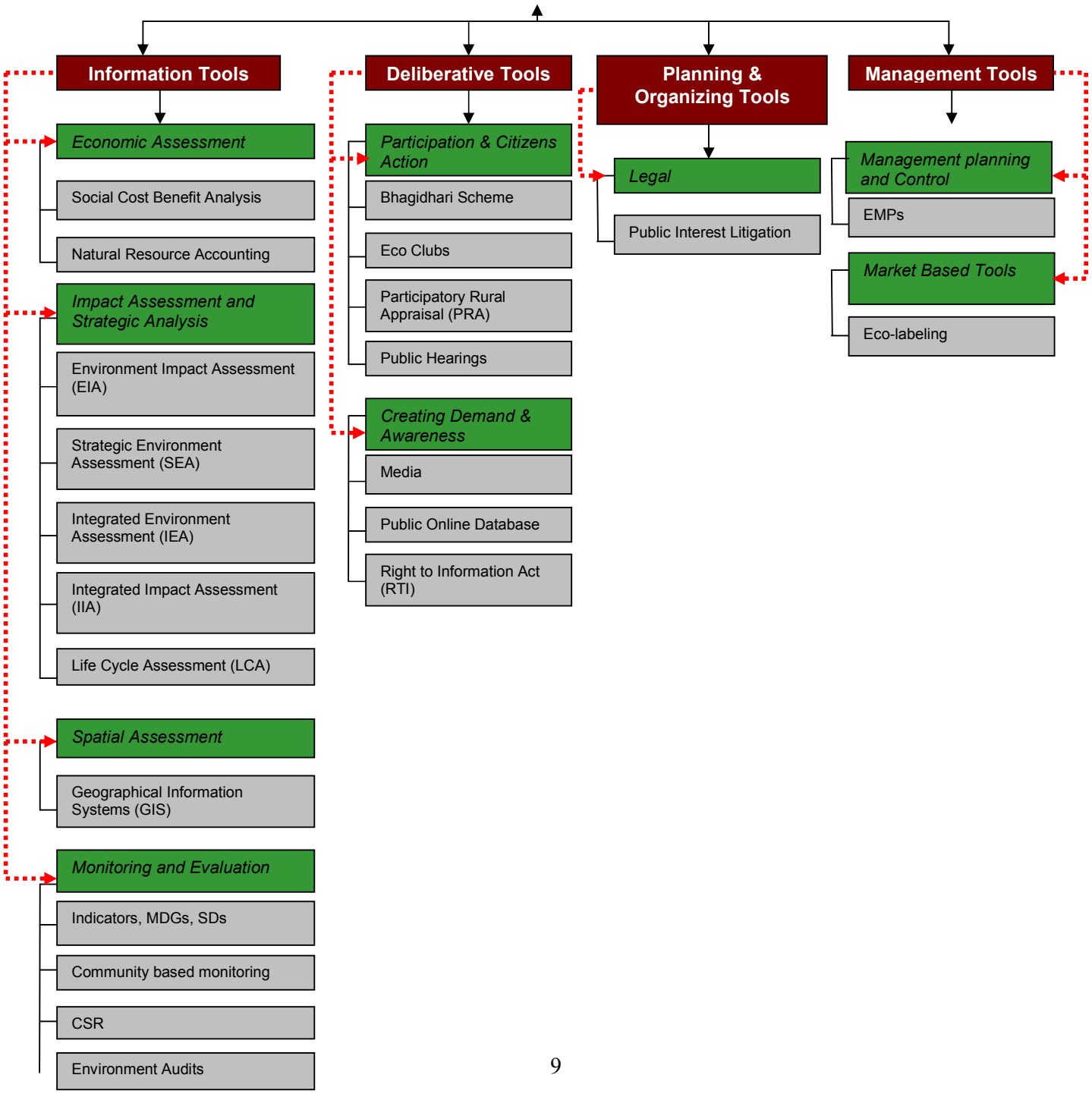
To ensure wider participation and implementation of environment-friendly initiatives, it is essential to move beyond the prescriptive planning methods catering to compliance with predetermined and commonly accepted environmental safeguard policies and technologies, by allowing adoption of more creative approaches and alternatives.

9. Key Drivers for Environmental Mainstreaming

- **National legislation and regulations**
- **Values of progressive organizations**
- **Increasing stakeholder awareness and demands**
- **Visible 'real' issues**
  - Poverty and rising inequality
  - Increasing frequency of natural disasters
  - Inability to arrest continuing environmental degradation

TOOLS & METHODS FOR ENVIRONMENTAL MAINSTREAMING: USER PERSPECTIVE

During the course of the survey, it was felt from the views of all the stakeholders that there is a general awareness on the various approaches leading to environmental protection. But, from the scientific perspective, classification of the tools was complex and lacked the technical aspects to their implementation in policy and planning. The set of tools and methods highlighted below is arrived out of the general consensus from the stakeholders on environmental mainstreaming. Even though the tools were not explicitly stated, they provide an overview of the true scenario in the Indian context on what and how these approaches are useful in terms of environmental integration.



INFORMATION TOOLS

A. Economic Assessment

i. **Social Cost Benefit Analysis**

ii. **Natural Resource Accounting**

i. Social Cost Benefit Analysis

Application of Cost Benefit Analysis (CBA) to environmental management, off-late, is realizing its potential as a strong environmental mainstreaming tool to inform the decision making process, by way of analytically measuring and comparing the benefits and costs of a project or policy. With the primary aim of CBA to assess whether the total benefits of a project exceed the total costs, incorporating social dimensions to the standard cost-benefit analysis could be used in conjunction with other decision supporting tools, such as Environmental Impact Assessment (EIA) or Multi-Criteria Analysis (MCA), to reach a sustainable decision which, otherwise, could be short-sighted and damaging to the environment in the long run. CBA is a powerful tool that could be used well with appropriate modifications by the public policy makers dealing with environmental management for the purpose of valuation of non-market goods, such as wildlife and landscape, societal predictions of the effect on aquatic ecosystem of effluent inputs, etc.

In view of the importance of cost-benefit analysis as an important tool for environmental mainstreaming, Ministry of Environment and Forests, Government of India, has implemented the 'India: Environmental Management Capacity Building Technical Assistance Project' with the World Bank assistance. The objective of this project is to increase the capacity for the application of economic principles and tools to environmental management in India across the full range of issues such as priority-setting, cost-benefit analysis of alternative policies for pollution control, resource management, and biodiversity conservation, through training programmes for practicing economists and non-economists, including short term overseas training programme for IES candidates.

Strengths

- Cost-benefit analysis helps to make the decision-making process more transparent by providing information to decision makers, both on the merits of the regulation at hand as well as on providing a framework for comparing a variety of regulatory alternatives.
- Framing cost-benefit analysis on the social parameters could be used as a means to optimize social well-being and, therefore, is an appropriate framework to guide decision- making on matters such as environmental protection.

Gaps

- There exists incomplete information pertaining to the market value of goods that the public values (such as clean air, water, and healthy ecosystems) and the risks imposed upon them by pollution and other human as well as natural by-products), thereby making the process extremely difficult and complex.

- Incomplete information further makes it difficult to quantify and monetize all costs and benefits of government programmes, thereby making the process controversial.
- The agencies may understate the costs since their incentive is to keep expanding their regulatory programmes.

ii. Natural Resource Accounting

Natural Resource Accounting is a fairly new concept in India; as such, it's potential as an environmental mainstreaming tool has not been fully exploited. It adjusts the cost associated with natural resource depletion and environmental degradation to the conventional GDP, thereby arriving at the rate of economic growth in the context of sustainable growth as **environmentally adjusted GDP.**

The main objective of NRA is to develop a framework of accounts that can consider environmental damage as a cost in the country's GDP in order to project how sustainable the country's economy is.

Strengths

- Natural Resource Accounting strengthens decision-making by providing information on the use of natural resources, showing a tendency for depletion or conservation, and leading to an improved design of long term development planning and policy formulation.
- It help integrate sustainability into economic management by establishing the role of natural resources as a national capital, useful for resource management planning in line with sustainable development plans.

Gaps

- Natural Resource Accounting depends largely on huge data requirement, which is missing.
- As this method requires some data to be estimated, the estimation techniques pose another potential problem.
- The accounting system lacks a more localized approach.
- The methods used for the valuation of natural resources are many, with not a single one as the perfect or appropriate method.
- Both at the national and state level, there is no formal set-up of natural resource accounting

B. Impact Assessment and Strategic Analysis

i. **Environmental Impact Assessment (EIA)**

ii. **Strategic Environmental Assessment(SEA)**

iii. **Integrated Environmental Assessment (IEA) (SOE Reporting)**

iv. **Integrated Impact Assessment (IIA)**

v. **Life Cycle Assessment(LCA)**

i. Environmental Impact Assessment (EIA)

Environmental Impact Assessment as a tool is anticipatory, participatory, and systematic in nature, relying on multidisciplinary inputs, with the purpose to (a) support the goals of environmental protection and sustainable development; (b) integrate environmental protection and economic decisions at the earliest stages of planning an activity; (c) predict environmental, social, economic, and cultural consequences of a proposed activity as well as assess plans to mitigate any adverse impacts resulting from the proposed activity; and (d) provide for the involvement of the public departments of the Government and Government agencies in the review of the proposed activities.

