

STRATEGIC PLAN

2012-13 TO 2016-17

(Aligned with 12th Five year Plan)

MINISTRY OF ENVIRONMENT AND FORESTS

PARYAVARAN BHAVAN

CGO COMPLEX

NEW DELHI

CONTENTS

Section	Subject	Page
	Introduction	2
1	Vision, Mission, Objectives and Functions	3-4
2	Assessment of the situation	5-25
3	Strategy	26-45
4	Linkage with RFD	46
5	Implementation Plan	47-48
6	Required Resources	49
7	Review and Monitoring	50

Introduction

The Ministry of Environment and Forests implements policies and programmes relating to conservation of the country's natural resources including lakes and rivers, biodiversity, forests and wildlife, ensuring the welfare of animals and prevention & abatement of pollution. It also serves as the nodal agency of the Govt of India for various projects and programmes relating to Environment and Forests and Wildlife supported by the Government of India and International Intergovernmental Organizations. The implementation of the plans of the Ministry is supported by legislative and regulatory measures, aimed at preservation, conservation and protection of the environment. Besides legislative measures, the ministry has evolved a number of policy measures, in particular, the National Conservation Strategy and Policy Statement on Environment and Development, National Forest Policy, Policy Statement on Abatement of Pollution and National Environmental Policy.

India is the one of the oldest civilization in the world, with kaleidoscopic variety and rich cultural heritage. Its climate is affected by two seasonal winds, making it tropical monsoonal type of environment. India is a megadiverse country. With only 2.4% of world's land area, it accounts for 7-8% of the recorded species of the world. India is the 7th largest country in the world with a total geographical area of 3,287,263 Mha., of which 146.82 Mha. is degraded land. Air quality, impacted adversely due to emission from vehicular, industrial and domestic activities, is an issue of concern in the light of India's development goals. As regard water, the combination of rainfall, surface and ground water resources has been sufficient in providing adequate water to the Indian population. However, rise in demand and developmental pressure is changing the characteristics of water. India also has to face the challenge of rising greenhouse gas emissions.

The Ministry of Environment and Forests is responsible for meeting the above mentioned challenges. It has developed its vision, mission, objectives and functions aligned with national environmental goals while at the same time conserving and improving the environment, providing clean air and water, protecting forest and wildlife, ensuring chemical safety and cleaning up polluted sites without coming in conflict with industrialization and infrastructure development required to provide a decent standard of living to the people of India.

Section-1

Vision, Mission, Objectives and Functions

Vision:

Conservation of environment and natural resources for the present and future generations in a manner consistent with the aspirations of the country for growth and development

Mission:

To plan, promote, coordinate and oversee the implementation of environmental and forestry programmes in order to protect the environment and maintain a balance between conservation and development activities

Objectives:

- I. Increase the forest and tree cover to 33% of the geographical area of the country
(Afforestation and regeneration of degraded Forests)
- II. Conservation of the existing forests, wildlife and water resources and survey of various areas for identification of new species
(Protection of Forests, Conservation of rivers, Biodiversity Conservation, Conservation of Wetlands, Wildlife Conservation, Conservation of resources in the eco-sensitive zone, Capacity building, training and research in classical and molecular taxonomy)
- III. Control of Pollution (Air, Water, Noise and Industrial pollution)
(Better ambient water quality, Management of hazardous substances and Better Environmental governance)

Functions:

The major functions of the Ministry include:

1. Formulation of national policies on management of environment, forests and wildlife;
2. Implementation of provisions of related legislations on forests, environment and wildlife, control of pollution of air and water, etc.
3. Survey and exploration of natural resources particularly of forests, flora, fauna, ecosystems, etc.
4. Bio-diversity conservation including that of lakes and wetlands;
5. Conservation, development, management and abatement of pollution of rivers.
6. Environmental research and development, education, training, information and awareness;

7. Regulation of diversion of forest land for non forestry purposes;
8. Environmental Impact Assessment;
9. Wildlife conservation, preservation, protection planning, research, education, training and awareness;
10. Afforestation and eco-development;
11. Prevention of cruelty to animals;
12. Administration and Management of subordinate and autonomous institutions of the Ministry; and
13. Monitoring of implementation of central sector and centrally sponsored schemes funded by the Ministry.

Section- 2

Assessment of the situation

The Ministry of Environment and Forests, in its 25 years of existence, has developed a robust regulatory framework including creation of conservation and pollution abatement infrastructure. Achievement of optimal outcomes may however require strengthening of institutional capacity, better enforcement and compliance measures, increased financing and prioritisation at the State and local level.

The scale of the environmental challenge is set to increase in magnitude as well as complexity due to various threats such as the imperative of maintaining high economic growth; increasing globalization, population growth and industrialization; unmet basic needs; lifestyle changes; and huge biotic pressure. Nevertheless, the Ministry has the opportunity to take forward the environmental agenda in the light of increased public awareness and civil society pressure; improved economic status; need to align with global standards and practices; strong technology base and optimum utilization of Centres of Excellence and other attached institutions and subordinate offices

The following macro and micro factors within the country and outside have an impact on environmental regime:-

- Country's political landscape,
- Policy paradigm and socio-economic policies,
- Views of other Ministries/Departments of the States and Central Government,
- National priority setting between aspirations for growth and concerns for environment,
- Interpretation of various environment laws by Courts,
- Awareness and active participation of various stakeholders in sustainability of environment related programmes,
- Socio-economic and development issues of forests-fringe dwellers,
- Global geopolitical events, international developments and multilateral and bilateral negotiations on issues like climate change, biodiversity conservation, illegal trade in wildlife, sustainable forest management, ozone depletion and pollution,

- Country's economic growth,
- Transboundary movement of hazardous substances and other international conventions and obligations,
- Delayed receipt of utilization certificates and physical progress reports for the funds released under various schemes and information on various issues from the State Governments and other organisations in the public as well as the private sectors,
- Delay in inter-ministerial consultations, pressures from various industries for according approvals for undertaking developmental projects,
- Population pressure on limited natural resources,
- Views of NGOs and civil society on major policy issues, and
- Allocation of outlay by the Planning Commission and the Ministry of Finance.

It may be useful to discuss the external factors impacting the evolution of India's environmental architecture.

2A Role of external factors on Evolution of India's environmental architecture:

The evolution of India's environmental architecture-the institutional and the regulatory framework- has been shaped largely by certain major events, a series of judicial pronouncements and by the imperative of fulfilling the commitments arising out of Multilateral Environmental Agreements (MEAs).

The Central Government, the Supreme Court and the civil society are the major actors that have significantly contributed to the shaping of this architecture. The role of the other major stakeholders such as the state governments and the industry has been relatively marginal. State Governments and Local bodies have general responsibilities to ensure compliance and enforcement. States have on the other hand been exerting pressure on the central government for expeditious clearance of projects and for allowing diversion of forest lands for development. The civil society has been increasingly active in highlighting environmental concerns and spotlighting cases of environmental degradation and non compliance.

2A(1) Stockholm Conference

The Stockholm Conference on the Human Environment in 1972 was a watershed event in the global environment movement. The Conference, held in pursuance of a decision of the UN General Assembly, agreed on the need for comprehensive country legislations addressing health and safety issues for people, flora and fauna. As a follow up of the resolutions adopted at Stockholm, the Government of India set up a Committee on human environment under the chairmanship of Shri Pitambar Pant, Member Planning Commission, to study the state of environmental problems in the country and the institutional set up, and to suggest measures.

Prior to 1972, environmental concerns such as sewage disposal, sanitation and public health were dealt with by different central Ministries, each pursuing these objectives separately without a proper system of coordination. It was realised that a national body was needed to bring about coherence and coordination in environmental policies and programmes and to integrate environmental concerns in the country's planning process. This led to the setting up of a National Committee on Environmental Planning and Coordination (NCEPC) in 1972 in the Department of Science and Technology, as an apex advisory body for all matters relating to environmental protection and improvement.

Creation of Department of Environment

The NCEPC too was soon found inadequate and a High Powered Committee (Tiwari Committee) was set up under the Deputy Chairman of the Planning Commission to take a fresh, comprehensive look at the administrative and legislative aspects of environmental protection. On the recommendations of this Empowered Committee, a separate Department of Environment (DOE) was established on November 01, 1980.

A similar situation obtained on the legal front, pre-1972. Various existing enactments such as the Indian Penal Code, the Criminal Procedure Code, the Factories Act, the Indian Forest Act, the Merchant Shipping Act, etc., contained some provisions for regulation and legal action in respect of certain aspects of environmental pollution. However, these were scattered,

inadequate and not effectively applicable for checking environmental degradation, particularly in the context of growing industrialisation, urbanisation and population growth.

Water and Air Acts

After the Stockholm Conference, it was considered necessary to enact uniform laws all over the country for tackling the emerging environmental problems endangering the health and safety of people, as well as the flora and fauna. The Water (Prevention and Control of Pollution) Act, 1974 was the first environment specific enactment in the country. It was a landmark legislation which not only provided a comprehensive set of rules for controlling water pollution but also gave birth to the first set of environmental regulatory agencies. The Pollution Control Boards at the Centre and in the States came into being as a consequence of this Act. Thereafter, in 1981, the Air (Prevention and Control of Pollution) Act was enacted.

