

INTERNATIONAL CO-OPERATION AND SUSTAINABLE DEVELOPMENT

The subject area is coordinated by the IC & SD Division of the Ministry for United Nations Environment Programme (UNEP), Nairobi; South Asia Cooperative Environment Programme (SACEP), Colombo and other related matters. It also handles bilateral issues and matters pertaining to multilateral bodies such as the Commission on Sustainable Development (CSD), Global Environment Facility (GEF) and the regional bodies like Economic & Social Commission for Asia & Pacific (ESCAP), South Asian Association for Regional Cooperation (SAARC), European Union (EU) and the India-Canada Environment Facility (ICEF).

In the area of sustainable development several activities have been taken up which include.

- Preparation of State of Environment (SoE) Report
- Formulation of Sustainable Development Indicators (SDI)
- Formation of National Strategies for Sustainable Development
- Global Public Goods, and
- Partnership for Sustainable Development.

The Ministry is also the nodal agency in the Government for various environment related multilateral conventions and protocols which include the Convention on Wetlands of International importance, especially as Waterfowl Habitat, Vienna Convention for the protection of the Ozone Layer, Montreal Protocol on Substances that deplete the Ozone Layer, Conventions on Biological Diversity, UN Framework Convention on Climate Change, Kyoto Protocol, the Basel Convention on Trans-boundary Movement of Hazardous Substances, Convention to Combat Desertification, Stockholm Convention on Persistent Organic Pollutants etc.

Environment related multilateral conventions and protocols etc. are being handled by the respective technical and scientific divisions in the Ministry. IC&SD Division plays a coordinating role in the matters relating to these Conventions.

Commission on Sustainable Development (CSD)

The United Nations Conference on Environment and Development (UNCED), held in Brazil in 1992 adopted Agenda 21 which is a blue print for a global plan of action for achieving sustainable development. The CSD was set up in 1993 for the purpose of review of progress of implementation of the Agenda 21.

Though the Ministry of External Affairs is the nodal ministry for the CSD matters, this Ministry provides technical support for implementation of Agenda 21.

The 12th Session of the CSD was held from 19th April to 30th April 2004 and considered the issues relating to water, sanitation and human settlement. India presented its National Report titled “Mitigating Poverty – Water, Sanitation and Human Settlements” in this Session of CSD.

United Nations Environment Programme (UNEP)

The United Nations Environment Programme (UNEP), established in 1972 with its headquarters at Nairobi, Kenya, works to encourage sustainable development through sound environmental practices everywhere. Its activities cover a wide range of issues, the promotion of environmental science and information,

to an early warning and emergency response capacity to deal with environmental disasters and emergencies.

UNEP's present priorities include:

- ❑ environmental information, assessment and research, including environmental emergency response capacity and strengthening of early warning and assessment functions,
- ❑ enhance coordination of environmental conventions and development of policy instruments,
- ❑ fresh water,
- ❑ technology transfer and industry, and
- ❑ support to Africa.

The 8th Special Session of Governing Council/ 5th Global Ministerial Environment Forum (GMEF) of UNEP, held from 29-31 March 2004 in Republic of Korea and organized by UNEP, was a very important milestone towards the CSD 12. The meeting was aimed at targets like approaches for Effective Capacity Building for integrated Policy Development and Implementation; Capacity Building for promoting the implementation of Multilateral Environment Agreements; Capacity Building for Integrated Policy Design and Implementation in Asia etc.

Global Environment Facility (GEF)

The Global Environment Facility (GEF) is a financial mechanism that provides grants and low interest loans to developing countries to help them carry out programmes to relieve pressures on global ecosystems. The GEF was created to fulfill a unique niche – that of providing financing for programmes and projects to achieve global environment benefits in the focal areas of Biodiversity, Climate Change, International Waters, Persistent Organic Pollutants (PoPs) and Land Degradation as it relates to these focal areas. The Facility supports international environment management and the transfer of environmentally benign technologies. It is a cooperative venture among national governments, the World Bank, the UNDP and the UNEP in the specific areas of concern. The Ministry is the operational nodal point for this facility in India. UNIDO, FAO and ADB are the other implementing agencies for GEF.

While 16 projects are under implementation under this, three have been completed. Eleven projects have been approved in principle under GEF and are in the preparatory phase.

A Global Environment Cell (GEC) with UNDP assistance has been set up in the Ministry with the objective of examining and providing technical and scientific inputs into the process of project formulation including those for GEF assistance.

The Ministry has formulated the National GEF Strategy which will facilitate diagnosis of various problems and to evolve an effective mechanism for planning, formulating, implementing, monitoring and coordination of GEF projects in the country. An Empowered Committee has also been set up for identification of GEF projects, formulation, implementation and monitoring of GEF activities in the country. The Committee meets quarterly to consider and approve GEF projects.

The Empowered Committee has considered and approved 13, projects during 2004 under GEF.