Strengths

- It helps to identify possible environmental effects of the proposed project, proposes measures to mitigate adverse effects, and predicts whether there will be significant adverse environmental effects, even after the mitigation is implemented.
- Properly conducted EIA also lessens conflicts by promoting community participation, informing decision makers, and helps in laying the foundation for environmentally sound projects.
- Environmental Assessment enables us carry out Environmental Cost-Benefit Analysis of projects at an initial stage.
- Environmental Assessment provides a rational approach to sustainable development.

Gaps

- There is lack of reference to project needs, purposes and alternatives. A reasonable inference is that the process reflects a narrowly focused technical approach, rather than the more broad, open and anticipatory approach.
- The process is still in its nascent stages of development and there is lack of institutional capacity and knowledgeable Government officials which are necessary to make the process function in an appropriate manner.
- EIAs are controversial in India because of the miniscule participatory democracy in the formulation and implementation of environmental legislation. There have been cases where more than one EIA for the project has been approved by an authorized agency and subsequently revoked by judicial action initiated by public interest litigations.
- The problem arises here because of no proper set of guidelines for project types being covered by the rule. With the promoter's own assessment, the regulatory authority has to make a judgment if the EIA is complete and if the project meets the environmental standards.
- The EIA and environmental clearances fall within the power of the Centre, but the implementation of pollution control falls within the jurisdiction of the states. This leads to a scenario where multiple agencies share similar responsibilities without any well-defined roles.

  To effectively utilize the strengths of EIA, the Ministry of Environment and Forests, Government of India, has passed a legal mandate, thereby ensuring compliance to regulatory norms and standards.

Notification for the Re-Engineering of the EIA Process in India

The new EIA Notification, issued in September 2006, requires public consultation for all Category A and Category B1 projects, with some exceptions (such as project activities in industrial estates or parks, projects pertaining to expansion of roads and highways and as well as category B2 projects). The public consultation comprises two components – public hearing at the site for ascertaining concerns of local affected people; and written response from other concerned persons having a plausible stake in the environmental aspects of the project or activities. A summary of the EIA report will be made available on the website and the draft EIA report may be made available to persons who request it within 60 days. The public consultation will be conducted by the SPCB or Union Territorial Pollution Control Committee (UTPCC) within 60 days of a request of the applicant. If the SPCB or UTPCC fails to conduct the public hearing within the prescribed time period, the Expert Appraisal Committee (EAC) or SEAC will appoint another public agency to conduct the hearing. After completion of the public consultation, the applicant is required to address all the material environmental concerns expressed in the public consultation and make appropriate changes in the draft EIA and the Environmental Management Plan. Procedures for conducting public consultation are prescribed in the appendix to the notification.

Source: EIA Notification 14 September 2006, Ministry of Environment and Forests, New Delhi

CASE STUDY # 1: EIA Mitigates Mining Impact

The Chalk Hills region of Salem, Tamil Nadu, has been a host to mining activities that are having a considerable negative impact on the environment. The impacts of opencast mining were initially assessed in the Red Hills Magnesite and Dunite mine (largest among the seven) of Burn Standard Co. Ltd. (a Government of India undertaking).In order to assess the environmental impact of this mine, seasonal variation in the levels of dust, noise and ground vibrations, were monitored during three seasons.

The environmental impact analysis has revealed hazardous levels of dust and noise prevailing at the various work spots in the mine. Implementation of environmental management plan (EMP) has helped to reduce the dust and noise levels below the undesirable limits, improving the working environment. As EIA and EMP have been made statutory requirements for starting new mining ventures as well as for existing mines (at the time of renewal of mining plans), measures to prevent environmental degradation have become a subject of priority with the mine management. Apart from controlling the environmental degradation in the mine, EIA and EMP have helped in improving the life of a large number of people living in the nearby villages.

Source: EV Manoj; V Prasanna Kumar; University College, Trivandrum - 695 034, India

ii. Strategic Environmental Assessment

Strategic Environmental Assessment (SEA) has evolved as a more refined approach to EIA. Even though its practice in India is limited, but the scope of Strategic Environmental Assessment (SEA) as a tool to environmental integration cannot be overlooked. SEA is a formalized, systematic and comprehensive process of evaluating the environmental impacts of a policy, plan or programme and its alternatives, including the preparation of a written report on the findings of the evaluation, and using the findings in publicly accountable decision-making. Incorporation of environmental concerns into the preparation and adoption of plans and programmes is the main pre-requisite to Strategic Environmental Assessment.

Strategic Environmental Assessment is found to be an effectively comprehensive Environmental Mainstreaming tool, encompassing sector-specific policy, plans and programmes, spatial and land use plans, regional development programmes, natural resource management strategies, legislative and regulatory bills, investment and lending activities, international aid and development assistance, structural adjustment funds and operations, macro-economic policy, budgets and fiscal plans as well as international trade agreements.

Strengths

- Emphasis on meeting environmental objectives and maintaining natural systems
- Broad perspective, lower level of detail to provide a vision and overall framework
- Focuses on sustainability agenda, gets at sources of environmental deterioration
- Institutes environmental accountability in sector-specific agencies
- Early warning of cumulative effects
- Greater transparency and openness in decision-making
- Considers a broad range of potential alternatives

Gaps

- Presently, the Indian EIA practice does not make a clear cut distinction on the use of SEA approaches to review environmental consequences of policies, plans and programmes as has been advocated in the earliest definitions of SEA.
- Due to the inherent lack of a nationally agreed definition of SEA, it is practiced as a voluntary tool, thereby limiting its scope and regulatory compliance.
- Pro-active approach to development proposals

CASE STUDY # 2: SEA – A Catalytic Tool for Conservation Planning

The project envisages construction of a composite dam expected to benefit 130,000 individuals of 160 villages in the command area of the Chandrapur District, Maharashtra, provide 34.2 m^3 of drinking water to Chandrapur township and enhance the agriculture production of the District.

The review of the EIA report and other documentation prior to accordance of environmental and forestry clearances and observations made by MoEF team, based on site visit, highlighted the crucial gaps in biodiversity-related information and the obvious deficiencies in mitigation planning. This constrained the decision making and created the necessity for undertaking SEA to review the earlier evaluation.

The SEA played a meaningful role in deciding a new course of conservation planning and impact mitigation to feed into the renewal of decisions. The recommendations were subsequently incorporated as part of the conditions to be fulfilled for diversion of forest land for the project became binding for according forestry clearance. With the assurance of biodiversity protection fully incorporated in conditions stipulated for grant of forestry clearance, the MOEF, subsequently, also accorded environmental clearance to the project.
The SEA finally catalyzed the parallel process of forestry and environmental clearances and performed the function of a 'help desk' in streamlining the assessment process for project authorization.

Source: *'Integrating Biodiversity into Strategic Environmental Assessment' by Asha Rajvanshi and Vinod .B.Mathur, WII*

iii. Integrated Environmental Assessment (IEA)

Integrated environmental assessment (IEA), in its simplest form, can be understood as a basic environment mainstreaming tool used to assess the effects and effectiveness of the policies on the environmental trends and conditions. In doing so it evolves into a critical and objective analysis and clear communication of data on priority environmental trends and dynamics and their interactions with human well-being and economic development.

One of the main goals of IEA is to improve sustainable development decision-making from the environmental perspective.

Strengths

- IEA helps us navigate a rapidly changing society.
- It is an important precursor for adaptive management and governance.
- By connecting assessment with policy, information moves beyond pure science and becomes both salient and legitimate to decision-making processes.
- Inclusion of stakeholder perspectives ensures relevance-another criterion for sound assessment.

Gaps

- Policy assessments have been beyond the scope of many traditional States of the Environment (SOE) reporting initiatives and have limited their focus on describing environmental trends and conditions.

- There is still lack of SOE analysis in the assessment of key driving forces and policies that cause or influence those environmental trends and their integration for a sustainable development plan.

iv. **Integrated Impact Assessment** (IIA)

Integrated Impact Assessment (IIA) provides such a framework for a balanced consideration of the economic, environmental, social and health impacts of development interventions at the project, sector and economy levels.

The process of Impact Assessment (IA) aims to improve the effectiveness and efficiency of regulation by providing policy makers with information on likely costs and benefits, stimulating early inter-departmental coordination, and promoting the involvement of the stakeholders. The objective is to enable decision-makers to choose the policy option with the greatest benefits at lowest costs.

Strengths

- It ensures coherence between development interventions.
- The IIA is a good practice tool designed to help assess and present the impacts of a policy in the context of the Government's wider policy objectives.

Gaps

- There is lack of generic tool kit for Integrated Impact Assessment
- Due to the dominance of EIA, IIA's potential as an assessment tool is overlooked.
- There has been no comprehensive study that looks at the actual effects of IIA on policy outputs - including whether IIA actually leads to the mainstreaming of formerly marginal objectives or whether it creates a bias towards certain types of impacts.

CASE STUDY#3: ESMP Checks Mining Related Environmental Degradation

Coal India Limited (CIL) implemented the Environmental and Social Mitigation Project (ESMP) in 25 selected opencast mines during 1996 to 2002, with the aim to mitigate adverse effects of coal mining on environment and people affected by such activities.