2A(2) Role of Centre vis a vis States: 42nd Amendment

The role of the Centre in matters related to environment has evolved in a very round about manner. Under the constitutional scheme of division of powers, the subjects of “forests” and “protection of wild animals and birds” were in the state list. These were moved to the concurrent list in 1976 through the 42nd amendment. Environment as such does not find mention in any of the three lists. Land and water are state subjects, except regulation and development of inter-state rivers, only to the extent it is specifically declared by the Parliament to be required in public interest. Incidentally, by the 42nd amendment “protection and improvement of environment and safeguarding of forests and wildlife” was included in the directive principles of State policy and it was made a fundamental duty of every citizen of India “to protect and improve the natural environment including forests, lakes, rivers and wildlife and to have compassion for living creatures.

Given this background, the Central Government resorted to the expedient of implementing the decisions taken in the Stockholm Conference to enact the Environment (Protection) Act, 1986. Earlier, the same logic was used to enact the Air (Prevention and Control

of Pollution) Act, 1981. The Water (Prevention and Control of Pollution) Act, 1974, on the other hand, was enacted by Parliament on the basis of the authority given to it by resolutions of State legislatures under Article 252 of the constitution.

Wildlife (Protection) Act, 1972 and Forest Conservation Act, 1980

The Forest Conservation Act, 1980 could be enacted by the Central Government as a consequence of the 42nd amendment. This Act made prior approval of Central Government mandatory for using forest land for non-forestry purposes and also laid down the pre-requisites for such diversions. Earlier in 1972, the Parliament enacted the Wildlife (Protection) Act, 1972, which enabled the Central Government to declare certain animal species endangered and to create wildlife sanctuaries and national parks. This was done at the request of eleven State legislatures.

2A(3) Bhopal Gas Leak

During the early hours of December 3, 1984, methyl isocyanate, a highly toxic and reactive gas, leaked from the Union Carbide Plant at Bhopal. It was the worst industrial disaster the world had ever witnessed. The immediate death toll was around 2,500. The eventual number was much higher. Several thousand people suffered permanent disability and there were significant environmental and health effects of a more lasting nature; in terms of morbidity, premature deaths and deformities of children, and groundwater and surface contamination in the surrounding areas.

The accident and the response to it brought into sharp focus the serious shortcomings in the environmental regulatory and institutional frameworks. It was realised that expanding industrialisation, without corresponding evolution in safety and environment regulations can have catastrophic consequences. The disaster indicated a need for prescribing and enforcing international standards for environmental safety and implementing preventive strategies to avoid similar accidents and improve industrial disaster preparedness.

Creation of the Ministry of Environment and Forests

Following these events, environmental awareness and activism in India increased significantly. The Government also quickly responded. Barely a month after the tragedy, on 4th January, 1985, the DoE under the Ministry of Science and Technology was expanded into a full-fledged Ministry of Environment and Forests (MoEF) for developing a more comprehensive and effective institutional framework to respond to the growing scale of environmental challenge. The forestry division of the Ministry of Agriculture was merged with this new Ministry.

Environment (Protection) Act, 1986

A year later, in 1986, the Parliament enacted a comprehensive, umbrella legislation i.e. the Environment (Protection) Act, 1986 for environment in its entirety. The Water and Air Acts were designed to deal only with only water and air pollution problems. Within the next few years, the Ministry notified specific rules to regulate various aspects related to handling of hazardous chemicals and wastes, namely Manufacture Storage and Import of Hazardous Chemicals Rules, 1989 and Hazardous Wastes (Management and Handling) Rules, 1989. In 1991, the Public Liability Insurance Act was enacted to provide for immediate relief to victims of chemical accidents.

2A(4) Judicial Pronouncements

The judiciary stepped into the domain of environment mainly through orders passed by the Supreme Court in public interest litigations. In the process, it laid down important principles for environmental protection. In some cases, suo moto notice was taken of cases of pollution or damage to environment. Some of the important judgments are mentioned below:

- In 1986, in the Oleum gas leak case (M.C. Mehta vs. UOI), the Supreme Court laid down the principle of absolute liability for hazardous units.
- In 1991, the Supreme Court expanded the scope for judicial action in environmental matters by interpreting the right to life under Article 21 to include

healthy and pollution free environment as a fundamental right (Charan Lal Sahu vs. UOI case on Bhopal Gas leak).

- In 1996, in the T. N. Godavarman Case, the Court reinterpreted the Forest Conservation (FC) Act, 1980 to extend its application to forests as per dictionary meaning. In the same case, Supreme Court evolved the concept of continuing mandamus to pass a series of orders for forest conservation. It set up monitoring mechanisms such as the Central Empowered Committee (CEC) under its own supervision and created the Compensatory Afforestation Fund Management and Planning Authority (CAMPA) with the mandate to decide the utilization of funds for compensatory afforestation collected by the states over the years, which had been lying unutilized.
- In 1996, in the Indian Council for Enviro-legal Action vs. Union of India (Bichhri Case), the Supreme Court upheld the “polluter pays” principle and directed that the person carrying out a hazardous activity is liable to make good the loss caused by this activity irrespective of whether he had taken reasonable care. The Court made the polluting industry “absolutely liable for compensation”.
- In 1996, in the Vellore Citizens Welfare Forum vs. Union of India case, the Supreme Court made the concept of sustainable development, including the principle of inter-generational equity as described in the Brundtland report an integral part of the law of the land. It based its orders on the ‘precautionary principle’ and the ‘polluter pays principle’ of the Rio declaration of UNCED, 1992.
- The orders of the Supreme Court in the year 1999 in Motor Vehicle pollution case (M. C. Mehta vs. Union of India) prescribed stricter emission standards based on international norms (Euro-I and Euro-II) and led to the introduction of a number of measures such as catalytic convertors, CNG, and lead free and low sulphur diesel.
- In 1999/2001, it pronounced in the APPCB vs MV Nayudu case that there is a need for separate environment courts and asked the Law Commission to undertake a study on this issue.

A number of Acts, Regulations, Authorities and Guidelines can be attributed directly or indirectly to judicial directions. Some of these are:

Acts

- Public Liability Insurance Act, 1991
- National Environment Tribunal Act, 1995
- National Environment Appellate Authority Act, 1997
- National Green Tribunal Act, 2010

Rules

- Bio-medical Waste (Management & Handling) Rules, 1998
- Recycled Plastics Manufacture and Usage Rules, 1999
- Noise Pollution (Regulation & Control) Rules, 2000
- Municipal Solid Waste (Handling and Management) Rules, 2000

Authorities

- Loss of Ecology Authority, Tamil Nadu, 1996
- Dhanu Taluka Environment Authority, 1996
- Environment Pollution Control Authority (EPCA), 1998
- Taj Trapezium Zone Pollution Authority, 2003

Guidelines

- Guidelines for upkeep of Treatment Storage and Disposal Facilities (TSDFs)
- Guidelines on transportation of hazardous chemical and waste
- Guidelines on Idol emersion
- Guidelines on Ship breaking

Today there is a heightened level of environmental awareness in the country, which is acting as a strong check on the executive and the industry. Increasingly, civil society organizations and the Government are working together to evolve policy and regulatory frameworks and monitor implementation. The Right to Information Act, 2005 has become a

powerful tool for transparency and easy access to information including in the area of environmental management and is a major step in implementing the Rio Principles. The Ministry has taken measures to put all relevant information in the public domain and consultations with relevant stakeholders are a norm in the decision making process.

2B List of Stakeholders/Clients

S. No.	Stakeholders/ Clients
1.	Ministries/Departments of the Government of India
2.	All States/ UTs Governments.
3.	Citizens/ Organisations/ Institutions/ NGOs / Universities/ Research Institutions/ Industries etc.
4.	Central Pollution Control Board/ Pollution Control Boards/ Pollution Control Committees and Departments of all States/UTs.
5.	International Organisations etc.
6.	All Institutions/ Organisations under the administrative control of the Ministry.

Stakeholder engagement

There are different stakeholder groups, which are relevant for different elements of the strategy, for example;

- Conservation of biodiversity including increase in forest cover and protection of wildlife-local communities, forest dwellers, forest officials;
- Clean air and water and waste management- ULBs, State Governments, Central Ministries such as Urban development and Health, Industry associations, SPCBs, Scientific organisations, NIC; and
- New institutions- Planning Commission, Ministry of Finance, State Governments

Stakeholder Consultations

The Ministry has a well established system of stakeholder consultations. This process will have to be further strengthened in implementing the new strategy. Some examples of stakeholder consultations undertaken in the recent past are given below:

a) Public consultations on Bt Brinjal

The public consultations on Bt brinjal developed by Mahyco were done at several locations namely, Kolkata, Orissa, Bangalore, Hyderabad, Nagpur and Chandigarh during the period from January to February, 2010.

b) Stakeholders consultations on Cartagena Protocol on Bio-safety

The Stakeholders consultation on the Supplementary Protocol on Liability and Redress in the context of Cartagena Protocol on Bio-safety was done in September, 2010.

c) Public consultation/hearing under EIA Notification 2006.