State of Environment (SoE) Report

The objective behind this scheme is to highlight the upstream and downstream linkages with environmental issues besides creating a baseline document. This would imply a sound data collection and management apparatus at the Central and State Government levels and logical follow-up of SoEs.

Nodal Host Institutions (NHIs) for carrying out the above exercise in different States and UTs as assigned to each NHI are:

- ❑ Development Alternatives, B-33/2, Institutional Area, Tara Crescent, New Mehrauli Road, New Delhi-16.
- ❑ Tata Energy Research Institute, Darbari Seth Block, Habitat Centre, New Delhi-3.
- ❑ Environment Protection, Training and Research Institute, 91/4, Gachibowli, Hyderabad-500 032.
- ❑ Administrative Staff college of India, Bella Vista, Hyderabad-500 082.

Some of the states for viz: Andhra Pradesh, Punjab, Union Territory of Chandhigarh have brought out their State of Environment Reports. The remaining States/UTs are also in the process of bringing out their respective draft Reports shortly.

South Asia Cooperative Environment Programme (SACEP)

The SACEP, set up in 1982 with headquarter in Colombo, deals with regional strategy for Environmental Management (Agenda 21 issues). Secretary (Environment & Forests) is the Nodal Focal Point for India. The SACEP holds its Governing Council meetings which concentrate on current regional issues as well as global concerns.

South Asian Association for Regional Cooperation (SAARC)

SAARC has seven countries of the region as members, viz, Nepal, India, Bangladesh, Bhutan, Pakistan, Maldives, Sri Lanka. So far, five Environment Ministers Conferences have been held under SAARC, which also has a Committee on Environment, Meteorology and Forest, for working out the detailed plan of action in these areas and implementing the same.

UNDP-GEF/SGP

UNDP-GEF/CCF, Small Grants Programme was launched in 1992 to support activities that demonstrate community based approaches. It has supported 90 projects in India in three phases so far at a total budget of Rs. 8.25 crores. The Centre for Environment Education is the identified National Host Institute (NHI) assisting the Ministry in execution of this programme.

Bilateral Cooperation

This Ministry has bilateral MoUs / Agreements with ten countries which are Austria, China, Germany, Iran, Israel, Russia, Tajikistan, Turkmenistan, USA & Vietnam. These MoUs / Agreements cover a wide array of areas which pertain to issues of environmental concern. In addition to formal bilateral agreement there are cooperative activities with a host of other countries which are:

- European Commission: The strategy of EC is their sectoral emphasis on Education and Health with environment linkages as they pertain to these two sectors. The Second meeting of the India-EC Joint Working Group on Environment was held on 13th January 2004 in Brussels. The meeting facilitated exchange of views on various environmental issues to be raised in multilateral forum, (viz WSSD, CSD), Biodiversity and Biosafety Protocol, Renewable Energy, Climate Change, Trade and Environment and common challenges faced by both the countries.
- Brazil & India have worked closely in all international for a dealing with environmental and economic issues. The Indo-Brazil Common Agenda for Environmental issues was signed by both the governments.

A meeting of the India-Brazil Common Agenda for Environment was held in January 2004 which discussed a range of international environment issues and the common interests and positions of both countries on various multilateral issues.

United States Environment Protection Agency (USEPA)

The Memorandum of Understanding (MoU) in the field of Environment signed between Ministry of Environment and Forests, Government of India and United States Environment protection Agency (USEPA) in January 2002 provides a framework for policy and technical cooperation between this Ministry and the USEPA on the basis of common concern for the Protection off environment as well as to pursue sustainable development. The activities covered under this MoU reflect adequately our environmental concerns – environmental governance, air and water quality management, management of toxic chemicals and hazardous wastes. Projects relate to areas such as environmental health, environmental management system, environmental risk assessment and risk management, public access to environmental information, public participation in environmental decision-making, environmental education, strengthening of the environmental law regime and implementation of international environmental agreements.

A meeting was held on 18th March 2004 with the visiting management team of USEPA which took stock of the ongoing activities under the aegis of the MoU in areas such as air quality management, water quality management, management of toxic chemicals and hazardous waste, environmental governance and environmental health.

India-Canada Environment Facility (ICEF)

The India-Canada Environment Facility (ICEF) is a joint initiative of the Government of India and the Government of Canada created by the signing of a Memorandum of Understanding (MoU) between the two Government on October 20, 1992 for the purpose of undertaking project related to the environment.

The funding is provided by the Canadian International Development Agency (CIDA) and it is managed jointly by representatives from both Governments. The primary focus of the ICEF is to enhance the capacity of Indian institutions and organizations to promote and deliver sustainable development programs addressing the environment.

The project is expected to end in March 2006 as a result of the new bilateral assistance guidelines of Ministry of Finance restricting financial assistance to six countries/agencies only.