In terms of implémentation of this project, CIL carried out an Environmental Action Plan, alongwith a Rehabilitation Action Plan and an Indigenous People Development Plan, apart from various measures to control the pollution pertaining to air, water and noise.

Environmental Action Plan (EAP)

- EAP includes Domestic Effluent Treatment Plant, Workshop Effluent Treatment Plant, Mine Water Discharge Sedimentation Plant, Dust Suppression Majors, Tree Plantation, OB Dump Reclamation, Top Soil Storage and Spreading for Bio Reclamation and Environmental Monitoring.

Rehabilitation Action Plan (RAP)

- Shifting of villagers affected by mining, resettlement and rehabilitation of project-affected families (PAFs) by giving a plot of land in well developed resettlement sites or a lump sum package to settle at a place of their choice. The PAFs are also trained in different trades for their economic rehabilitation.

***Indigenous People Development Plan* (IPDP)**

For IPDP**,** villages falling within one kilometer area from the leasehold of the mines are considered. This Plan focuses on:

- *Development of Community infrastructures* like School Building, Community Hall, Dispensary Building, Village Roads, School Furniture, Wells, and Tube wells
- *Community Activities* like 'Mahila Mandal', Youth Club, Self Help Groups, Sports, and Cultural Programmes
- *Training and Capacity Building:* Training for Self-employment and Non-formal Education

***Source*:** *Dr. Gurdeep Singh, Indian School of Mines, Dhanbad*

v. Life Cycle Assessment/EMS

Life Cycle Assessment is one of the vital dimensions of environmental management systems. . Life cycle assessment (LCA) and Environmental Management System (EMS) are chain management tools, where EMS provides the opportunity for a corporation to continuously improve the environmental quality of its operations and attain environmental goals - by **all** the people at **all** the levels, at **all** times. LCA identifies the material, energy and waste flows associated with a product over its entire life-cycle to determine environmental impacts and evaluates the environmental performance of processes, products and services, and also identifies potential cost savings, thereby integrating cleaner production.

Since LCA, a tool to environmental mainstreaming is primarily practiced by the corporate sector and falls under the purview of the Environmental Management Systems, its scope and implementation is by and large influenced by the policies adopted and integrated for the environmental management systems of the business house.

Strengths

- LCA helps to improve efficiency and reduce costs of: Product design, Product marketing, Supply chain and pressure of compliance with environmental legislation.
- It can also be used as a decision making tool, which may lead to eco-labeling of the product.
- It also provides information to the Industrial customers on the environmental consequences of products and services they buy.
- Companies may extend market share or reach new markets by making their products and services environmentally benign.
- LCA helps companies adopt a remanufacture approach to reduce the resource use and cost.

Gaps

- EMS is a management system and is evolved by the management's stated policies, goals, and objectives and may not necessarily support the use of life cycle tools.
- EMS is inward-looking but LCA is outward-looking and hence relationships, communication and effective management may be problematic.
- EMS is site-specific and responsible for compliance and accomplishing envisioned goals, thus objectives may not address broader issues like Life Cycle Assessment.

CASE STUDY#4: LCA improves Environmental performance of Tata Steel

Goal and Scope

In India, the Ministry of Environment and Forests (MoEF) has initiated a project to carry out the life cycle assessment of the steel sector. The main objective of the study is to find out the pollution load per tonne of steel produced and identify the problematic areas, which have to be dealt with.

The LCA study was initiated at Tata Steel in the year 1997–98 and since then it has been carried out each year to evaluate the environmental performance and to find out the environmental impact of various process improvements. The various steps involved in carrying out the study are: 1) Preparation of the system boundary 2) Data collection and validation 3) Life Cycle Inventory (LCI) preparation and its interpretation and 4) Impact assessment.

The production of steel involves various process stages and this study analysis each of the processes to identify the areas of improvement and in turn improve the plant performance. The CO2 consumption has to be brought down by using less coal and recycling all the carbon values of the solid, liquid and gaseous by-products, which to a certain extent remain unused due to various constraints. The study clearly shows that the improvement in the environmental performance of the plant has a positive effect on the bottom line of the company. LCA study can be effectively utilized to identify enablers for process improvements and to assess the environmental consequences of potential process changes.

***Source**: International Conference on EcoBalance and Life Cycle Assessment in India, Soni, R. Sripiya, P.V.T Rao and O.N. Mohanty, Tata Steel, Jamshedpur-831007*

C. Spatial Assessment

i. Geographical Information System (GIS)

GIS is the latest tool in geosciences, which have been widely used to understand various dimensions of natural resources development and management in order to carry out development plans without affecting the present state of environment. The GIS tool is mostly practiced using the Zoning Atlas. It covers a broad range of activities, mainly - Environmental Atlas of India, Mapping of Environmentally Sensitive Zones and Industrial Sites (State-wise), Zoning Atlas for Siting of Industries (District-wise), Industrial Estate Planning, and Environmental Management Plan for Urban Areas.

Strengths

- GIS eases the preparation of environmental impact assessment (EIA) to expedite the environmental clearance process.
- The advancement in remote sensing techniques, geo-spatial analysis and geographic information system (GIS) tools has contributed in bringing simplicity in natural resource assessment, planning and management.
- It offers an integrated analysis and transforms the data into the required information for planners and decision makers for monitoring and managing natural resources, thereby providing an accurate and latest backdrop of the situation on the ground.
- GIS-based information tools allow disaster managers to quickly assess the impact of the disaster on a geographic platform and plan adequate resource mobilization in the most efficient way.
- Thus, a reliable GIS-based database will ensure the mobilization of right resources to right locations within the least response time.

Gaps

- With such extreme diversity, the major impediments in the use of GIS in the region have perennially been the constrained institutional capability, the digital divide, inadequate infrastructure, low levels of education, and the paucity of trained personnel and investment.
- There are insufficient technological, institutional and policy-related aspects that need to be synergized in support of GIS activities in areas relevant to the MDGs.
- The digital divide encompasses not only the lack of appropriate information, but also a lack of local content. The rollout of Information and Communication Technologies (ICTs) requires appropriate local content, paying attention to cultural and linguistic diversity, to make it meaningful in the context of local conditions.
- There is lack of Government strategies and policies on public-private partnerships that encourage private sector participation to extend affordable ICT access to underserved areas such as remote rural areas and small islands.

D. Monitoring and Evaluation

i. Indicators

ii. Community-based monitoring

iii. CSR

iv. Environment audits

v. Life Cycle Assessment (LCA)

i. Indicators: Millennium Development Goals (MDGs)

The Millennium Declaration, adopted in September 2000, is a global development agenda that comprises a set of mutually reinforcing development goals, targets and indicators, known as the Millennium Development Goals (MDGs). Millennium Development Goal 7 (MDG7) focuses on environmental priorities related to sustainable development and poverty reduction. The Global MDG7 Framework includes three targets and eight indicators for monitoring the status of forest cover, biodiversity protection, energy-use, emissions of CO_2, use of solid fuels, access to safe drinking water and sanitation systems, as well as access to a secure tenure.

Strengths

- The MDGs are an opportunity to develop national databases and strengthen national statistical systems.

Gaps

- Lack of reliable national data and in-country statistical capacities are primary causes of weak environmental monitoring
- lack of information to identify priorities and magnitude of the problems
- The goals are set too high
- The targets are difficult to define and monitor
- There is weak institutional capacity for monitoring environmental problems
- Lack of data on indicators
- Lack of nationwide inventory of ecosystems
- There is weak evaluation capacities
- Lack of professional institutions for databases
- There is absence of appropriate indicators
- Insufficient environmental specialists
- Monitoring Constraints

ii. Community-based Monitoring

In the true democratic spirit of our country, Community Based Monitoring (CBM) is an effective sensitizing tool to environment mainstreaming. It involves a process where concerned citizens from diverse backgrounds collaborate to monitor, track, and respond to issues of common community concern. The CBM system is an organized way of collecting information at the local level for the use of local government units, national government agencies, non-government organizations and the civil society.

The CBM adopts the concept of mobilizing and developing the capability of communities for data generation and utilization. It also reports the data collected to the higher geopolitical level for immediate intervention and ultimately reaches

macroeconomic planners in order to influence adjustment programmes. It utilizes the information generated by other monitoring systems already in place as a support. It also creates and maintains databank at each geo-political level.

Strengths

- CBM helps in sustainable community development.
- CBM creates social capital
- Community-based environmental monitoring contributes invaluable information to the community on the status of the local environment.
- CBM seeks to provide the *Gram Panchayat* (local self-government institutions at the village) and local communities with a participative and evidence-based information system on access to basic minimum services for needs-based policy formulation and monitoring and contributing to the reduction of inequalities in health services by providing disaggregated information at all levels as well as easy access to health care and other services for different sections of the population.

Gaps

- Inter-sectoral collaboration - Involving all stakeholders has proved to be problematic but necessary for achieving the goals of CBM.
- Collaboration at local level - Successful CBM activities require collaboration with other decentralized departments. However, this may be restricted by the need for approval from the central ministries, which can result in delay and inaction on issues that could promote CBM activities.
- Financial challenges - Current CBM activities are limited by inadequate levels of core government funding. The consequences of this are that regional and district coordinators lack the necessary logistics to perform well, relying on donor support.
- Monitoring - There is no structured monitoring system of CBM at present.

iii. Corporate Social Responsibility (CSR)

The concept of corporate social responsibility is based on the idea that not only public policy but companies, too, should take responsibility for social issues. In more recent approaches, CSR is seen as a concept in which companies voluntarily integrate social and environmental concerns into their business operations and into the interaction with their stakeholders. The idea of being a socially responsible company means doing more than complying with the law when investing in human resources and the environment.