The public consultation/hearing is done under EIA Notification of September 2006 for all projects as given in the schedule to the Notification. These public consultations/hearing are organized by the respective State Pollution Control Boards. The detailed procedure of public consultation/hearing is covered under the EIA Notification, 2006.

d) Stakeholders Consultation/Workshop for preparation of HCFC Phase out Plan.

Six Stakeholders Consultation Workshops were organized at Delhi, Chennai and Mumbai for preparation of Hydro Chloro Fluoro Carbon (HCFC) Phase out Plan in Refrigeration, Air Conditioning and Home Manufacturing Sectors.

e) Stakeholders Consultation Workshop on good servicing practices

Seven Stakeholder Consultation Workshops were organized for Awareness Generation and Good Servicing Practices and Retrofitting of Ice Candy Plants in Small and Medium Enterprises at Jaipur, Rohtak, Kanpur, Chennai, Raipur, Srinagar and Ahmedabad.

f) National Consultation Workshops for phase out transition strategy in MDI Sector

The National Consultation Workshops on policy regulation for Chloro Fluoro Carbon (CFC) Metered Dose Inhaler (MDI) phase out transition strategy implementation and an adoption of CFC free alternatives was held on 05th October, 2009 at Pune and 20th May, 2010 at New Delhi.

g) Sectoral Working Group Consultation for preparation of sectoral strategy for HCFC phase out

The Ministry organized a sectoral working group consultation workshop for preparation of sectoral strategy for HCFC phase out from 24th -25th September, 2009 at Vigyan Bhawan, New Delhi.

h) Stakeholder consultation under Forest Conservation Act 1980

The proposals for diversion of forest land under the Forest Conservation Act 1980 are received from the concerned State Government after due consultation with respective Gram Sabhas. The Gram Sabha has to provide its No Objection Certificate in this regard.

i) Stakeholder Consultation under the Scheduled Tribes and other Forest Dwellers recognition of Forest Rights Act, 2006

The Scheduled Tribes and other Forest dwellers recognition of Forest Rights Act, 2006 has a built in mechanism for stakeholder consultation. The concerned Gram Sabhas provide a resolution passed by at least 50% of their strength indicating that all the rights have been recognized. They have to enclose copies of the resolution. Further, the concerned Deputy Commissioner has to provide a certificate in this regard.

j) Stakeholder Consultation Workshops on mainstreaming conservation and sustainable use of Medicinal Plant Biodiversity

- National Consultation Workshop on Finalization of 4th National report to the Convention on Biological Diversity (CBD) at New Delhi on 24th February, 2009.
- Stakeholder Consultation Workshop on mainstreaming conservation and sustainable use of Medicinal Plant Biodiversity on 27th February, 2010 at Itanagar, Arunachal Pradesh, 14th February, 2010 at Raipur, Chhattisgarh and 28th September, 2009 at Dehradun in Uttarakhand
- National Consultation Workshop for finalizing the strategy & guidelines for conservation and management of Medicinal Plants Genetic Resources in India from 13th-14th May, 2010 in Bangalore.
- Stakeholder Consultation Workshop on state level policies & legal systems for conservation and sustainable harvesting of Medicinal & Aromatic Plants in September, 2009 at Raipur, Chattisgarh, and February, 2010 at Itanagar, Arunachal Pradesh.
- State level Stakeholder Consultation and Brainstorming Workshop on Development of Protocols for sustainable harvesting of Medicinal and Aromatic Plants in October, 2010 at Dehradun, Uttarakhand.

k) Coastal Regulation Zone Notification, 2011

The Coastal Regulation Zone Notification, 2011 has provided an inbuilt mechanism for public consultation/hearing.

l) Stakeholder Consultations on Climate Change Issues

- The Ministry has constituted a Consultative Group on Climate Change comprising of representatives of the Ministries of External Affairs, Power, Finance, Commerce & Industries, New and Renewable Energy Resources, Agriculture, Rural Development, Water, Science and Technology and the Planning Commission.
- The Ministry has also constituted the Indian Network for Climate Change Assessments comprising various Research Institutions in the areas of Emissions, Vulnerability Assessments and Adaptation (Agriculture, Rural Development, Power Water, DST and MNRE).

2C Strengths and Weaknesses of the Ministry

Strengths

Over the last twenty five years, there has been progress in all key areas namely (i) putting in place a regulatory framework (ii) evolving National Policies; (iii) Institutional Development; (iv) implementing action plans for creating pollution abatement infrastructure, afforestation etc. The major accomplishments, which can also be categorized as strengths are the following:

- A robust regulatory framework
- Institutional Structure
- Mainstreaming of Sustainability Concerns
- Creation of Conservation and Pollution Abatement Infrastructure
- Successful implementation in certain areas
- Increased Environmental Awareness, civil society involvement and transparency

Regulatory framework and institutional structure

The development of a comprehensive and robust framework of laws, rules and standards and a fairly well developed institutional structure can certainly be listed as a major accomplishment. This framework has been regularly revisited to adapt it to changing ground realities and to align it with current international best practices.

Mainstreaming of sustainability concerns

The system of prior forest and environmental clearances under the Forest (Conservation) Act, 1980 and the Environment (Protection) Act, 1986 has become well established and is a major step for ensuring sustainability right at the inception of a project. This has helped check diversion of forest land and ensure that the industries incorporate preventive and mitigative equipments, technologies and processes.

In addition, there are several initiatives by sectoral Ministries in areas like energy generation, transport, and renewable which are contributing towards sustainable development and a Green Economy. These include reforestation on a very large scale, strong measures for energy conservation, promoting use of renewable and other clean energy sources, including through market based incentives and fiscal instruments, development of mass rapid transit systems etc. NREGS, being implemented since 2005, is one of the largest schemes of its kind in the world to provide livelihood security to rural households. Significantly, most of the economic activities under this scheme create green jobs such as in water conservation, afforestation and rural connectivity. The Forests Rights Act, 2006 seeks to strengthen the symbiotic relationship between the forest dwellers and the forests. The National Green Tribunal Act, enacted in 2010, provides a mechanism for fast-track environmental justice.

These actions are evidence of successful mainstreaming of environmental concerns and sustainable development being enshrined as an integral part of the planning process.

Conservation and Pollution Abatement Infrastructure

A chain of wildlife sanctuaries and national parks has been set up under the Wildlife Protection Act, covering about 5% of country's total area, providing legal protection to various threatened and endangered species, including tiger, lion, elephant, rhino etc. This has been

supplemented by setting up of National Tiger Conservation Authority and Wildlife Crime Control Bureau to improve the infrastructure and manpower for tiger conservation, relocation of human settlements and checking illegal trade in wildlife. These measures have helped conservation of biodiversity, including forests and wildlife.

Discharge standards for effluents and gaseous emissions have been notified under the Environment (Protection) Act and the Air and Water Acts. These have resulted in the industries taking measures to install pollution control devices and adopt new environmental friendly technologies. Sewage treatment infrastructure has been created in several cities, contributing to improvement in river and lake water quality. The Ministry has facilitated construction of common effluent treatment plants and common facilities for treatment, storage and disposal of hazardous and bio-medical wastes.

Successful implementation

A massive afforestation programme is being implemented by NAEB through community participation and using the Joint Forest Management approach. In addition, social forestry has been an important component of rural development and employment generation programmes for many years. The FC Act checks diversion of forest land and provides for compensatory afforestation. The Supreme Court judgement in the Godavarman case substantially increased the funds available for this purpose by introducing the NPV concept. These initiatives have resulted in India being one of the very few countries in the world where the decline in forest cover was not only arrested but actually reversed, despite rapid economic development and increasing biotic pressure. Similarly, deterioration in the ambient air quality in several major cities has been arrested, despite increase in human and vehicular population through a combination of measures such as introduction of CNG, elimination of sulphur from diesel and introduction of stricter emission norms.

New initiatives

There has been forward looking action in areas like biodiversity and climate change. A comprehensive National Action Plan on Climate Change has been initiated with eight national missions in the areas of solar energy, enhanced energy efficiency, sustainable agriculture, sustainable habitat, water, Himalayan eco-system, increasing the forest cover and strategic

knowledge for climate change. The objective is to achieve sustainable development with co-benefits in terms of climate change. Under the National Biodiversity Act, a three tier structure has been established, namely, National Biodiversity Authority (NBA), State Biodiversity Boards (SBBs) and Biodiversity Management Committees (BMCs) to conserve biodiversity and promote its sustainable use and to ensure fair and equitable sharing of the benefits derived from the use of genetic resources including traditional knowledge.