Advisory Services in Environmental Management (ASEM)

This is an umbrella project under the aegis of Indo-German technical collaboration under which, all present and future projects being supported by the Government of German in the environment sector would fall. The project caters to five fields of activity viz. Eco-city, Eco-Industrial Estates, Eco-Industrial Parks for Electroplating Industries of Madurai, waste management, Sustainable Small Industry and Clean Development Mechanism. The initial funding is Rs. 6 crores (2001-2005), commitment for second phase (2005-2008) with additional funds of Euro 3 millions has been agreed by both the German and Indian side.

Canada India Institutional Strengthening Project

The Environmental Institutional Strengthening Project is a five year, \$ 5 million project of Canadian International Development Agency (CIDA) funded project. It is being implemented by Environment

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- India presented its national report entitled "Mitigating poverty – water, sanitation and human settlement" in the 12th Session of Commission on Sustainable Development (CSD), held on 19th – 30th April 2004.
- The Indo-Brazil Common Agenda for a dealing with environmental and economic issues was signed by both the Governments.
- India participated in the 23rd and 24th Sessions of GEF Council held in Washington D.C. from 19-20 May, 2004 and 17-19th November 2004 respectively as well as SAARC Technical Committee and Ministerial meeting on environment during 11-13 June, 2004 at Thimpu, Bhutan.
- India also participated in a Seminar on Performance Based Allocation Framework for GEF Resources during 27-28th September 2004 in Paris, France and Regional Preparatory Meeting for Ministerial Conference on Environment and Development at Bangkok during 29-30 November 2004.
- India participated in the International Seminar on 'Future Governance of UNEP" at Stockholm, Sweden from 22nd-23rd November, 2004.
- India participated in a Regional Workshop on "Integrated Capacity Development for MEA's (National Capacity Self Assessment) in South Asia at Colombo during 14th-16th February, 2005.
- India took part in Asian Regional Consolation of International Task Force on GPG's in Manila, Philippines on 18th February, 2005.
- The Governing Council of UNEP/GMEF met on 21st-25th February, 2005 at Nairobi in which India participated.
- India represented in the "Inter-governmental Preparatory Meeting on CSD XIII" which was held at New York from 28th Feb.- 4th March, 2005.
- India also participated in the "Ministerial Conference on Environment and Development (MCED)" at Seoul, Korea during 24th-29th March, 2005.

Canada in partnership with Ministry of Environment and Forests (2000-2005) in partnership with Environment Canada. The purpose of the project is to strengthen the institutional capacity of Ministry of Environment and Forests to address environmental issues of global concern and national priority for India and promote environmentally sound development. Under the project work has been undertaken in the field of air emissions monitoring and control, hazardous waste products, bio-technology, capacity analysis of customs labs to deal with hazardous substances and preparation of a National Chemicals Management Profile, etc.

Training Abroad

A data bank of officers of various State Governments, SPCBs, Environment Departments, etc. deputed on international training is maintained by IC&SD Division of the Ministry.

Climate Change

Climate Change is one of the most important global environmental problems. According to Third Assessment Report (TAR) of the Intergovernmental Panel on Climate Change (IPCC), it is estimated that the Earth's surface temperature has increased by $0.6 \pm 0.2^\circ \text{C}$ over the twentieth century. The global mean sea level has been rising at the rate of 1 to 2 mm annually during the 20th century. It projects that globally averaged surface temperature would rise by 1.4 to 5.8°C and the global mean sea level may rise by 0.09 to 0.88 m during 1990-2100.

India is a party to the United Nations Framework Convention on Climate Change (UNFCCC). The UNFCCC was adopted in 1992 and entered into force on March 21st, 1994. There are presently 193 Country Parties and the EU Party to the Convention. The objective of the Convention is to stabilize the concentration of greenhouse gases in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system within a time frame sufficient to allow the ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.

The Convention enjoins upon the Parties to protect the climate system on the basis of equity and in accordance with their "common but differentiated responsibilities" and respective capabilities. In accordance with the provisions of the Convention, all Parties, are required to communicate to the Conference of Parties of the Convention to communicate following elements of information:

- ❑ A national inventory of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, to the extent its capacities permit, using comparable methodologies to be promoted and agreed upon by the Conference of the Parties;
- ❑ A general description of steps taken or envisaged by India to implement the Convention; and
- ❑ Any other information that India considers relevant to the achievement of the objective of the Convention and suitable for inclusion in its communication, including, if feasible, material relevant for calculations of global emission trends.

During the year the Ministry hosted the 22nd Plenary Session of Inter-governmental Panel on Climate Change (IPCC) in New Delhi from 8 -11 November, 2004. Delegates from nearly all the member countries participated in this Conference. The IPCC was established by the World Meteorological Organization (WMO) and United Nations Environment Programme (UNEP) in 1988 to understand the risk of human induced climate change, its potential impacts and options for adaptation and mitigation. The IPCC is an important international body having influence on negotiations in United Nations Framework Convention on Climate Change (UNFCCC) and various other international forums.