Strengths

- The CSR approach seeks to motivate companies to assume responsibility for problems and challenges that used to be addressed by state regulation.
- Multi-stakeholder initiatives have achieved further harmonization of social and environmental standards and, to some extent, already encouraged companies to internalize them in their business strategies.

Gaps

- In the absence of a structured approach to defining CSR and a system for its deployment, companies are often unaware of the nature of such initiatives and the magnitude of their investments in CSR initiatives.
- The outreach of a well implemented CSR approach is only limited to India's formal economy, which accounts for a mere five per cent of all companies operating in India's business sector.
- CSR projects do not necessarily accord with the social priorities of public policy.
- The imbalance between the internal and external CSR dimensions is still huge.
- A company's community development approach lacks transparency and specific standards.
- Public authorities in local communities very often lack the required know-how and experience to negotiate business-driven commitment to community development.
- Effective monitoring of compliance with CSR standards hardly exist in India.
- There are very few civil society organizations and almost no labour unions actively involved in the shaping of the CSR agenda.
- Participation in multi-stakeholder initiatives is expensive and complicated.
- Law enforcement is said to be poor in India, public agencies and officials need to enhance their commitment to the more effective application of national regulations.

Environmental Training for Cleaner Production Benefits Indian Industry

An attempt has been made to analyze various types of organizational training imparted in Indian Industries while implementing cleaner production, in a study carried out in two industrialized states of India, namely Maharashtra and Gujarat, with participation of eight firms from each state. The various sources of training for the Indian industries have also been studied. It is found that more than half of the industrial units have given importance to various kinds of training during the implementation of cleaner production. When it comes to training in Environmental Management System (EMS), nearly half of the firms have gone in for it. Among the sources of training, the most useful training was the training imparted by in-house staff and on-the-job training. Lastly, suppliers of cleaner technologies seem to have also played an active role in training as revealed by few of the participating units.

Source: *Seema Unnikrishnan, and D.S. Hegdea, National Institute of Industrial Engineering, Mumbai 400087*

iv. Environmental Audits

Environmental Audit is a voluntary compliance by a corporate and an effective **tool** for effecting continuous improvements in **environmental** quality and ensuring **mainstreaming** of the **environment**. Environmental audits are like evaluations against stated commitments and mitigation plans intended to help an organization establish and continue to meet its environmental policies, objectives, standards and other requirements. It involves a systematic, documented verification process of objectively obtaining and evaluating audit evidence (verifiable information, records or statement of facts) to determine whether specified environmental activities, events, conditions, management systems, or information about these matters conform with audit criteria (policies, practices, procedures or requirements against which the auditor compares collected audit evidence about the subject matter), and communicating the results of this process to the client (organization commissioning the audit).

CASE STUDY# 6: CSR in India taking a Green U-Turn

A number of factors are driving the increased adoption of CSR practices in the Corporate India. Regulation obviously provides the baseline for corporate action, notably for employment practices and the environment. Beyond this, for many companies, being a good corporate citizen is a vital aspect of their identity, values, and vision. Far sighted business leaders recognize that it is unsustainable for their companies to exist as 'islands of prosperity' in a sea of poverty. 'We must do something for the community from whose land we generate our wealth', voices one leading CEO. Market forces are also propelling many firms to go 'beyond compliance', notably for those selling into international supply chains. No longer a legal necessity and a nice thing to do, CSR is emerging as a 'hard' commercial factor, linked directly to profits and brand value.

- Boosting profits: Gujarat Ambuja, one of the country's leading cement manufacturers, reports that 'our efforts to achieve world standards in environmental protection have had the happy outcome of substantially improving efficiency and profitability'.
- Cutting costs: reliance Industries' energy conservation measures have saved the company 1150 million rupees per annum.
- Increasing revenues: HLL's Project Shakti creates income-generating opportunities for the under-privileged rural women, while giving the company an enhanced access to hitherto unexplored rural areas.
- Strengthening brand value: In February 2004, Infosys was among the seven international companies to be chosen in the first annual list of 'Top Brands with a Conscience'.
- Enhancing reputation: The Oil and Natural Gas Corporation has found that its community development programme has 'generated tremendous goodwill and earned the company the reputation of being a company that cares'.
- Improving morale: Tata Steel believes that helping the community also provides a new perspective to its employees, thereby strengthening employee morale.

Source: 'The State of CSR in India 2004; Acknowledging Progress', National Seminar on corporate Social Responsibility, 2004

Strengths

- EA ensures a high quality of environment for people living in a particular area.
- It integrates ecological concerns in the economic management of societies.
- Environment Audit reports could also bring out possibility of enhancing the revenue collection by Governments in the form of 'polluter pays taxation', or by sale of pollution permits to check further deterioration and to finance improvements in air and water quality.
- The existing fiscal incentives could be evaluated from a sustainability viewpoint to determine whether or not they promote the stated policy of the Government.
- Besides, environmental audits help promote awareness of environmental issues in the community, thereby helping promote sustainable development.

Gaps

- There is no statutory requirement for environmental audits in the corporate sector or in local self government sector, or for agencies under the Central and State Governments.
- There is no pending proposal for introducing such audits, and nor are such themes voluntarily being taken up by the corporate sector or by auditors in the corporate and government sectors.
- There is also need for a wider access to environment audit reports so that the community is fully involved in developing responses to existing and future environmental hazards.
- Government departments are usually very protective about the data which they collect and retain primarily for monitoring purposes, as the same may reflect adversely on their acts of omission and commission not always motivated by considerations of public interest.
- In the case of data which is not part of a statutory requirement, there are usually problems of unreliability, delayed compilation, sectoral emphasis, tentative nature, weak audit trail and significant exceptions.

DELIBERATIVE TOOLS

A. Participation and citizen action

i. **Bhagidari Scheme**

ii. **Eco-Clubs**

iii. **Participatory Rural Appraisal(PRA)**

iv. **Public Hearings**

i. Bhagidari Scheme

Bhagidari literally means 'collaborative partnership'. Bhagidari scheme envisages collaboration between citizens and the city administration for the improvement of the civic services. 'Bhagidari', the Citizen's Partnership in Governance. 'Bhagidari' has evolved as a platform available to the citizens to interact continuously with field level officers and even with the Chief Minister directly.

Strengths

- The Scheme has helped facilitate city-wide changes
- Utilized processes and principles of multi-stakeholders (citizen groups, NGOs, the Government) collaboration
- As a platform it has attempted to address issues arising from multiplicity of institutions and their overlapping functions
- Influenced decision-making
- Increased the accountability of Government
- Introduced transparency [Right to Information, Citizen's Charters, Administrative Reforms]
- Direct interface with citizen groups has helped to reduce corruption
- Has produced new 'collective actors' [based on life-space/work-space network – loose networks of local associations which have become representatives of popular social groups – become more efficient in 'collective claim-making'.

Gaps

- Bhagidari scheme gives unlimited powers to the RWAs who might use it to cater to their illegal activities.
- Bhagidari scheme has no constitutional basis.
- There is lack of awareness among public with regard to Bhagidari.
- Bhagidari scheme only involves the citizens who have formed an RWA/MTA, but there is a large section of society, which is without them: people living in JJ clusters, or hawkers on the footpath. Therefore, an area-based approach is required, encompassing all the citizens living in that area.
- A RWA cannot punish someone who is throwing garbage on the road, etc. Therefore, some power should be given to the RWA/MTA to enforce the idea more practically.
- Bhagidari scheme poses financial constraints.

- The concept of Bhagidari should be widened to bring the private sector collaboration in governance.
- Junior and middle level officials are the ones who ultimately have to do the job; it becomes very important that they are adequately informed about the concept and working of the Bhagidari. They have to be made accountable for their actions.
- It is difficult to bring together a large number of citizen groups and government officials on a common platform – balancing competing groups.

CASE STUDY #7: Empowering the Citizenry through Bhagidari

The Government of National Capital Territory of Delhi (NCR) took an initiative in the year 2000 to involve its citizens in facilitating citywide changes in Delhi, by utilizing processes and principles of multi-stakeholder collaboration through 'Large Group Dynamics' and 'Joint Ownership' with citizens and civic agency officials. The City Government decided to start the ***Bhagidari*** (or Citizen-Government Partnership) programme, with the aim to empower the citizenry to look after local civic problems at the decentralized community level. It thus created a formal system of liaison and interaction between residents, civil society organizations and relevant government departments.

The areas of consultation and sharing of responsibilities were established after consultations between the Delhi Government with citizen groups as Resident Welfare Associations (RWAs), Market and Trader Associations (MTAs), NGOs, Industrial Associations, Rural Citizen Groups, and the officials of Municipal Corporation of Delhi (MCD), Delhi Development Authority (DDA), New Delhi Municipal Council (NDMC), Power distributions Companies, Delhi Police, Environment and Forest and Education Departments of the Government of Delhi.