Weaknesses

A robust regulatory framework is in place with fairly extensive institutional set up in the Ministry of Environment and Forests, supported by institutions such as the Central and State Pollution Control Boards. Optimal achievement of the Ministry's Vision Mission is, however, hampered by inadequate finance and infrastructure. These weaknesses can broadly be listed as follows:

- Inadequate enforcement and compliance
- Inadequate institutional capacity
- Inadequate Finance
- Low Priority at States and at Local Level
- Shortcomings in implementation of Plans

Weak enforcement and compliance

Many of these weaknesses are inter-related. The CPCBs and SPCBs, which are entrusted with the responsibility of enforcing the notified standards and the provisions of various environmental laws, have not been able to effectively exercise their powers because of capacity constraints. The mechanism of criminal prosecution of environmental offenders has also not been working efficiently. Thousands of environmental cases are pending in various Courts across the country. This litigation is increasing due to heightened public awareness, greater pressures on environment and emerging environmental challenges.

Inadequate institutional capacity

CPCB and SPCBs are the main instruments for standard setting, R&D and compliance and enforcement. Given the range of responsibilities entrusted to them, they are grossly understaffed and face resource crunch in many States.

Inadequate finance and low priority

In the States, environment is still low in the priority of the Governments. This is reflected in the negligible share of plan budget being allocated for environmental management. Many State Boards receive almost no financial support from the State Governments and are totally dependent on cess. Though environmental concerns are being given greater importance at the national level, commensurate investment is hardly evident. The total annual plan of the MoEF is currently of the order of Rs 2000 crores, which is about 0.25% of GoI's plan budget. The expenditure on environment in India is a very small fraction of the GDP, much below most developed and emerging economies. Currently, the percentage of GDP spent on environment in India is 0.012, whereas it is 1.0 in Japan, 0.4 in USA and 0.3 in Netherlands.

Deficiencies in implementation of schemes

The schemes implemented by the Ministry have suffered from weak monitoring mechanisms, time and cost overruns and sub-optimal utilisation of assets by the States/ Urban local bodies. Many of the schemes have allocations, which are too small to have any impact. This leads to thin spread of scarce resources and strain on the limited administrative capacity.

Challenges: Threats and Opportunities

Threats

The scale of the environmental challenge is set to increase in magnitude as well as complexity. The following are the major threats:

- Imperative of maintaining high economic growth
- Increasing Urbanisation, Population Growth and Industrialisation

- Unmet basic needs
- Life style changes
- Huge Biotic pressure

The foremost challenge is to ensure that environment is not degraded with rapid economic growth. There are huge unmet basic demands in terms of electricity, drinking water and sanitation. Urban population is rapidly growing. There will be corresponding increase in the levels of effluent and waste generation. These trends are bound to put enormous pressure on the natural resources and the environment.

Increased vehicular fleet and industrial growth is contributing to rising air pollution levels in the urban areas. The concentrations of SO₂, NO and SPM have reached critical levels in some of the cities, impacting human health and ecosystems. It will be a challenge to achieve the revised ambient air quality standards, which have been developed in keeping with the global best practices. Increasing population, urbanisation and growing demand of water for agriculture, industry, drinking water and hydroelectricity have severely impacted the water quality of rivers. CPCB has identified 150 polluted river stretches in the country based on analysis of water quality data over 2002 to 2008. Presently, there is a huge capacity deficit in the sewerage network and sewage treatment infrastructure. Against sewage generation of over 38000 million litres per day (MLD) in the Class-I and Class-II towns, treatment capacity of only about 12000 MLD exists.

The problem of solid waste management has also got exacerbated over the years, due to changing life styles, increasing consumerism, rapid urbanisation and economic growth. There is a critical deficiency in most cities in terms of waste collection, processing and disposal facilities. Management of plastic bags and PET bottles is a formidable challenge. Waste streams are becoming increasingly complex, requiring specialised treatment. According to recent estimates 6.23 million tonnes of hazardous industrial waste is being generated annually in the country against which treatment capacity is only about 35%. Health care facilities need to be equipped for segregation of bio medical waste and treatment and incineration of infectious components in dedicated facilities. There is a huge infrastructure deficit in this area, compounded by lack of

awareness and training. The electronic waste generation is growing exponentially projected to increase from 1.4 lakh tonnes in 2005 to about 8 lakh tonnes in 2012.

India with 2.4% of global area is home for 18% of the world population and 18% of the world's livestock, which poses tremendous pressure on its biodiversity including forests and the wildlife, leading to man-animal conflict and consequent adverse effect on the carrying capacity of the ecosystems. This pressure is set to increase in the years to come.

Opportunities

While the challenges are formidable, there are a number of positives, which provide the Ministry an opportunity to take forward the environmental agenda, building on the strengths and the experience of implementation accumulated over the last two and a half decades. The opportunities are mainly the following:

- Increased public awareness and civil society pressure
- Improved economic status
- Need to align with global standards and practices
- Strong technology base
- Optimum utilisation of Centres of Excellence and other attached institutions

The concept of environmental protection and resource conservation has been an integral part of our tradition and way of life. However, changing lifestyles, increased urbanisation, industrialisation, infrastructure development and population growth have put enormous pressure on environment. At the same time, there is heightened public awareness about the perils of unbridled industrial expansion and increased public pressure to strike a harmonious balance between rapid economic growth and protection of environment. This provides an excellent opportunity to the Government to mainstream sustainability concerns in the development projects and improve compliance with environmental laws and standards.

Environmental governance is increasingly acquiring a global dimension. There are around 20 major MEAs in the areas of Biodiversity, Climate Change, Persistent Organic Pollutants, Hazardous wastes and chemicals, Ozone depleting substances, Wildlife, etc. The conventional approach of the developing countries has been to link compliance with the provision of financial and technical assistance. With the country's evolving economic and geopolitical profile, this approach can now be nuanced and we can look upon these MEAs as an opportunity to adopt global environmental standards.

India has strong scientific base in the form of CSIR institutions, world class academic and scientific institutions (IITs, ISRO, IISc, etc.) and growing R&D facilities in the private sector and large pool of scientists. This potential is yet to be fully harnessed. There is an opportunity to promote synergy between these capabilities and the requirements of developing green technologies.

The Ministry has a network of attached organisations, subordinate offices, autonomous institutions and centres of excellence etc. These are reservoirs of domain knowledge, linked with community and operational flexibility but have not been put to optimal use. There is huge opportunity of leveraging these strengths to promote the environmental agenda.

SWOT Analysis – A Snapshot

<u>Strengths</u>	<u>Weakness</u>
<ul style="list-style-type: none"> • A robust regulatory framework • Institutional Structure • Mainstreaming of Sustainability Concerns • Creation of Conservation and Pollution Abatement Infrastructure • Successful implementation in certain areas • Increased Environmental Awareness, civil society involvement and transparency 	<ul style="list-style-type: none"> • Inadequate enforcement and compliance • Inadequate institutional capacity • Inadequate Finance • Low priority at States and at Local level • Shortcomings in implementation of Plans

<u>Opportunities</u>	<u>Threats</u>
<ul style="list-style-type: none"> • Increased public awareness and civil society pressure • Improved economic status • Need to align with global standards and practices • Strong technology base • Optimum utilization of Centres of Excellence and other attached institutions 	<ul style="list-style-type: none"> • Imperative of maintaining high economic growth • Increasing Urbanization, Population Growth and Industrialization • Unmet Basic needs • Life style changes • Huge Biotic pressure

2D Lessons from the SWOT and the way forward

Core Learning Agenda for Environmental Concerns

- * Guidelines for support to environmental research for environmental management and natural resources. Strengthening of scientific manpower and arranging multi disciplinary infrastructural facilities for environmental research.
- * Sensitizing schools/colleges/universities, professional and management institutions, corporate sectors about environmental issues. Organising National Environmental Awareness Campaign and National Green Corps.
- * Preparing State Level Action Plans for climate change(SLAPCC) consistent with the strategy outlined in the National Action Plan on Climate Change(NAPCC). Reduce carbon sustainable by 20 to 25 percent by 2020 in comparison to the 2005 level as a objective of NAPCC.
- * Ensure implementation of hazardous wastes (Management Handling and Transboundary Movement) Rules, 2008 and Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989(amended 2000)
- * Ensure timeline for environmental clearances.
- * Consultation with stakeholders while formulating standards as well as policy, involvement in decision making apart from formulation of Legislations, Regulations and Guidelines for control on pollution.
- * Use of international best practices and their adoption on pollution. Indigenized wherever possible depending on the techno-economic feasibility while formulating standards. Promotions of GIS/GPS is also being emphasized.

- * Implementation and monitoring of standards, setting up of network of water, air and noise monitoring stations, identification of critically polluted areas and pollutants, preparation of plans, programmes, scientific inventorization, studies and projects.
- * Capacity building programmes which inter-alia includes national and international exposure. Technical strengthening like new parameters for National Ambient Air Quality Standards and lidar based forecasting of air quality.
- * Enhancement of delivery services like computerization, fixing timelines, digitalization of data, promotion of ITC etc.
- * Conservation activities for rivers on a river basin approach. Prioritizing and implementing action for the tackling pollution in major towns of Ganga. Adoption of new sewage treatment technology.