India is proactive in early implementation of Clean Development Mechanism (CDM) projects. Developed countries that are Party to the Kyoto Protocol have legally binding targets to reduce greenhouse gas emissions. It is expected that a substantial part of these emissions reduction targets shall be met by purchasing Certified Emission Reductions (CERs) from developing countries including India. Implementation of CDM projects

would help in attracting foreign investment as well as access to more efficient technologies. Industry Associations, NGOs and foreign entities, organized a number of seminars/ workshops during the year with the goal of raising awareness and developing of good quality CDM projects.

Host country approval from Sustainable Development point of view has been accorded to 44 projects till December 2004. These include projects in biomass based cogeneration, energy efficiency, MSW, renewables such as wind, small hydro projects etc. Many more projects are expected to be submitted to the National CDM Authority for approval in the coming year with Kyoto Protocol coming into force in February 2005.

The Indian delegation for the 10th Conference of Parties (COP) of UNFCCC held at Buenos Aires in December 2004 was led by the Hon'ble Minister of Environment & Forests. During the COP, India had been elected to the Executive Board of Clean Development Mechanism. The Executive Board is the highest decision making authority under the UNFCCC for CDM related matters. Decisions were also adopted on the Buenos Aires Programme of work on Adaptation & Response measure, Technology Transfer, Land use, Land use Change and Forestry (LULUCF), Financial Mechanism, Capacity Building, Education & Awareness etc. India also succeeded that the proposed Seminar being organized outside the ambit of UNFCCC in May 2005 shall not open any negotiations for new commitments. Hon'ble Minister of Environment & Forests (MEF) participated as a Panelist in the high level discussions on "The UNFCCC after ten years: accomplishments and future challenges". The transfer of financial resources and environmentally friendly technologies in public domain in developing countries were highlighted in the interventions made by MEF.

The Ministry of Environment and Forests is the Nodal Ministry for the subject of Climate Change. Towards fulfillment of its obligation, the Ministry submitted India's Initial National Communication to UNFCCC Secretariat on June 22, 2004 within the stipulated time. A broad participatory approach was adopted for the preparation of India's Initial National Communication involving Union Ministries/ departments, R&D institutions, Universities and Non Governmental Organizations. As many as 131 research teams participated in the countrywide exercise. Highest standards of scientific rigour was maintained in conducting this exercise and the research outputs contained in the National Communication have been extensively peer reviewed. It is expected that scientific standards accomplished in India's Initial National Communication will establish a global standard for other Parties including Development Country Parties to follow in their own National Communications.

Some Highlights : In 1994, 1228,540 Gg (Giga grams) of Carbon dioxide equivalent of anthropogenic greenhouse gases were emitted from India resulting in a per capita emissions of about 1.3 tons. Details of gas by gas greenhouse gas emissions from India in 1994 is given in figure 80 and by sectors in Carbon dioxide equivalent in figure 81. The carbon dioxide emissions were contributed by activities in the energy sector, industrial process, and land use, land use change and forestry.

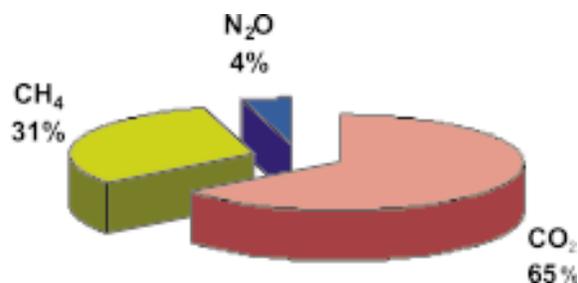


Fig.80 - Relative emissions of green house gases

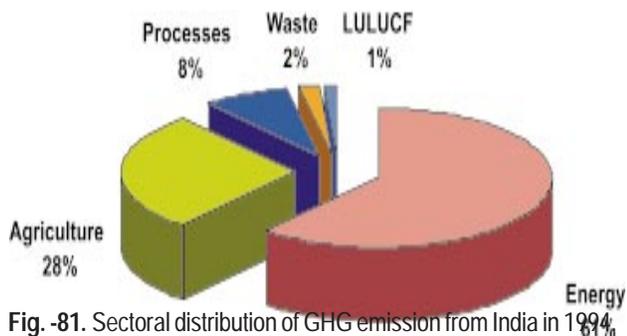


Fig. -81. Sectoral distribution of GHG emission from India in 1994 (LULUCF-Land use, landuse change and Forestry)

A preliminary assessment of vulnerability and adaptation needs due to climate change in key sectors such as water, agriculture, forestry, ecosystems, coastal zones, health, energy and infrastructure has been undertaken. The projected climate change scenarios indicate increase in and variable trend of both rainfall and temperature into 21st century. It is projected that quantity of surface run off due to climate change would reduce and vary across the river basins as well as sub basins. The initial analysis has revealed that climate change scenario may have adverse effects in terms of severity of droughts and

intensity of floods in various parts of the country. Forest biomass in India seem to be highly vulnerable to the projected change in climate. Coastal areas are also vulnerable to climate variability in varying degrees.