The initiative launched in January 2000 has firmed up and become a frontline movement with more than 1300 citizen groups that cover nearly five million people to carry out a series of activities such as - rainwater harvesting; solid waste management; implementation of environmental projects including segregation of garbage at source; recycling of non-biodegradable waste; and development of more than 500 Community managed Parks to improve the green cover of Delhi.

Apart from this, citizen groups initiated better water distribution and management in the water scarce colonies of Delhi through water councils. These groups also launched campaigns like 'Save River Yamuna' and 'Clean Delhi Campaign' with the participation of school children, youth, women and residents.

Source: ***Regional Environmental Governance ('REG') Programme for Asia Pacific, Case Study Proposal, Bhagidari: Citizen - Government Partnership.***

ii. Eco-Clubs

Eco-clubs are democratic civic organizations, which encash upon the spirit of the youth and the children to benefit the environment. As a tool to environment mainstreaming, these informal clubs do one or more eco action/s each year through interaction with other community institutions to work towards the improvement in the quality of life of the population. In a joint effort with other institutions, their public awareness campaigns utilize participatory strategies searching for neighbourhood-involvement in the implementation of proposals that may be evaluated in a practical manner and that are characterized by their support.

CASE STUDY#8: Nationwide Environmental Awareness through Eco-clubs

A programme of raising 'National Green Corps' through the Eco-clubs was, launched during 2001-2002,by the ministry of Environment and Forest,Govt of India in all Districts of our vast country.

Under this programme, Eco-clubs are being set up in 100 schools of each District of the country. 47,000 Eco-clubs have been set up so far in the country. This programme is being implemented in each State/UT through the Nodal agency appointed by the State/UT Government.

The main objective of this programme is to educate children about their immediate environment and impart knowledge about the eco-systems, their inter-dependence and their need for survival, through visits and demonstrations and to mobilise youngsters by instilling in them the spirit of scientific inquiry into environmental problems and involving them in the efforts of environmental preservation.

Since the modification of the scheme in 1993, more than 10,000 Eco-clubs had been provided grants until 2000-2001 in various parts of the country. Considering that the total number of schools covered were grossly inadequate compared to the total number of schools in the country, and keeping in view the potential of this programme in sensitizing the school students, it was decided to intensify this programme to cover each and every district of the country.

The Government of India provides financial assistance for establishment of Eco clubs at the rate of Rs.1000 per Eco-club, training of Master Trainers, teachers' training and distribution of resource materials.

Source: envfor.nic.in

Strengths

- Play an important role in creating motivation and environmental awareness amongst the future generation.
- Promote ethos of conservation of water by minimizing the use of water.
- Motivate students to imbibe habits and life style for minimum waste generation, source separation of waste and disposing the waste to the nearest storage point.
- Educate students to create awareness amongst public and sanitary workers, so as to stop the indiscriminate burning of waste that causes respiratory diseases.
- Sensitize the students to minimize the use of plastic bags, not to throw them in public places as they choke drains and sewers, cause water logging and provide breeding grounds for mosquitoes.
- Organize tree plantation programmes, awareness programmes such as quiz, essays, painting competitions, rallies, street plays, etc., regarding various environmental issues and educate children about the re-use of waste material and preparation of products out of waste.
- Organize Nature Trail in wild life sanctuaries/parks/forest areas to know about the bio-diversity.

Gaps

- Lack of commitment to the principles of Eco-development by the state authorities.
- There is need to see it as more than a short-term project with a fixed life span.
- There lacks a well defined and executed dissemination strategy, including awareness building and targeted education for the project's objectives.

iii. Participatory Rural Appraisal (PRA)

'Participatory Rural Appraisal' or **PRA** is a growing family of approaches, methods and behaviours to enable people share, enhance and analyze their knowledge of life and condition, and to plan, act, and monitor and evaluate.' PRA can also be understood as the best form of democracy in practice, wherein communities are empowered to identify and do their own investigations, analysis, presentation, planning and action, to own the outcome to teach and share their knowledge. PRA is an effective participant-orientated tool to environment mainstreaming that uses participation of communities to determine important issues, the information required, its analysis, and the action to be taken.

Strengths

- PRA takes a multidisciplinary and holistic approach.
- It is a progressive learning approach.
- It deliberately seeks diversity.
- It avoids biases by ignoring outside research.

Gaps

- Participatory techniques need to be institutionalized.
- Establishment of Panchayats is not complete and not fully taken to by communities.
- Lack of training for officers/ counselors, to understand the different environmental priorities and political importance.
- Local politics and pressure could influence and exploit people.
- There is a need to develop Local Capacity building through inter-sectoral approach
- The Central Government does not relinquish enough power and authority to the local level.
- The Local Panchayats do not fully realize the power they posses and their role, leading to lack of trust.
- There is insufficient and inappropriate infrastructure and technology.

CASE STUDY# 9: Success of Water Panchayat in Rajasthan

Rajasthan is one of the driest States of India with regular recurrence of droughts. Traditional water harvesting structures that were used to store and conserve water faced a gradual decay as increasing population pressure, deforestation, large-scale migration and a dependent mentality took hold. Large parts of the States were listed as a dark zone since the groundwater table was extremely low. Responding to this crisis, Tarun Bharat Sangh (TBS) was established in Alwar district in March 1975 with a mission to harvest and conserve water through revival of traditional water harvesting structures called Johads and construction of new structures. The TBS mobilized people by undertaking padyatras and holding Panchayat meetings. The organization extended its activities to a holistic treatment of the catchment area of its water structures by taking up afforestation work. Over the years, TBS has built more than 4500 water harvesting structures based on indigenous technology and with locally available material. The local community maintains these structures. In the process, the carrying capacity of land for fuel, fodder and food grains has increased considerably. Agricultural land under cultivation in the villages falling in the watershed area has increased from around 20 per cent in 1985 to close to 100 per cent at present. Diversification of livelihood opportunities, especially dairy industry, is clearly visible in the area. Five rivers of the area viz. Arvari, Ruparel, Sarsa, Bhagani and Jahajwali that had dried up earlier have become perennial.
Source: TBD

iv. Public Hearings

Public Hearing represents the best form of people's governance in practice. It is a novel way for the citizens to dialogue with government to find solutions to critical survival issues. It involves as wide a constituency of stakeholders as possible and to gather their insights on environmental protection and a new development paradigm.

Public Hearing is mandatory for certain categories of projects that have significant environmental impacts, as part of the Environmental Impact Assessment (EIA) process stipulated in the MoEF Notification of 14 September 2006.

Public Hearing versus Public Consultation

It is noteworthy, that 'public hearing' has been replaced with 'public consultation' in the new notification, perhaps reflecting a paradigm shift in the expected outcome of the process. The public hearing process as part of EIA was presented as an opportunity for potentially affected communities to flag their concerns. In the new Notification, 'public consultation' aims to force project proponents to proactively seek the views of affected communities at various stages of project development and integrate these concerns in the design. The other major change is the timing of getting views of affected parties, which is a prerequisite for the final EIA documents and not as an annexure to EIA document after it is completed, as is usually done. A number of other process changes aim to address the alleged lacunae in the current system of public hearing.

Source: EIA Notification 14 September 2006, Ministry of Environment and Forests, New Delhi

Strengths

- The mechanism provides an opportunity to the affected people to raise their concerns about the project and get them addressed accordingly.
- Involving the public during project preparation facilitates decision-making on project development, raises public awareness of the project and its potential impacts, and helps effective monitoring in the operational phase.
- Public hearing tries to inform and involve the people in environmental conservation and nurture, not in a sense of panic, a deep concern and commitment to action.
- It also provides an opportunity to all the constituencies to forge partnerships for change and to express their shared commitment to usher in a new paradigm of development that is consistent with social equity and environmental sustainability.

Gaps

- There is lack of coordinated and orchestrated programme of public awareness, especially through the media to build up public opinion to protect the environment.
- Not all affected stakeholders are equally well-positioned to express their views. For example, in many projects, tribal communities who may be the most impacted by a proposed project are not involved either due to their inability or lack of willingness to attend a public hearing.
- There is also a growing trend among developers to distinguish between community and public stakeholders, and limit the public consultation or public hearing process to the affected community only.
- The determining factor to effective public hearing is the free flow of information, which remains severely restricted by the following reasons:
  - The pervasive culture of secrecy and arrogance within the bureaucracy; and
  - The low levels of literacy and rights awareness amongst India's people.

  The system of governance in India has traditionally been opaque, with the State retaining the colonial Official Secrets Act (OSA) and continuing to operate in secrecy at the administrative level. The OSA enacted in 1923 still retains its original form, apart from some minor amendments in 1967. These provisions have been roundly criticized. The Central Civil Service Conduct Rules, 1964 bolster the provisions of the OSA by prohibiting Government servants from communicating any official document to anyone without authorization. Section 123 of the Indian Evidence Act, 1872 also prohibits the imparting of evidence from unpublished official records without the permission of the head of the relevant department, who is free to grant or to withhold such permission as he or she sees fit.

Instruments of Public Participation

Document Review

- Community members and other stakeholders increase their capacity to participate by reviewing background materials presented in a language and at a technical level they can understand.