The Core Learning Agenda for Forestry and Wildlife Concerns

- * Consultation with public/academicians/NGOs/ Practitioners for improvement of ongoing activities on afforestation. Capacity building through scientific/extension institutions.
- * Strengthening of integrated development of wildlife habitats and providing adequate funds and training to forest personnel.
- * Consultation with Gram Sabha for constituting the buffer or peripheral area of tiger reserves which aims at promoting coexistence between wildlife and human activity.
- * Global Tiger Initiative of World Bank for capacity building to improve the field delivery through exchange of good practices.
- * Participation in the International Conventions. Attempts to internalize the international best practices in the ongoing programmes.
- * Ensure timeline for forestry clearances.

Section-3

Strategy

A. The Current Strategy

A.1 Policies

The broad vision of the Ministry with sustainable development as the core underlying theme is enshrined in a number of policy documents, both sector specific and overarching, brought out from time to time. These policy statements provide the conceptual and ideological underpinnings for the regulatory and institutional framework and the plans and schemes of the Ministry. The important policy statements are:

- National Forest Policy, 1988 - This policy aims to increase the area under forests in the country to 33 % through massive afforestation programs and protection of the existing forest cover, regulating management of forest based industries and building on the symbiotic relationship between forests and the forest dwellers.
- National Conservation Strategy and Policy Statement on Environment and Development, 1992 - This policy document laid down a comprehensive agenda of action for protection and conservation of environment by promoting efficient use of water, interception, diversion and treatment of sewage, promoting clean fuels and clean technologies, setting up a chain of national parks, wildlife sanctuaries and biosphere reserves etc.
- Policy Statement on Abatement of Pollution, 1992 - This policy statement focused on implementation, the polluters pay principle, critically polluted areas, assisting small industries to set up common treatment and disposal facilities, etc.
- National Environment Policy, 2006 - This is the comprehensive policy statement intended to mainstream environmental concerns in all developmental activities. It outlines the strategies for addressing key environmental challenges facing in the country. The major principles of the policy include the right to development and equity along with environmental standard setting and a precautionary approach.

A.2 Regulatory framework

Over the years, a number of laws have been enacted to help achieve the objectives of the Ministry. The regulatory framework consists of following major Acts:

- The Indian Forest Act, 1927
- The Wildlife (Protection) Act, 1972
- The Water Prevention and Control of Pollution Act, 1974
- The Water (Prevention and Control of Pollution) Cess Act, 1977
- The Forest (Conservation) Act, 1980
- The Air (Prevention and Control of Pollution) Act, 1981
- The Environment (Protection), Act, 1986
- The Public Liability Insurance Act, 1991
- The Biological Diversity Act, 2002
- The National Green Tribunal Act, 2010

A.3 Thematic Schemes of the Ministry

The Ministry is implementing a number of schemes in the forestry, wildlife conservation, pollution abatement, capacity building, training and awareness areas. A large number of ongoing Plan schemes was clubbed/ merged into broad thematic schemes, following the rationalization exercise carried out by the Ministry for the 11th Five Year Plan. The following thematic schemes, with each scheme having further components/programmes, are currently being implemented by the Ministry:

Environment & Ecology

1. Environmental monitoring and governance
2. Pollution Abatement
3. Research & Development for Conservation Development
4. Conservation of Natural Resources and Ecosystems
5. Environment Information, Education & Awareness
6. Environmental Management in Heritage, Pilgrimage and Tourist

Centres Including Taj Protection

7. International Co-operation Activities
8. National Coastal Management Programme
9. National River Conservation Plan (NRCP)

Forestry & Wildlife

10. Grants in aid to F & WL institutions
11. Capacity building in forestry sector
12. Gregarious Flowering of Muli (*Melacanna baccifera*) Bamboos
13. Intensification of Forest Management
14. Strengthening Forestry Division
15. Strengthening of Wildlife Division
16. Integrated development of Wildlife Habitats
17. Project Tiger
18. Project Elephant
19. National Afforestation & Eco-development Board (NAEB)
20. National Afforestation Programme
21. Social Forestry with communities (Panchayat Van Yojana)
22. Animal Welfare

A.4 Implementation Structure

The implementing structure consists of the Ministry of Environment and Forests, which is organised into a number of Divisions, supported by a number of institutions with varying degrees of autonomy such as Directorates, Boards, Subordinate Offices, Autonomous Institutions and Public Sector Undertakings. The major divisions in the Ministry are:

- (a) Environment
- (b) Forests & Wildlife;
- (c) National Afforestation and Eco-Development Board;
- (d) National River Conservation Directorate.

There are six regional offices of the Ministry which are entrusted with the responsibility of monitoring and evaluation of on-going forestry development projects and schemes and follow up of implementation of conditions and safeguards laid down while granting environmental clearance of projects.

The major supporting institutions include:

- Central Pollution Control Board
- Botanical Survey of India
- Zoological Survey of India,
- Indira Gandhi National Forest Academy, Dehradun
- Forest Survey of India
- Indian Council for Forestry Research and Education
- Indian Institute of Forest Management
- Wildlife Institute of India
- National Biodiversity Authority
- National Tiger Conservation Authority
- National Ganga River Basin Authority
- National Green Tribunal

For the attainment of its objectives, the Ministry also provides aid to various autonomous institutions/statutory bodies/centres of excellence/registered societies.

B. The New Strategy

B.1 Purpose of the new strategy

Looking forward, the Ministry needs to revisit its strategy to be able to effectively anticipate and address the growing and increasingly complex environmental challenge. The new strategy should leverage the robust policy and regulatory framework based on technical and scientific information and build on the institutional mechanism created so far. A lot of valuable

experience in implementation has been gained, which can be used to avoid the deficiencies experienced so far and achieve improved outcomes. Increased public awareness, improved economic health and a sound scientific and technological base provide opportunities for reinventing the existing strategy.

The new strategy will have to be proactive rather than only reactive and must be consistent with the national policy paradigm and the country's overall objective of high economic growth. Thus the purpose of the new strategy will be to ensure environmental conservation without compromising on the goal of rapid economic growth. The environmental architecture will accordingly have to be strengthened and redesigned. It can also provide an impetus to growth by promoting green technologies.

Global environmental governance is also gaining increasing importance. Environment being indivisible entity, international cooperation to achieve the objectives of a clean air, water, safety against toxic effects of chemicals, wastes and other hazardous substances is an absolute *sin qua non*. The new strategy must, therefore, be consistent with the evolving international dynamic.

B.2 Policy options, suggested solutions and approaches

From the discussion in the preceding sections, regarding the vision, the challenges and strengths, weaknesses and opportunities; the strategy for the future should focus on the following areas:

(i). Improving Compliance and Enforcement

Rapid industrialization and infrastructure development in the last decade coupled with population growth and urbanization have exerted tremendous pressures on the environment. The existing regulatory institutions at the Central and State levels need to be strengthened to meet the rising environmental challenges. The mechanism of criminal prosecution of environmental offenders also needs to be applied more effectively.

The existing environmental institutions need to be strengthened. The Central Pollution Control Board and many State Pollution Control Boards do not have adequate technical, or financial capacity to discharge the wide expanse of their regulatory functions and ensure compliance with environmental laws. Many industries therefore tend to pollute as there is little credible deterrence to non-compliance. There is a strong case to strengthen the capacities of the CPCB and the SPCBs, in terms of strengthening of their technical manpower, upgradation of labs and creation of necessary infrastructure. This may be undertaken through Plan funds as well as the proposed World Bank assistance. In addition a comprehensive database management system, that shall be geospatially enabled and shall be linked to a comprehensive ambient environmental monitoring network, has to be developed.

A possible solution that is under discussion is to create a National Level Authority, namely, National Environment Protection Authority (NEPA) now rechristened as National Environment Assessment and Monitoring Authority (NEAMA). It is proposed to be a professional multidisciplinary autonomous body in the realm of environmental impact assessment, coastal zone management and the monitoring of clearance conditions. The Report of the Committee on Monitoring of Environmental/Costal Regulation Zone (CRZ) clearances is also under examination.

(ii). Economic Instruments and Enforcement of Polluter Pays Principle

An amendment to the Environment (Protection) Act of 1986 is proposed to take care of certain other pressing needs in environmental management, in line with global best practise. The penalties provided under the Act for contravention of its provisions are proposed to be hiked upwards. In addition, a civil administrative adjudication system is envisaged to ensure fast-tracking of the imposition of salutary or appropriate penalties on environmental offenders. The section of the Act related to issue of directions needs to have an express provision of furnishing of suitable bank guarantees for specific performance and for restoration of the damage environment.

Industrial self-monitoring, reporting and verification process needs to be refined and appropriate provisions are needed in the body of the Environment Protection Act itself. Disclosure statements need to be put in the public domain to ensure oversight by the civil society and its appropriate linkage with the regulatory regime. It is also imperative that an enabling provision be made in the Act for regulatory authorities to levy and collect fees for specific services. This would go a long way in making these bodies financially autonomous and thus, more effective.