Besides, an exclusive website on India's Initial National Communication (www.natcomindia.org) has been created for dissemination of information related to climate change issues. A data center, which is the repository of all data generated in the preparation of the communication, has also been established. Further 27 workshops on various work elements of the Communication were organized during the project period 2001 to 2004. Two books on climate change issues four brochures and seven posters on activities pursued during the project were also brought out.

The Consultative Group on Climate Change under the Chairmanship of Secretary (E&F) met at a fortnightly interval for coordinating the national position on climate change fora. This interministerial group consists of in addition to the representatives of concerned Ministries and the Planning Commission, renowned experts and national institutions working on various climate changes related issues.

The Ministry of Environment and Forests (MoEF), Government of India and the UK Department of Environment, Food and Rural Affairs (DEFRA) have completed a three-year joint research programme on impacts of climate change in India. In this collaborative effort, the climate model of Hadley Center for Climate Prediction and Research, UK has provided the basis of development of climate change scenarios in the programme. The project has been built on India's existing expertise to assess the sectoral impacts of climate change and reduce the uncertainties in current climate change projection models. Eight premier institutions in India have participated in the assessment of impacts and vulnerability in key sector such as water, agriculture, industry, energy and infrastructure, forests and human health. The various components of the study include : Development of Climate Change Scenarios for India, Indian Institute of Tropical Meteorology, Pune; Impact of Climate Change on Forests in India, Indian Institute of Science, Bangalore; Impact of Climate Change on Human Health, National Physical Laboratory, New Delhi; Impact of Climate Change on Coastal Zones: Extreme sea level variability along the coast of India, National Institute of Oceanography, Goa; Impact of Climate Change on Water Resources, Indian Institute of Tropical meteorology, Pune; Impact of Climate Change on Industries, Energy and Transport, Indian Institute of Management, Ahmedabad; Impacts of Climate Change on Agriculture, Indian Agricultural Research Institute, New Delhi; and Socio-economics scenarios, The Energy Research Institute (TERI), New Delhi. The various components of the study constitute an attempt to estimate national vulnerability to project climate change capturing India's high regional and sector variability in levels of social and economic development.

The Indian projections, under future scenarios of increased greenhouse gas (GHG) concentrations, indicate marked increase in both rainfall and temperature into the 21st century, particularly becoming conspicuous after the 2040's. Increase in GHG concentrations may lead to overall increase in the rainy day intensity by 1-4 mm/day except for small areas in northwest India where the rainfall intensities decrease by 1 mm/day.

Ozone Layer Protection



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- During the 10th Conference Of Parties (COP) of United Nations Framework Convention on Climate Change (UNFCCC), held at Buenos Aires, Argentina, India has been elected to the Executive Board of Clean Development Mechanism (CDM).
- The Ministry and the UK Department of Environment, Food and Rural Affairs (DEFRA) have completed a three-year Joint Research Programme on impacts of climate change in India. The project has been built on India's existing expertise to assess the sectoral impacts of climate change and reduce the uncertainties in current climate change projection model.

Ozone, a tri-atomic molecule has three oxygen atoms instead of the normal two oxygen, It is formed naturally in the upper levels of the Earth's atmosphere by high-energy ultraviolet radiation from the Sun. The radiation breaks down oxygen molecules, releasing free atoms, some of which bond with other oxygen molecules to form ozone. About 90 percent of all ozone formed in this way lies between 15 and 55 kilometers above the Earth's surface – the part of the atmosphere called the stratosphere.

The Stratospheric Ozone Layer absorbs all the harmful Ultra Violet (UV) radiation emanating from the Sun. It protects plant and animal life from UV radiation. UV radiation has the potential to cause skin cancer, eye damage, suppress body's immune system, decrease crop yield, causes damage to forests and effects marine organisms. Global efforts to protect the Ozone Layer started in early seventies, led to the adoption of the Vienna Convention in 1985 and the Montreal Protocol, (1987) along with its four amendments. In India, provisions of the Montreal Protocol and its London Amendment came into effect from 17th September 1992. India also ratified the London Amendment (1990), the Copenhagen Amendment (1992), the Montreal Amendment (1997) and the Beijing Amendment on 3rd March, 2003.

India produces CFC-11, CFC-12, CFC-113, Halon-1211, HCFC-22 Halon-1301, Carbontetrachloride (CTC), methyl chloroform and methyl bromide. These Ozone Depleting Substance (ODS) are used in refrigeration and air conditioning, fire fighting, electronics, foams, aerosol fumigation applications.