Informational Meetings

- Informational meetings provide basic information to the public about proposed projects, such as where or when a road or power plant will be built and its potential benefits and impacts. Informal meetings can help minimize initial public fears, identify local concerns and develop trust and communication with local communities.

Public Hearings

- Public hearings are meant to provide a formal opportunity for the public to voice their opinions or concerns on a proposed project, law, or environmental policy.

Advisory Committees

- Advisory committees allow for greater participation of key stakeholders that is more in depth, continuous, and policy-oriented. Citizen advisory committees are intended to serve more as the voice of the larger public.

Public Involvement Volunteers

- Public involvement volunteers are people from the community who are enlisted to assist an agency in developing and implementing a public involvement programme. The volunteers help the agency to better understand the community concerns and improve the public hearing process.

Community-Based Environment Management

- Through community-based environmental management, multiple stakeholders come together to develop and share solutions to local environmental problems via consensus-based approaches that integrate environmental, economic and social objectives.

Source: Building National Consensus through Effective Dialogue and Public Participation, World Bank

B. Creating Demand and Awareness

i. **Media; especially Local Media**
ii. **Public Online Database**
iii. **Right to Information (RTI) Act**

i. Media

The 21st century predominantly constitutes an information and knowledge-based society, wherein Information Networking plays a key role in the initiatives towards enhancing opportunities for environmentally sustainable development.

The role played by media in sensitization and awareness on issues pertaining to environment focuses on two things, Is the media sensitive and proactive? Is media a boon or a curse?

Strengths

- The media is a vital tool in creating environmental awareness and complements governments in disseminating the right information and sensitizing the masses towards valid concerns.
- Its biggest strength is that it is a prerequisite for global action to save the environment.

Gaps

- The media often harps on what is not happening in sustainable development rather than reporting positive stories.
- The biggest challenge to sustainability is 'growing consumerism', which the media does portray. Ignoring a lifestyle that uses public transport, the media talks of swank automobiles, making viewers or readers aspire for unsustainable lifestyles.
- At times, the media gets it wrong by one-sided reportage.
- Instead of '*ghettoing*' the environment by putting it on an exclusive channel/page, it should be brought into the mainstream. Public sector broadcasting is extremely important, as it highlights the issues of change and development.
- There is a need to personalize and humanize reporting on environmental issues in order to bridge the gap between the local and the global.
- There is a need for specialized journalists well-versed with environmental issues and capable of placing them into larger ecological, historical and political contexts.
- The incremental nature of environmental stories makes them different from 'news' and this, along with the sheer breadth of the topic, poses a challenge in terms of media coverage.
- Lack of orientation and training of journalists on environmental concerns.

CASE STUDY#10: INVOLVING CSOS AND COMMUNITIES IN DRAFTING LEGISLATIONS

Realizing the importance of Environmental Information, the Government of India, in December, 1982, established an Environmental Information System (ENVIS) as a plan programme. The focus of ENVIS since inception has been on providing environmental information to decision makers, policy planners, scientists and engineers, research workers, etc. all over the country.

Since environment is a broad-ranging, multi-disciplinary subject, a comprehensive information system on environment – ENVIS - has, developed itself with a network of such participating institutions/organizations for the programme to be meaningful. A large number of nodes, known as ENVIS Centres, have been established in the network to cover the broad subject areas of environment with a focal point in the Ministry of Environment and Forests.

ENVIS focal point ensures integration of national efforts in environmental information collection, collation, storage, retrieval and dissemination to all concerned.

To strengthen ENVIS in disseminating information pertaining to environment and sustainable development, ENVIS India is in the process of establishing 85 ENVIS Nodes by involving Organizations, institutions, Universities and Government departments working in diverse areas of environment.

ENVIS India has already established 81 partner nodes, which include 30 Government Departments, 36 institutions and 15 NGOs. These nodes are supposed to create websites on specific environment-related subject areas, while ensuring:

- Establishment of linkages with all information sources, and creation of data bank on selected parameters in the subject area assigned
- Identification of information gaps
- Publishing newsletters and Bulletins
- Developing library facility and providing support to the focal point on the subject area.
- Most importantly, serving as an interface for the users on the assigned subject.

SUCCESS STORIES

Community Action Saves Environment

(Examples collected by Sector-wise Reviews)

An industrial facility in Kerala

In the Birla Enterprise case dating back to early 1980s, citizens in Kerala raised concerns over pollution in the Chaliyar River from the Gwalior Rayon manufacturing mill. The State Government called a meeting between the community, factory management, and Kerala SPCB and several agreements for improved environmental management at the factory were reached. Still, after several years, there was no action taken by the factory and the citizens were forced to launch a prolonged protest against the factory and Government to compel the implementation of the earlier agreement. This citizen action resulted in the Government forming a committee to study the pollution caused by the factory and recommend corrective solutions. The factory management eventually decided to close the polluting plant.

Listening to Communities with Site Specific Knowledge

The case of Chipko Andolan in Uttar Pradesh depicted how a non-violent and action-oriented movement by villagers prevented the felling of trees by private developers and the destruction of a nearby community forest. As the women from the village raised their concerns and organized protests, an expert committee was established to evaluate the potential environmental impacts from the proposed activity. The committee concurred with the women due to the highly sensitive nature of the watershed and recommended that felling of trees be totally banned to allow for regeneration.

A highway project in Karnataka

The WTC Corridor bisected the village community of Aimangala in Karnataka. Due to lack of prior consultation with community, the need of villagers for a pedestrian under-pass to provide safe crossing was not considered. The local people resorted to public confrontation, including laying siege to engineers and consultants, to demand an under-pass to connect both sides of the village. At this stage, however, the redesign would have meant significant additional costs, time and demolition of work already done; and was declined. The result was reputation damage to NHAI and an unsafe and accident- prone road, which could have been avoided if there had been early consultation with the community during the design of the project. This lesson demonstrated the value of public consultation and has been incorporated by the NHAI in more recent projects.

Source: ***Building National Consensus through Effective Dialogue and Public Participation, World Bank***

ii. Right to Information (RTI) Act

Public information is one of the cornerstones of a modern society. To empower public participation in the governance of decisions that will impact public health and environment, the Right to Information (RTI) Act provides citizens the right to know and shape decisions that affect their lives.

The Right to Information Act of 2005, which operationalizes the fundamental right to information, is a watershed legislative measure for Indian democracy. A crucial law for the promotion of transparency and accountability from the Government, it allows citizens to demand information (in the form of records, documents, samples and orders) from the Government regarding any Government Department or office.

Strengths

- An instrument of social change and empowerment
- Acts as a catalyst for social transformation and transparent governance
- An instrument to check official corruption
- The passage of the Right of Information Act (RIA) provides a valuable opportunity for developers and regulators to improve public relations, which they can not afford to miss or under-utilize.

Gaps

- The implementation of the RTI Act is quite uneven across the states. In some states, information is being provided to citizens on time, while in a large number of other states, implementation is slow and tardy
- A high application fee is charged in some states and information is denied to citizens on one pretext or another in other states;
- It involves a complicated mode of fee payment;
- There is unavailability of the list of Public Information Officers (PIO);
- There is no pro-active disclosure by public authorities;
- There is lack of training of PIOs; and
- There is reluctance of the information commissioners to penalize PIOs.

People's Access to Environmental Information

Ideally, the public should have access to the same environmental information as the decision maker. The four major types of environmental information for which public access should be provided are:

- Information about day-to-day environmental quality, such as urban air quality, which helps people decide whether to take certain protective measures to lessen environmental impacts on their health;
- Information about long term environmental trends, such as the quality of a watershed, which helps people to better understand the environmental consequences of unsustainable development;
- Information about pollution and violations from industrial facilities, which empowers NGOs, communities, investors, and consumers to press for greater compliance and responsible environmental stewardship; and
- Information about emergency situations and risks, which enables people to protect themselves during events such as a natural disaster or chemical explosion at an industrial plant.

***Source:** 'India: Strengthening Institutions for Sustainable Growth', Country Environmental Analysis, September 2006*

CASE STUDY#11: RTI Act helps Activists Win the Battle of Bio-safety of GM Crops

The Central Information Commission (CIC), on April 13, 2007, directed the Department of Bio-Technology (DBT) to disclose information on the data generated from tests carried out on genetically modified crops. Chief Commissioner Wajahat Habibullah delivered this right to information verdict in response to a petition filed by an environmental civil society organization, Greenpeace India, after the Review Committee on Genetic Modification (RCGM) had consistently refused to divulge the information.

Activists believe that Genetically Modified (GM) crops are responsible for a host of illnesses ranging from allergies in human beings to the death of sheep that eat the crop. Field trials of GM brinjal, okra, rice and mustard have been on for almost a year.

In February 2005, Greenpeace India requested the Review Committee of Genetic Modification to make public where the field trials were being conducted, and the toxicity and allergenicity data on the four GM crops along with the minutes of meetings held between 2005 and 2006. Although the DBT did disclose the locations of the field trials, it withheld data on toxicity and allergenicity, under Section 8.1 (d), stating that the information was confidential and that disclosure of intellectual property and trade secrets could harm the competitive position of the third party. The DBT added that the information was under evaluation and therefore could not be disclosed.

This has led to questions in the media about whether the DBT is guilty of promoting the commercial interests of multinationals and pushing GM crops at the cost of public health and bio-safety. In its hearing before the CIC, Raghunandan from Greenpeace emphasized upon certain published scientific papers that point to the environmental safety risks involved in field trials of genetically modified crops.