(iii). Ensuring effective and speedy environmental justice

There is an increase in environmental litigation due to heightened awareness and emerging environmental challenges along with rapid economic and infrastructural growth that has resulted in pressures on the environment. Earlier there were no dedicated courts for environmental cases. A mechanism has now been set up in the form of a specialised National Green Tribunal (NGT) for effective and expeditious disposal of such cases. It is provided that in addition to the principal place of sitting, there shall be four additional places of sitting so as to facilitate access to the justice. The NGT has original jurisdiction under seven environmental statutes to settle disputes. The Tribunal has also been empowered to award relief and compensation related to death or injury to persons or damage to property or environment on the principles of no fault liability. It also has appellate powers. The NGT provides for imprisonment or fine up to 10 crore rupees for individuals and 25 crore for companies for non compliance to its orders. An application for relief may be made even by any representative, organisation in the field of environment, Government, Central Pollution Control Board or State Pollution Control Board besides the affected person.

(iv). Strengthening Infrastructure for Environment and Forest Clearance

Concerns about environmental degradation and depletion of natural resources induced by human activities started coming to the fore in the West during the late Seventies. “*Silent Spring*”, a book by Rachel Carson, a marine biologist, evocatively captured these concerns and took social awareness about environment to a new level. These concerns led to the concept of taking into

consideration the possible environmental consequences of a proposed project, based on sound information and systematic identification and evaluation of the impacts. Thus the Environmental Impact Assessment (EIA) was born.

The foundation of EIA in India was laid in 1976-77 when the Planning Commission asked DST to examine river-valley projects from environmental angle. This was subsequently extended to cover all projects, which required approval of the Public Investment Board. The first EIA process in India was carried out in the early 1980s on the silent river valley hydroelectric project. It was assessed that the project had the potential to cause significant damage to the biodiversity and forest ecosystem of the silent valley. The project was withdrawn and Silent Valley was declared a national park. This was the starting of EIA regime in India.

However, these were administrative decisions, and lacked legal back up. On 27 January 1994, Environmental Clearance for setting up new projects was made mandatory. The EIA Notification, issued by MoEF under E(P) Act, specified the category of projects covered, fixed a time schedule for the whole process, and also stipulated post clearance monitoring. By an amendment in 1997, public hearing was made a mandatory part of EIA procedure.

Certain activities permissible under the Coastal Regulation Zone/Environmental Protection Zone Notifications, 2011 also require similar clearance. Besides, all projects located in critically polluted areas or within a radius of 15 kilometers of the boundary of reserved forests and ecologically sensitive areas have to obtain environmental clearance from the Central Government, irrespective of their categorization. In addition, forestry clearance is required under Forest (Conservation) Act 1980, if a project entails diversion of forest land.

This clearance regime is now well established. It has helped proactively check environmental degradation and arrest indiscriminate diversion of forest areas. A range of direct and indirect benefits have been realised, viz. early withdrawal of environmentally unsound proposals, 'greening' of project designs, planning, policy and institutional reforms and increased public awareness.

Sometimes there is clearly a trade off between economic development and checking environmental degradation, between exploitation of natural resources and conservation. However, this trade off is not intractable and can be resolved, striking the right balance between economic development and environment, by making the project proponents amenable to regulations, through additional costs and use of superior technology. In the case of mining, for example, the experience in advance economies demonstrates that modern mining techniques and regulatory obligations can ensure that the environment is restored to its original pristine state or even better.

The re-engineered EIA Notification of September 2006 sought to address important concerns on Environment approvals and clearances. The objective of the new Notification was to formulate a transparent, decentralized and efficient regulatory mechanism and reduce the time required for the entire EC process. A beginning towards decentralization was also made by delegating powers to the State Governments for a certain category of less polluting.

With increasing GDP growth and new challenges, the present institutional infrastructure in the Ministry, however, is somewhat inadequate and could impact the compliance and monitoring of the new notifications' objectives, and its full Environmental benefits. The new notifications have brought in more number of projects within the purview of the appraisal process. While the number and complexity of the projects being processed for environmental CRZ/EPZ clearance has increased manifold, the capacity and resources available with MoEF and its agencies to manage them have remained stagnant.

Therefore, there is a need to strengthened infrastructure for better management of environmental and forest clearance systems.

(v). Decentralization

One of the fundamental issues with the environmental management in the country today is its over centralisation. States in India, even some of the bigger districts, are larger than many countries. The EIA process is substantially decentralised in several countries including USA, UK

and Australia. In UK, EIA is conducted by local planning authorities. In Australia, each State has its own EIA process for major projects. Only projects of national environmental significance, which are defined in the Environment Protection and Biodiversity Conservation (EPBC) Act, are considered at the commonwealth level.

The 2006 EIA notification was a good first attempt at decentralisation. However, it is perceived to be a modest beginning. However, any further decentralisation would need to be based on significant capacity improvement at the state level. The decentralisation efforts do reduce the burden on the Central Government which can focus on high value projects or projects with significant adverse potential. This can also infuse a greater sense of responsibility among the State Governments and the Central Government can then be able to focus attention on monitoring the compliance of EC conditions, which needs strengthening.

(vi). Cumulative Impact Assessment

Of late, the limitations of project-level EIA are being realized internationally. Project EIAs react to development proposals rather than anticipate them, so they cannot steer development towards environmentally “robust” areas or away from environmentally sensitive sites. Project EIAs do not adequately consider the cumulative impacts caused by several projects or even by one project’s subcomponents or ancillary developments. The new trend is to address environmental issues earlier in planning and policy making processes. This could be done through cumulative impact assessment.

(vii). Post EC Monitoring

The Regional Offices of MoEF are presently engaged in the monitoring of environmental clearances. These Regional Offices have capacity constraints in terms of manpower and infrastructure. There is a need to strengthen for effective monitoring of environmental clearances.

(viii). National missions

a. Mission Clean Ganga

Pollution load on rivers has increased over the years due to rapid urbanisation and industrialization. Several measures have been initiated by the Government under the National Ganga River Basin Authority (NGRBA) for holistic conservation of the river Ganga. The Authority has decided that under Mission Clean Ganga it will be ensured that by 2020 no untreated municipal sewage and industrial effluents flow into Ganga. A River Basin Management Plan for Ganga is being prepared by a consortium of seven IITs with the objective of taking comprehensive measures to restore the ecological health of the river Ganga.

b. National Mission for remediation of legacy polluted sites

The development objective of World Bank assisted Project on “Capacity Building for Industrial Pollution Management” is to remediate ten highly polluted sites two in Andhra Pradesh and Eight in West Bengal on pilot basis, to develop a National Programme for Rehabilitation of Polluted Sites (NPRPS) as well as to build human and technical capacity in selected Pollution Control Boards. The estimated cost of the project, to be implemented for a period of five years, is USD 75.39 million.

The main outcome of the project is development of a policy, institutional and methodological framework for the establishment of a National Programme for Rehabilitation of Polluted Sites. This programme will be implemented as a National Mission and will undertake a comprehensive approach to remediation of legacy polluted sites all over the country.

(ix). Clean Air and Water and Waste Management

Besides improving compliance and enforcement, the vision of clean air and water will require creation of adequate pollution monitoring and abatement infrastructure. It is proposed to set up a national ambient noise monitoring network in addition to strengthening of the existing

air and water networks. Continuous online air and water quality monitoring systems both for ambient as well as source emission/effluents are proposed.

There is a huge gap between the industrial effluents being generated, particularly in the Small Scale Sector, and the existing CETP capacities. It is envisaged that substantial effluents treatment capacities shall be created under the revised CETP Scheme, introducing tertiary treatment technologies and mechanisms like SPVs.

Presently there is sewage treatment capacity deficit of the order of two thirds of sewage generation. The Ministry may work together with Ministry of Urban Development to prepare a time bound plan for creating adequate sewerage and treatment infrastructure.

Waste generation in the country is increasing due to changing life styles and increasing consumerism, rapid urbanisation and economic growth. The rising level of wastes, without efficient collection, processing and disposal is creating an environmental threat, which is impacting ecosystem and human health. This has created a formidable challenge for implementation of the rules pertaining to various waste streams. Presently about 6.23 million tonnes of industrial hazardous waste is created annually. 38,000 MLD of municipal sewage is generated per day against which treatment capacity of one-third exists. Electronic waste generation is growing exponentially and is expected to increase from 1.42 lakh MT in 2005, to 8.0 lakh MT by 2012.

There is need to strengthen capacity of CPCB, SPCBs and urban local bodies for better solid waste management. There is a need of enforcing compliance of these rules which is hampered by poor capacity of SPCBs and Urban Local Bodies and absence of adequate infrastructure.

(x). Chemical Safety

The Ministry of Environment and Forests is the nodal Ministry for handling chemical accidents. Chemical Industry in India is growing rapidly due to industrial and economic growth

and the changing industrial profile. Many of the chemicals used by these industries are toxic, highly reactive, flammable and explosive in nature. Besides, development in technology has increased the complexity of the processes. It is necessary to ensure safe handling of these hazardous chemicals at all stages i.e. manufacture, storage, processing, transportation and use, especially in the Major Accident Hazard Units such as Oil Refineries, large Fuel and Chemical Storage sites etc.