A detailed India Country Programme for phase out of ODS was prepared in 1993 to ensure the phase out of ODS according to the national industrial development strategy, without undue burden to the consumers and the industry and for accessing the Protocol's Financial Mechanism in accordance with the requirements stipulated in the Montreal Protocol.

The Government of India has entrusted the work relating the ozone layer protection and implementation of the Montreal Protocol to the Ministry, which has set up the Ozone Cell as a national unit to look after and to tender necessary services to implement the Protocol and its Ozone Depleting Substances (ODS) phaseout programme in India.

The Ozone Depleting Substances (Regulation and Control) Rules, 2000 and subsequent amendments, provides a legal framework for ensuring compliance of the Montreal Protocol. It sets the deadline for phasing out of various ODS, besides regulating production, trade, import and export of ODS. The rules prohibit the use of CFCs in the manufacture of various products beyond 1.1.2003 except in Metered Dose Inhalers (MDIs) and for other medical purposes. Similarly, use of halons is prohibited after 1st January 2001 except for essential uses. Other ODS such as carbon tetrachloride and methyl chloroform and CFC for MDIs can be used upto 1st January, 2010. Further, the use of methyl bromide has been allowed upto 1st January 2015.

Since Hydro-chlorofluoro-carbons (HCFCs) are used as interim substitutes to replace CFCs, these are allowed to be used upto 1st January, 2005. The ODS Rules, 2000 and its amendments also provide the compulsory registration of ODS based products, importers, exporters, stockists, and sellers and the same provision is applicable to manufactures, importers, and exporters of compressors.

During this fiscal year, the Ozone Cell of the Ministry has taken up the following measures at national level for implementation of the Montreal Protocol on Substances that Deplete the Ozone Layer :

- ❑ The Ministry has notified Ozone Depleting Substances (Regulation and Control) Amendment Rules, 2004 on 16th August, 2004 vide S.O. 929 (E) to allow the CTC users to get themselves registered on or before 31st December, 2004 so as to facilitate phase out of 85% production and consumption of CTC for non feed stock purpose as per the control measures applicable under the Montreal Protocol. This notification also allows the enterprises for registration of HCFCs on or before 19th July, 2007.
- ❑ These enterprises are also required to maintain records and file periodic reports for monitoring production and use of ODS. Enterprises which have received financial assistance from Multilateral Fund for switchover to non-ODS technology have to register the date of completion of their projects and to declare that the equipment used for ODS has been destroyed. The rules also regulate production of ODS and the use of ODS for manufacturing product containing ODS as per the specified time schedule. The creation of

new capacity or expansion of capacity of manufacturing facilities of ODS has been prohibited. This has also been extended for manufacturing of ODS based equipment except equipment containing HCFCs.

- ❑ Halons are termed as miracle fire extinguisher chemicals. At the same time, these chemicals significantly contribute to ozone depletion with a range of three to ten Ozone Depleting Potential (ODP). Given the importance of Halons for various strategic and critical uses which do not have comparable feasible alternatives available, India in cooperation with Government of Canada (Environment, Canada) and Government of Australia prepared National Halon Management and Banking Programme. According to the project milestones, the recovery and reclamation facilities were developed by the Centre for Fire, Explosive and Environment Safety (CFEES), DRDO, Ministry of Defence, Delhi. This facility known as Halon Bank presently located in specially built building by CFEES for this purpose. This Halon Banking facility was inaugurated by Hon'ble Union Minister on 31st August, 2004 at CFEES, Delhi.



Fig 82. Zonal level painting competition on the "International Ozone Day" at the RMNH, Bhopal

International Day for the Preservation of Ozone Layer was observed on 16th September, 2004 in New Delhi. The theme of this year's international day was "Save O₃ur Sky: Ozone Friendly Planet, Our Target". On this occasion for creating public awareness of the environmental effect of the emission of the controlled ODS that deplete the Ozone Layer Ozone Science, Cell organized competitions viz. Poster desing, Painting, Quiz on Ozone Science, Skit, Model making and slogan writing for the age group of 13-17 years children and prizes for winners were distributed by the Hon'ble Minister of States (E&F).

The Ozone Cell also brought out a publication "The State of Art Report : Implementation of Montreal Protocol in India" covering aspects of perspectives, results and proactive measures for protection of stratospheric ozone layer.

A training workshop for senior officials was organized to create awareness about monitoring of ODS trade in collaboration with National Academy for Customs, Excise and Narcotics (NACEN) in Faridabad. A workshop for Small Industries Service Institute (SISI) officials was organized on 20th November 2004 for providing training on implementation of Ozone Depleting Substance (Regulation and Control) Rules, 2000.