Delivering his verdict, Habibullah pointed out that the applicant's request for the results of toxicity and allergenicity tests on genetically modified rice, mustard, okra and brinjal could not be refused under the RTI Act. Any further grounds for non-disclosure are invalid even if the data in reference is in the process of development. The information was directed to be disclosed under Section 4 (1) (d) of the RTI Act, which asks to provide reasons for its administrative or quasi judicial decisions to affected persons.

PLANNING AND ORGANIZING TOOLS

A. Legal

i. Public Interest Litigation

For the benefit of the Indian citizens, the constitution provides a legal approach for enforcing environmental law by exercising constitutional right to a healthy environment before the Supreme Court and the High Courts. The Articles 48A and 51A (G) of the Constitution explicitly provide for the protection of the environment and it has also been expanded under Article 21 to include the right to live in a pollution-free environment. In the context of the above stipulation, Public Interest Litigation is proving to be an effective environment mainstreaming tool in resolving environmental disputes.

Strengths

- It places an obligation on governments to provide citizens with the right to information, the right to comment, the right to participate in decision-making, and the right to enforce through the courts.
- In India, it has often become the first resort because of the perceived inabilities or lack of political will of the regulatory agencies to enforce environmental laws and regulations.

Gaps

- The judgments are based on the current environmental legislation, which do not always reflect the actual ground conditions.
- In order to make a strong case, the agency filing the PIL must have an adequate understanding of the legal systems, a high level of motivation and minimum amount of resources to be able to see the case through. Moreover, an experienced lawyer with command over both the legal aspects and experience with the issue is another important success factor – and this combination of skills and knowledge is not easily available.
- Even after the court judgment; state agencies sometimes fail to implement the ruling due to insufficient staff, lack of the necessary skills and/or motivation. Thus, PIL rulings alone are not able to make a significant difference to systemic deficiencies.
- The long time in reaching a conclusion further increases the complexity of the problem at the ground level.
- In case of a burning issue, it is also important to build public opinion, such as by collecting information through the Right to Information Act (RTI), using community radio, campaigns and creating strategic alliances between local governance institutions and public movements. Only after doing all of this, will filing a PIL have the desired impact.
- The prolific increase in the number of PILs in recent years has also made the mechanism of the PIL somewhat difficult, as courts now have to deal with a larger number of cases.

Public Interest Litigation to Protect Environment

In 1985, the Doon Valley Case marked a watershed event in the establishment of public interest litigation in India. With the Government's inability to control the environmental destruction from quarrying, citizens in Uttar Pradesh turned to public interest litigation to protect their rights and the environment. In a landmark decision, the Supreme Court ordered the closure of 53 limestone quarries out of 60 in the Doon Valley because the facilities had adversely affected local water springs and the health of nearby residents. The Court held in its decision, "it is a price that has to be paid for protecting and safeguarding the right of the people to live in a healthy environment with minimum disturbance of ecological balance and without avoidance of hazards to them and their cattle, homes and agricultural land and undue affection of air, water, and environment"17.

With this decision, the Supreme Court established the important legal precedent of the "right to a healthy environment" and created a new avenue for addressing environmental concerns through public interest litigation and the courts.

Source: 'India: Strengthening Institutions for Sustainable Growth', Country Environmental Analysis, September2006

SUCCESS STORIES

India -- Perumatty Grama Panchayat vs. State of Kerala (2003.12.16) (Coca-Cola Groundwater Exploitation Case)

The exploitation of water by Hindustan Coca-Cola Beverages Pvt. Ltd., at Plachimada, resulted in drying up of nearby water sources like wells and ponds, causing deterioration of water quality, health and environmental problems, and acute drinking water scarcity. This gave rise to the Plachimada agitation started by *adivasi* (or tribal) women who forged alliances with local government bodies (*Gram Panchayats*), leading to the judiciary upholding the cause of the people, prohibiting the company to draw water for its use.

Vellore Citizens' Welfare Forum vs. Union of India

This landmark case involved the tanneries situated around the river Palar in Vellore, Tamil Nadu. A citizens' group charged that they were discharging toxic chemicals in the river, thereby jeopardizing the health of the residents. The Supreme Court allowed the Vellore Citizens' Welfare forum to bring a case in order to protect the health of the Vellore residents. The Court asked the tanneries to close their business.

M.C. Mehta vs. Union of India

Mainly with the objective of protecting people's health in Delhi, the Supreme Court issued directions to persuade government authorities to adopt steps to reduce the air pollution. The Supreme Court held that air pollution in Delhi caused by vehicular emissions, violates the right to life under Article 21 of the Constitution and directed all commercial vehicles operating in Delhi to switch to using Compressed Natural Gas (CNG) to safeguard the health of the citizens of Delhi.

MANAGEMENT TOOLS

B. Management Planning and control

ii. Environment Management Plan (EMPs)

Environmental Management Plan (EMP), Includes a system of plans, programmes and measures for planning the use or protection of natural resources and incorporation of

environmental objectives into the Master Plan. The EMP converses all aspects of planning, construction and operation of the project, which are relevant to environment. Therefore, EMP is an important tool for ensuring that the management actions arising from Environmental Impact Assessment (EIA) processes are clearly defined and implemented through all phases of the project life-cycle.

The main objective of the EMP is to identify the project-specific activities that would have to be considered for investigation of the significant adverse impacts and the mitigation measures required.

Strengths

- Helps organize, direct and control operational activities, and plan for future environmental risk.
- Enables benchmarking against company targets and competitors.
- Its clear and accessible style allows you to achieve ISO 14001 compliance with the minimum of effort.
- Helps ensure compliance with regulatory authority stipulations and guidelines, which may be local, provincial, national and/or international;
- It ensures that there is sufficient allocation of resources on the project budget so that the scale of EMP-related activities is consistent with the significance of project impacts;
- Responds to changes in project implementation not considered in the EIA;
- Responds to unforeseen events; and
- Provides feedback on continual improvement in environmental performance.

Gaps

- A common problem encountered during implementation of environmental management plans of such projects is lack of environmental awareness among engineers and managers concerned with day-to-day operations.
- Small industries lack environmental commitment, technical expertise in environmental management, and the financial capabilities to address environmental problems.
- Small industries also lack additional space for pollution control facilities.
- There are difficulties in obtaining the technical assistance of knowledgeable consultants. Since most of the units are dispersed, they find it difficult to come together for a joint or common treatment plant.
- The concern of depressed profit margins and decline in competitiveness prevents these units from using pollution control measures. More emphasis is laid on new investments, production, and other return-oriented opportunities.
- Soft loans for pollution control measures are not lucrative.
- There are subsidies offered for investments in pollution control as incentives, but the impact of these incentives on these units is little or nothing.
- Inspections are probably ineffective in bringing about the desired changes in behaviour because of bureaucratic or other problems, including the probability that enforcement is low and that the penalty for non-compliance is not stringent enough to act as a deterrent.

- The implementation of environmental laws and their enforcement are decentralized and so is the responsibility of the SPCBs. This is another haphazard method of addressing the issue.

- In addition, pollution laws have achieved little success. The courts have been slow to respond to enforcement actions sought by state pollution boards. The boards themselves have been poorly funded and charges of corruption have been regular and widespread.

C. Market-Based Tools

iii. Eco-labeling

Eco-labeling is an effective environment mainstreaming tool that attempts to provide an indicator of how well a product is environmentally adapted. It is based on the key principles of transparency, meaningfulness, verification, and truthfulness. Eco-labeling is fundamentally different from the setting of minimum product standards or requirements. The key difference is that eco-labeling is intended to reward environmental leadership. The International Standards Organization (ISO) has developed a series of standards and guidelines for use in various programmes, including eco-labeling. The ISO 14000 series of international environmental management system standards provide organizations around the world with guidance on how to manage the environmental aspects of their activities, products, and services more effectively.

The standards do not set specific environmental performance policies, objectives, or targets. These are set internally by the organization or externally by regulators. However, by using these standards, an organization may plan, monitor and continually improve its competitive position and environmental performance. There are five standards associated with the ISO 14000 Series:

- ***ISO 14001*** Environmental Management Systems - Specification with Guidance for Use
- ***ISO 14004*** Environmental Management Systems - General Guidelines on Principles, Systems and Supporting Techniques
- ***ISO 14010*** Guidelines for Environmental Auditing - General Principles
- ***ISO 14011*** Guidelines for Environmental Auditing - Audit Procedures for Auditing of Environmental Management Systems
- ***ISO 14012*** Guidelines for Environmental Auditing - Qualification Criteria for Environmental Auditors

Strengths

- Eco-labeling is a key trade issue and often determines whether products will be accepted in an importing country.
- Environmental labels and declarations can help consumers make decisions about the products they buy and whether they are environmentally preferable.
- The desired change in consumer demand as a result of environmental labels and declarations is expected to be economically rewarding for those firms which have fulfilled the requirements of the standard on the basis of which the label has been awarded.

- Eco-labeling attempts to encourage the manufacturing of products with a reduced impact on the environment and to address public concerns about raw material scarcity, shrinking landfill space, and the impact of pollutants on air and water.