The regulatory framework in this area consists of MSIHC and the CA (EPPR) Rules. A web based Emergency Response System has also been developed. However, compliance is weak as there is inadequate capacity in the country and there is no dedicated institution/ agency specialising in industrial safety and Risk Management, which could undertake capacity building, research, consultancy and advocacy activities. The Crisis Management System is hampered by absence of dedicated manpower in the Ministry and the manner in which systems for safety preparedness such as off-site plans, mock drills, safety audits, etc. are being implemented by the States.

There is thus need to significantly strengthen capacity at various levels in the country to improve the preparedness to prevent chemical accidents and meet the situations arising out of such accidents. It is proposed to set up a specialised National level institute be set up to undertake capacity building, research, consultancy and advocacy activities to support the Central and State Governments in the field of Chemical (Industrial) Disaster Management.

(xi). Strategy on Climate Change and promoting Sustainable Development

International environmental governance for Climate Change is becoming increasingly important, particularly in view of its implications for issues relating to equity and sustainable development. The existing regime for enforcing Climate Change responsibilities envisaged under Kyoto Protocol is going to be influenced by the latest decisions under UNFCCC. Implementation of the relevant policies and actions involve several Ministries such as Agriculture, Power, New and Renewable Energy, Water, Commerce & Industry, Petroleum & Natural Gas and Finance.

The present institutional mechanism for handling these rapidly increasing responsibilities is clearly inadequate and needs to be significantly strengthened.

The Ministry is tasked with the responsibility of coordinating and overseeing the implementation of the eight National Missions representing a multi-pronged, long term and integrated approach. The Government has announced its intentions to follow a path of low carbon sustainable development. In view of the need to strengthen the existing capacities in the Ministry, it is proposed to set up an institutional structure in the form of a strengthened climate change division dedicated, in particular to undertake continuous policy research through relevant scientific and academic institutions, liaison with industry and scientific bodies, scientific research into climatic change assessment, management and monitoring of national emissions and spearheading India's negotiation on climate change in international bodies. The Climate Change Division will be staffed with adequate scientific and supporting manpower with a view to enable it to continuously review and assess India's position on climate change in consultation with other Ministries and stakeholders. This Division will also be responsible for coordinating the implementation of the National Action Plan on Climate Change (NAPCC) including other domestic policies relating to low carbon sustainable growth in accordance with agreed national strategy.

A National Centre for Climate Change Research and Actions may also be set up to provide analytical and research support to the Ministry in this area. The Centre will undertake research in climate science and support work of the Ministry in policy formulation and negotiations. The Centre will nodalise the Indian Network on Climate Change Assessment set up by the Ministry and will operate the national inventory management system as a part of India's domestic and international initiatives. Preparation of India's NATCOM on a rigorous and scientific basis will be a part of its mandate.

Divisional Strategies with Sub-Activities

In the light of above analysis of the current and future strategies, various divisions of the Ministry have developed their divisional strategies with sub activities. These are given in the table below.

Sl. No.	Share the Spectrum of potential strategies and chosen path	Develop a plan to engage the stakeholders	Plan to build knowledge & capabilities	Layout Key priorities
1.	Prepare database of important activities at Ministry and State levels including capacity Building of the staff for managing such activities	-Disseminate important information. Feedback from different stakeholders -Organize workshop, seminars & brainstorming sessions to interact and seek suggestions from various stakeholders.	-Awareness generation and capacity building through training by including in the work programme of Regional Centers of National Afforestation & Eco-Development Board. -Provision for institutional strengthening, in the Afforestation Programmes.	-Conducting NAEB Board meetings, SLSC and NLSC meetings to build consensus on various issues with all the stakeholders. -Feedback from evaluation mechanism of National Afforestation Programme and interactions by RCs with JFMCs.
2.	Analysis of information received from States/UTs and implementing agencies(SPCB/PCC) for the assessment of gap area with regard to generation of waste and treatment capacity and also assessment of areas where preparation of off-site emergency plans is required.	Involvement of Stakeholders to develop proposals (i) for creation of additional capacity for treatment and disposal of hazardous wastes and (ii) preparation of off-site emergency plans.	Training programmes and capacity building by organising workshops on a regular basis and also based on the demand from stakeholders	(i) Creation of additional capacity for treatment and disposal of hazardous and Biomedical wastes. (ii) Preparation of off-site emergency plans for districts which currently do not have such plans..
3.(i)	Conservation of rivers through adoption of a holistic conservation strategy with a river basin approach.	(i) National River Conservation Plan and National Ganga River Basin Authority (NGRBA), have suitable mechanisms for engaging all the stakeholders viz. State Govts. Project Implementing Agencies, and Experts	(i) Capacity building of officials of state implementing agencies, State Pollution Control Boards and ULBs through training programmes. Information on sewage treatment technologies is compiled and disseminated.	Involvement of States Govts/UTs to formulate prioritized action plan/proposals for pollution abatement in major pollution hotspots along the polluted stretches of rivers identified by the Central

(ii)	Prevention of pollution through various pollution abatement works including interception and diversion of sewage and its treatment through creation of sewage treatment plants, catchment area treatment, river front development etc.	in river conservation. (ii) Memoranda of Agreements(MoAs) signed by the MoEF with the State Governments and Urban Local Bodies concerned to ensure complete involvement and ownership by these important stakeholders.	(ii) Assistance is provided to Reform action plans of ULBs on a need based assessment.	Pollution Control Board. Directions to States/UTs to ensure Operation & Maintenance of the facilities created under the river/lake conservation programmes. MoAs are entered into with States and ULBs which provide sanction of schemes, contingent upon comprehensive plans
(iii)	Creation of sewage treatment capacity as a key milestone as municipal sewage is among the major sources of pollution in rivers.	(iii) Members from public and NGOs are included in the city level Monitoring Committees.	(iii) Sponsor of 2 year programme for Environment Management of Rivers and Lakes in IIT, Roorkee.	
(iv)	Preparation of Ganga River Basin Management Plan based on identify Projects, policy interventions and non-project investments.	(iv) Public consultations at the stage of project formulation.	(iv) Short term programmes on different components of conservation for officials of state implementing Agencies, State Pollution Control Boards etc.	
(v)	Conservation of lakes through treating the pollution leads in the lake catchment area, lake cleaning measures such as De-silting De-weeding, Bio-remediation catchment area treatment etc.	(v) NLCP guidelines requires involvement of all stakeholders including members of public in the process of formulation and implementation of conservation plans for lakes.		Including for O&M submitted by the ULB/implementing agency. Ensure Satisfactory implementation of key milestones requirement for fund releases under the projects.
4.	To identify priority areas of research	Broaden of participation namely	Strengthening/management of data-base in the areas of	Identifying priorities areas of

	among the identified thrust areas with a focus on action oriented, problem solving region specific research through thematic research Expert Groups.	research institutions, universities, voluntary bodies and non-governmental organisations(NGOs) involving all stakeholders.	research in environment with forward and backward linkages and tie up with the users on the principle of market approaches for long term financial sustainability.	research among the identified thrust areas with a focus on action oriented, problem solving region specific research through thematic research Expert.
5.	Protection and conservation of wildlife in India, which constitute 6.5% of the World's species.	Involving NGO, Civil Societies, Local people living in around Pas for Conservation and protection of endangered species including tiger and elephant.	<ul style="list-style-type: none"> Regular training to wildlife staff. 	Environmental clearances without Compromising wildlife conservation as per the provision of the Wildlife (Protection) Act, 1972.
	<ul style="list-style-type: none"> Conservation and protection of endangered species including tiger and elephant and their habitats by providing financial & technical assistances under the Centrally Sponsored Schemes, viz, 'Integrated Development of wildlife Habitats', 'Project Tiger' and 'Project Elephant'. Action Plan in Combating the wildlife related crimes including capacity building for scientific and professional investigation 	<ul style="list-style-type: none"> Conducting regular meetings with school children, village communities, research organization and other key stakeholders. 	<ul style="list-style-type: none"> Updating latest technology in tracking animals, census, and monitoring of protected areas habitat. 	<ul style="list-style-type: none"> Regular meeting of Standing Committee of National Board for Wildlife for forestry clearance in a time bound manner.