The Executive Committee of the Multilateral fund of the Montreal Protocol approved US \$ 22.2 million during 2003 for Implementation of 2003 Annual Programme of CFC production sector phase-out project, National CFC Phase out plan and CTC national phase-out plan. The Government of India has signed the project agreement for implementation of the national CTC phase-out plan. The Governments

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- The Ministry has notified Ozone Depleting Substances (Regulation & Control) Amendment Rules, 2004 on 16th August 2004. The notification allows the enterprises for registration of Hydrochlorofluoro-carbons (HCFCs) on or before 19th July 2007.
- International Day for the Preservation of Ozone Layer was observed on 16th September 2004 in New Delhi by organizing several activities in the subject-area.

of Germany, France and Japan as bilateral agencies have initiated activities for phasing out of CTC in consumption sector. The Government of Germany as lead agency together with UNDP, UNEP, UNIDO and Swiss Development Corporation have initiated activities for phasing out of CFC in refrigeration and air conditioning servicing sector. The UNEP in collaboration with (NACEN) has launched the training programme for customs and enforcement officials.

- ❑ Fiscal measures were taken up urgently to discourage use of ODS and encourage use of ODS substitutes. The Government grants customs and excise duty exemption on goods required for ODS phase out projects and new investments with non-ODS technologies. The Reserve Bank of India has issued directions to all financial institutions and commercial banks not to finance new establishments with ODS technology. Licensing system has been adopted to regulate import and export of ODS. Ban has also been imposed on trade of ODS with non parties.

India has phased out ODS used in sectors like aerosol, fire extinguishers, domestic refrigerators, commercial refrigerators, Mobile Air Conditioners (MAC) and polyurethane foam manufacturing. The manufacturing activity in these sectors is now being carried out using alternative/non-ODS agents. Thus, for example, in the Aerosol sector the use of CFC-11/12 has been replaced by de-stenched Liquid Petroleum Gas (LPG), in place of CFC-11. HCFC-141b and water are used in manufacture of polyurethane foam. In the refrigeration sector use of CFC-12 has been replaced by Hydrofluorocarbon-134a (HFC-134a) and the hydrocarbons. For foam insulation in domestic refrigerators both cyclopentane and HCFC-141b are used. The central air conditioning system (Chillers) have now started using HCFC-123 as an alternative. Fire extinguisher manufacturers have changed over to the use of carbon dioxide or ABC powder. In larger installations, water sprinklers and water mist generators are used, entrepreneurs are now using Trichloroethylene (TCE). The use of Methylchloroform and CFC-113 in precision cleaning has been replaced by de-ionised water (di-water) aided by ultrasonics, detergents or co-solvents. Process Agent applications of CTC have been replaced by Ethylene di-Chloride (EDC) and Monochloro benzene (MCB) etc.

Environmental Management Capacity Building Technical Assistance Project (Credit No. 2930-IN)

The Ministry has implemented a World Bank aided Environmental Management Capacity Building Technical Assistance Project (Credit No. 2930-IN) with the overall development objective of enhancing the Government's environmental management capacity to ensure effective implementation of environmental priorities through support in the broad areas of policy, standards, law, monitoring and enforcement compliance with the ultimate aim of sustainable development of the country.

The project was started in September, 1997 and closed on 30th June, 2004. The Implementation Completion Report (ICR) prepared on completion of the report was presented to the World Bank Management by the stipulated deadline of 31st December, 2004. The overall performance of the project has been rated satisfactory by International Development Association (IDA) Supervision Mission in the ICR. The achievements made under the project are as follows:

Environmental Research : A revised Environmental Research Management Plan (ERMP) has been prepared for implementation based on identified priorities/thrust areas. Overseas training imparted to 19 persons in R&D Management and 120 scientists drawn from various institutions were also given local training for handling research. Software has been developed for computerized management of research projects. The RE Division has been renovated through procurement of equipment and other infrastructure facilities created for storage and retrieval of information on research projects and internet access to environmental data. Preparation of State-of-Art Reports in 24 critical areas were initiated and will be funded by the Ministry from its own budget. Rejection rate of proposals has reduced to 80% from 85% and final decision on proposals is now being communicated within 7-8 months as compared to previously longer time of 1-2 years.

Environmental Information System (ENVIS): The Environmental Information System (ENVIS) has been strengthened by setting up 85 ENVIS centres in premier institutions, universities, government departments and NGOs in specific subject areas and 70 Nodes have already developed websites on subject areas assigned to them. The nodes have been categorized under seven groups for sub-networking. Workshops and local training programmes have been conducted on ENVIS. Overseas training was also imparted to seven persons. Indian State level basic environmental information database has been developed with online GIS interface.