Gaps

- Even though there are 25 eco-labeling programmes around the world, yet their scope and success is limited on account of inadequate promotion in India and the lack of compatibility between various eco-labeling schemes around the world.
- In order to capitalize on the scope of eco-labeling, manufacturers indulge in vague logos and claims, which are meaningless, non-transparent and lack standards. Besides being misleading, 'such a proliferation of claims undermines consumer trust and confidence in valid claims, thereby stifling the progress towards real sustainable food production and consumption and impending consumer choice.'
- There is the problem of the increased cost of foods labeled as 'eco'.
- The proliferation of information is confusing to consumers.
- In addition, there is a plethora of standards being applied with no consistency. Furthermore, product standards are not addressing labeling issues.
- ISO environmental labeling standards do not have a profile in the Indian industry.
- There is lack of awareness of the Ecomark Scheme among Indian industry; in particular, among medium and smaller players.
- At the same time, consumer awareness continued to be poor in the absence of a national communication strategy
- There are big differences between various eco-labeling schemes, some of which are based on the detailed analysis of the environmental impacts as compared to some other systems that may analyze only certain stages of the life-cycle.
- The market has manipulated this situation to lobby with the Government to make Eco-labeling a voluntary scheme that will allow manufacturers to disclose and cover information at will.

KEY CHALLENGES FOR ENVIRONMENTAL MAINSTREAMING

1. Mobilising and re-orienting political will
    - To match political vs. environmental timeframes
    - Environment and sustainable development should be an internalized objective
    - There is a need for effective enforcement and strict action against violators
    - Co-ordination and accountability among government departments
2. Changes in government systems and procedures
    - Budget allocations for environmental mainstreaming & timely fund-flows
    - Panel of environmental experts in all ministries & departments
    - Prioritise most important sectors for environmental mainstreaming
    - Provide fiscal and other incentives to performing departments, initiatives and personnel
3. Increasing public awareness and understanding
4. Enhancing capacity
    - Oriented and trained personnel
    - Systems and processes (including tools and techniques)
    - Infrastructure, facilities and equipment
5. Improved Tools
    - Focused research for strengthening tools
    - Flexibility in application of tools to address sector specific concerns

KEY LEARNINGS FOR ENVIRONMENTAL MAINSTREAMING

1. Action needs to be taken at various levels of corporate policies, procedures and culture as well as country programme development in order to influence institutions, policies, day-to-day practices and expenditures;
2. Mainstreaming receives its legitimacy by being perceived as the responsibility of all individuals and units rather than being associated with any one unit within the organization;
3. The achievement of mainstreaming is contingent upon bringing together capacity building and long-term commitment.
4. Mainstreaming must be based on an understanding of the motivating forces operating within an organization as well as the constraints that these forces place on the process;
5. Effective mainstreaming needs to be based on the existing functions and procedures of an organization, rather than creating new ones.

ANNEXURES

ANNEXURE I

Tool Box

Key Tasks	Actions	Tools/Methods	Challenges/Gaps
Environmental Assessment	• Spatial Assessment • Impact Assessment and strategic analysis • Economic and financial Assessment	**Remote Sensing and GIS** ➢ Zoning Atlas, ➢ Industrial Estate Planning ➢ EMP ➢ Environment Atlases ➢ **Environmental Impact Assessment (EIA)** ➢ **Social Impact Assessment (SIA)** ➢ **Strategic Environment Assessment (SEA)/Integrated Environment Assessment (IEA**) ➢ State of Environment Reports ➢ Cost Benefit analysis (CBA)	EIA ➢ Little public participation in actual implementation ➢ Unavailability of reliable data ➢ Compliance monitoring after EIA is seldom carried out ➢ Legal regulations not effective ➢ EIA's are controversial in India because of little participatory democracy in the formulation and implementation of environmental legislation. ➢ The EIA and environmental clearances fall within the power of the Center but the implementation of pollution control is with the states. This leads to a scenario where multiple agencies share similar responsibilities without well defined roles ➢ Public distrust and an assumption that the

			Government is always under the influence of developers and therefore any decision that the government makes is automatically suspect ➢ The requirements for EIA in India are generally comprehensive and include information on land use pollution sources in air, water and solid waste quality. But the problem arises here because of no proper set of guidelines for project types covered by the rule.
Improving access to knowledge, trainings, Capacity building	➢ Enhancing the capacity of selected Government officials and administrators • Frequent and focused trainings on cross-cutting issues, resource management, People Participatory Approach focusing on their role as facilitating agencies • Mandatory orientation programmes for in-service candidates, officials from various sectors and assistant extension workers ➢ Designing, upgrading and expanding sector-specific training programmes • Technical guidance to industries by the Department of Environment ➢ Targeted, well-designed and well-delivered programmes for community learning	➢ **Training and Capacity building tools** • Workshops • Exposure Visits, • Technical trainings	Inadequate Skills ➢ Need for trained technical staff within MoEF as well as other ministries and agencies involved in planning and implementation processes. ➢ Environmental trainings are not given on a regular basis to the industrial workforce. ➢ Not enough awareness on existing training programmes as well as access to them. ➢ The training programmes are not designed and structured to suit the role and specific requirements of the

	• Incorporation of environmental concerns in all subjects and not treating environment as a separate subject. • Mandatory service in rural areas for management students		designated personnel. ➢ No targeted training programs for communities as well as informal sector workforce to integrate environmental concerns in their activities. ➢ Lack of funds for conducting training programmes. ➢ Ministries other than MoEF are not completely aware of the environmental policies. ➢ Public awareness on environmental issues is inadequate. ➢ Lack of Public interest and participation makes it even more challenging for planning and framing policies for small sectors.
Promoting participatory and Consultative approach	➢ Enhancing community knowledge • Public online databases on environmental indicators • **Right to Information Act**: Maximize effectiveness of the Right to Information Act by developing clear procedural guidelines regarding the request for information • Dissemination of relevant information to affected communities	➢ Participatory Rural Appraisal (PRA), ➢ public hearings ➢ Media	➢ Public awareness on environmental issues is inadequate. ➢ Ministries other than Environment are not completely aware on the environmental policies ➢ Lack of Public interest and participation makes it even more challenging for planning and framing policies for small

	• Publicizing information and establishing facilitation centers ➢ Involving CSOs and communities in drafting legislations ➢ Showcasing local success stories on effective environment management practices • Role of media for sharing local success stories and experiences.		sectors. ➢ Resistance of community towards adopting new technologies
Promoting good environmental performance by sectors	➢ Regulatory incentives to support voluntary initiates and good practices ➢ Self monitoring and reporting systems	➢ Corporate Social Responsibility (CSR) ➢ Fiscal Instruments ➢ Regulatory incentives ➢ EMP	
Strengthening monitoring and enforcement	➢ Identifying sector-specific indicators for environmental assessment ➢ Updating sectoral guidelines for monitoring, and adding new sectors of growing impact ➢ Innovative regulatory approaches to overcome the lack of credible sanctions	➢ RTIs ➢ Public hearings ➢ MDGs, SDGs ➢ GRI ➢ SoE ➢ Environmental audits ➢ MEAL ➢ Environmental indicators	➢ Rather than trying to understand the possible impacts of a proposed development on the affected communities, more time is spent in identifying regulatory obstacles that are viewed as impeding construction of the proposed project. ➢ Lack of State Environment Policy for other departments. ➢ Government's soft approach to check and punish violators ➢ Lack of environmental concerns while drafting

			policies such as SEZs. ➢ Lack of environmental legislation on for small sectors. ➢ Lack of trained, dedicated staff to ensure monitoring and enforcement . ➢ No cell to monitor environment in the urban development and rural development ministry. ➢ Lack of stringent guidelines for the housing sector in urban areas. ➢ Lack of regulations to check construction activities and there are no limits set.
Strengthening accountability for regulator performance	➢ Detailed oversight guidelines ➢ Regular assessment of PCB's performance, based on a distinct set of indicators		➢ Environmental concerns seen as entirely MoEF's and DoE's responsibility, hence, other sectors presume no responsibility and accountability. ➢ Indifference of sectoral ministries towards MoEF's interventions. ➢ Other departments are not notified. ➢ Every sector of Environment is dividing into many sub-

			sectors; this inhibits covering all the aspects of environmental mainstreaming due to limited man-power. ➢ Lack of adequate focus leads to collection of copious baseline data that is neither specific to the project, nor used in analysis. The inadequacy of appropriate environmental data in the report results in delays in the environmental clearance process in India.
Planning and Management	➢ Community involvement in environmental monitoring ➢ Integration of environmental zoning atlases by SPCBs with industrial and urban development plans and location decisions ➢ Evaluate, share and promote national best practice examples of State-level policies and institutional mechanisms by sectoral and environmental authorities ➢ Prioritizing most important sectors for mainstreaming like rural development, agriculture, industry and infrastructure ➢ Set up a panel of Environmental experts in all ministries and Government departments. ➢ Establish a strategic network amongst schools, NGOs, experts and Government department	➢ Environment Management Plans (EMP) – • ISO, • ecolabelling	➢ There should be flexibility in application of tools to address sector-specific concerns. ➢ The economic agenda of the Government might be contrary to achieving their objective of Sustainable development. ➢ Short Sightedness of environmental investment programmes by the Government

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Annexure 2

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