	<p>along with other measures through Wildlife Crime Control Bureau.</p> <ul style="list-style-type: none"> Financial assistance for development of Zoos in India including rehabilitation centre's and rescue centre's under Central Zoo Authority. 			
6.	<p>Collection and collation of information/data both at Centre and State level by the Ministry, CPCB/SPCBs for assessments of gaps, non-compliance in respect of pollution prevention and control. The assessments facilitate to identify the areas for standard formulations, setting up of common treatment facilities, setting up of monitoring stations including formulation of policy and rules.</p>	<p>Strength of an inbuilt mechanism to engage stakeholders in the formulation of policy, rules, standards, establishment of common treatment facilities including legislative process. Participation of stakeholder is elicited by placing the information/ document on web-sites, organizing workshops, seminars and brainstorming sessions.</p>	<p>Generation of information/data through need based research studies, monitoring programmes, inspections etc. by CPCB including SPCBs these information/data are being inventorised by the CPCB/SPCBs for preparation of reports/manuals/ News letters for creation of a database. Use of ICT is being promoted for database management to ensure quality and reliability. These information/data base form the basis for informed decision making and also these are disseminated to the stakeholders through training/capacity building programmes.</p> <p>Participation of NGOs and to provide financial assistance.</p> <p>Strengthening of CPCB and SPCBs by way of</p>	<p>To strengthen the environment government in respect of pollution prevention and control. They key areas are; (i) Strengthening of CPCB/ SPCBs, (ii) enhancing the common treatment facilities (iii) preparation of Action Plan for critically polluted areas (iv) strengthening the network of water and air quality monitoring stations (v) creation of data base (vi) creation of mass awareness and (vii) bringing transparency in the areas of pollution prevention and control activities.</p>

			financial and technical assistance on regular basis to meet the challenges in implementing plans/programmes and preventions & control of pollution in the country.	
7.	Implementation of National Strategy for transition to non-CFC MDIs and plan for phase-out of CFCs in the Manufacture of MDIs in India.	<ul style="list-style-type: none"> - Implementation of project by UNDP as lead agency with UNEP and Government of Italy as cooperating agencies. - Developing a Roadmap for HCFC phase-out which delineates long term vision and action plan for phasing out production and consumption of HCFCs. 	Awareness strategy to create awareness among the stakeholders.	<ul style="list-style-type: none"> - Preparation HCFC Phase-out Management Plan (HPMP) for Stage-I to achieve 2013 freeze and 10% reduction by 2015 of the baseline (average of 2009 and 2010 consumption and production respectively). - Implementation of awareness strategy for sensitization of stakeholders and public at large to phase-out production and consumption of HCFCs especially to meet the 2013 freeze and 10% reduction in 2015.
8.	<ul style="list-style-type: none"> - Publication/preparation of national communication as mandated by United Nations Framework Conservation on Climate Change(UNFCCC). -Monitoring, preparation and implementation of 	<ul style="list-style-type: none"> Formation of Indian Network for Climate Change Assessment and setting up of National Centre for Climate Change to help the process of extensive research and scientific work on climate science. Regular review and 	Institutionalization of INCCA undertake scientific and analytic work as a pro-active policy making role.	<ul style="list-style-type: none"> -Advancing domestic policy of adaptation and mitigation in accordance with NAPCC. -Defending India's interests in climate change negotiations. -Furthering climate science

	<p>national missions under NAPCC</p> <ul style="list-style-type: none"> -Launch of Indian Network of Climate Change Assessment -Setting up of a national Center for Climate Change. 	<p>implementation of National Missions through the Coordination Committee in MoEF.</p>		<p>capabilities for analysis and policy making.</p>
	<p>Implementation of sectoral mitigation measures, low carbon strategy developed by Planning Commission, mitigation/emission reduction policies and mechanisms for Technology and Finance established at global level.</p>	<p>Regular inter-ministerial consultations on climate change negotiating strategy through meetings of climate change negotiating group and its sub-groups on forestry and CDM.</p>		

Section-4

Linkage with RFD

Some of the proposed strategic initiatives are included in the Ministry's Result Framework Document (RFD). However, RFD is focussed more on the outcomes related to ongoing plan schemes and the quantitative targets under them. It is felt that the long term strategy should necessarily go beyond physical and financial targets and examine whether the existing regulatory and institutional frameworks are adequate to realise the Ministry's vision or new structures are needed. The RFD will be aligned as per strategic plan.

The RFD includes actions with respect to various conservation and pollution abatement schemes such as protection of forests, conservation of lakes and improving hazardous substances management. However, the targets are based on existing levels of allocation. The strategic plan proposes to effectively anticipate and address the growing and increasingly complex environmental challenges.

Section-5

Implementation Plan

The Strategy outlined in Section-3 consists broadly of strengthening the institutional set up and infrastructure for better management of environment, forests and wildlife.

a. Mobilizing the required resources

An important factor constraining environmental management in this country is that of inadequate resources. Currently, the percentage of GDP spent on environment in India is 0.012, whereas it is 1.0 in Japan, 0.4 in USA and 0.3 in Netherland. The Annual budget of MoEF at around Rs 2000 crore is less than 0.25% of the National Plan. The situation in the States and at the city level is even worse. There is a case for significant increase in the investment on protection and conservation of the environment.

The Strategic initiatives proposed will require substantial investments. The exact magnitude of resources required for implementing the strategy will be worked out in detail. However, it is certain that this will require significant increase in the budget provisions of the Ministry. It is, therefore, proposed that:

- The Ministry will engage in a dialogue with the planning commission, the Ministry of Finance and the State Governments to seek progressive enhancement of outlays on environment
- Financing from multilateral institutions may be pursued actively.

b. Coordination with other Central Ministries

Several other Ministries, notably the Ministry of Urban Development run major programmes, which have a direct impact on the objectives of MoEF. Under JNNURM and UIDSSMT, creation of urban infrastructure including sewerage network and sewage treatment plants is supported. Similarly, afforestation work can be taken up under the schemes of Ministry of Rural Development, such as, NREGS. There is thus, considerable potential for dovetailing of resources with the schemes of several Ministries and an attempt

could also be made for earmarking of resources under these Ministries for investment in environment.

C. Coordination within the Ministry

There is clear delineation of work among various divisions of the Ministry. Some of the strategic initiatives proposed may fall within the purview of more than one division. Therefore the implementation of strategy will be done by one or more divisions in a coordinated manner.

- i. Strengthening of CPCB/ SPCBs - Control of Pollution Division
- ii. Amendment to Environment Protection Act- Policy and Law Division
- iii. National Mission: Mission Clean Ganga- NRC Division
- iv. National Mission for remediation of legacy pollution sites- HSM Division
- v. Chemical Safety - Hazardous Substances Management Division
- vi. Green technology, climate change and MEAs - this will require specialization and a holistic policy formulation by the strengthened Climate Change Division.
- vii. Strengthening of infrastructure for environment (CP/HSM Division)
- viii. Forest clearance systems (FC Division).
- ix. NEAMA-Policy and Law Division.

Section-6

Required Resources

The Ministry is currently operating thematic schemes in 22 thematic areas. These schemes cover the main budgetary requirements for the Ministry. The names of the schemes and their outlays in the 11th Five Year Plan and the projected budget outlays (with 20% increase) for the 12th Five Year Plan (2012-13 to 2016-17) are given in the Table below:

Table
Scheme wise approved outlay for the 11th plan & projected outlay for the 12th plan

S. No.	Name of the scheme	11 th plan (Rs crores)	12 th plan (Rs crores)
	Environment & Ecology		
1	Environmental monitoring and governance	216.00	259.20
2	Pollution Abatement	235.00	282.00
3	Research & Development for Conservation & Development	250.00	300.00
4	Conservation of Natural Resources and Ecosystems	600.00	720.00
5	Environment Information, Education & Awareness	295.00	354.00
6	Environmental Management in Heritage, Pilgrimage and Tourist Centres Including Taj Protection	0.01	0.012
7	International Co-operation Activities	80.00	96.00
8	National Coastal Management Programme	10.00	12.00
9	National River Conservation Plan (NRCP)	2100.00	2520.00
	Total Environment & Ecology	3786.01	4543.212
	Forestry & Wildlife		
10	Grants in aid to F & WL institutions	450.00	540.00
11	Capacity building in forestry sector	110.00	132.00
12	Gregarious Flowering of Muli (<i>Melacanna baccifera</i>) Bamboos	37.00	44.40
13	Intensification of Forest Management	600.00	720.00
14	Strengthening Forestry Division	100.00	120.00
15	Strengthening of Wildlife Division	150.00	180.00
16	Integrated development of Wildlife Habitats	800.00	960.00
17	Project Tiger	615.00	738.00
18	Project Elephant	81.99	98.388
19	National Afforestation & Eco-development Board (NAEB)	250.00	300.00
20	National Afforestation Programme	2000.00	2400.00
21	Social Forestry with communities (Panchayat Van Yojana)	900.00	1080.00
22	Animal Welfare	120.00	144.00
	Total Forestry & Wildlife	6213.99	7456.788
	Grand Total Environment, Forests & Wildlife	10000.00	12000.00

There is need to provide allocation of adequate resources in those areas which have been focused in the new strategy of the Ministry of Environment and Forests.

Section-7

Review and Monitoring

Internal Monitoring and Review

The proposed strategic initiatives require a well established system of monitoring and review. Given the preoccupation of subject divisions with their regular work, this will require setting up of a separate monitoring cell.

It is proposed that one of the senior Additional Secretary level officers will be assigned the additional responsibility of assisting the Secretary in this work. He will be assisted by a small dedicated cell of staff from within the Ministry.