Environmental Economics (MSE): The application of economic principles and tools to environmental management in India has been strengthened covering issues such as priority setting, cost-benefit analysis of alternative policies for pollution control, resource management and biodiversity conservation. Several textbooks and monographs were published on Environmental Economics. Under various fellowships/Ph.D. Scholars workshops/faculty upgradation/training programmes, a large number of 1520 persons have been benefited. Apart from building the capacity of 22 institutions on environmental economics to sustain them on long-term basis, a total of 61 projects were also funded and 51 Executive Summary disseminated. An Environmental Economic Website has been created and the new building for Centre of Excellence on Environmental Economics was created.

Environmental Impact Assessment : The environmental clearance process and compliance therewith has been improved by revising the existing procedures and practices of environmental clearance in India. A National Guidance Manual on EIA practice with six support manuals on select developmental projects (petrochemicals, pesticides, bulk-drugs and pharmaceuticals, port & harbour, thermal power & hydroelectric) and a national level Environmental Data Centre for providing validated and certified information for preparation of EIA have been developed. A website has been created for online dissemination of information on environmental clearance process.

Environmental Education : Based on comprehensive evaluation of environmental education in the school textbooks, a plan was finalized for infusion of environmental concepts in school curricula. Environmental Education in School System (EESS) has been strengthened and implemented in 15 States at 6th, 7th and 8th standards of 100 schools of each State involving 'greening' of textbooks of Science, Social Studies and Languages by adding environmental concepts and information important to the State. Preparation of textbooks and other related manuals/educational material required intensive capacity building of the personnel involved. A total of 50 Masters trainers per state were targeted to be trained who further trained 1600 teachers.

Media (CSE): The capacity of the media was also built in understanding and reporting on environmental issues by conducting courses/workshops/conferences for journalists and editors benefiting 178 media persons.

Environmental Law (NLSIU): The legal capacity of government and non-government organizations, industrial and other professional individuals was broadened and deepened by participatory training exercise in environmental law. Apart from different publications brought out on environmental law, a number of seminars, workshops and training programmes were organized to build capacity in environmental law and the beneficiaries are industrial managers (329), financial institutions (35), local self governments (829), lawyers / judges (771), NGOs (769), law teachers (655), enforcers (617) and others (3714). A number of case studies (23 nos.) have also been undertaken under the project. A one year post-graduate diploma in environmental law has also been launched.

Mining Sector (CME & CMRI): In the mining sector national capacity for environmental project planning, implementation and monitoring has been strengthened. A number of (18 nos.) regulatory institutions/support institutions have been strengthened in the planning and design of environmentally benign mining projects. The existing laws/standards/policies have been reviewed and recommendations are in the process of being implemented. Overseas training to 40 persons has been imparted to enhance Indian expertise in planning, design and implementation of environmentally benign design and the monitoring compliance of policies, standards and environmental management plans in the non-coal sector Environmental Database Management System has been developed and designed which has been made an integral part of the national Database Management System under the main EMCB-EIA component. The demo-projects have provided a way of participatory resolving environmental problems with external expertise and self-help of the mine operators to demonstrate

adoption of best practices in Mining Sector with actual implementation of specific mitigation measures such as reclamation and regeneration of the ecology etc. The two demo projects are (1) Dump stabilization vis-à-vis control of erosion, leachets and water pollution from iron ore mines of Goa at Bicholim and (2) Landuse management thereby erosion and water pollution control in a Limestone mine of Sirmour, H.P. at Bagandhar.

Development of Standards (CPCB) : The standards reviewed for development and notification by the Ministry for compliance by the industry when finalized are – national emission standards for pesticides industry, national emission standards for petrochemical plants, emission and effluent standards for oil refineries, emission and effluent standards for basic organic chemical manufacturing industry, control technologies for total dissolved solids (TDS) and control technologies for Volatile Organic Compounds (VOCs) in industrial emissions. Local trainings (111 staff) and four overseas trainings (33 staff) were conducted on the effluent and emission standards reviewed. Gas chromatograph with mass spectroscope has been installed and infrastructural facilities have been created/upgraded.

Zoning Atlas (CPCB): Capacity in CPCB/SPCBs has been built in environmental planning and mapping, measures for environmental protection and sustainable development through proper land use planning and management have also been recommended. Publication of Environmental Atlas of India and for other major cities district-wise Zoning Atlas for siting of industries (123 districts), mapping of environmentally sensitive zones and industrial sites (18 States), industrial estate planning (22 sites), Environmental Management Plans (Agra, Kanpur, Bhubaneswar, Chennai and Indore) and EMP for Mining/Tourism/Fragile areas are some of the important activities undertaken under the component. A Human Resource Development Program for State Pollution Control Boards and other target groups has been developed. In the various training/awareness programmes a total of 2824 participants benefited.

Ambient Air Quality Monitoring (CPCB): On air pollution monitoring, overseas (13 nos.) and several local training programmes (700 staff) were conducted. Some equipments were also purchased under this component.

Integrated Coastal and Marine Area Management (DOD): The Department of Ocean Development built capacity in Integrated Coastal and Marine Area Management to ensure sustainable utilization of coastal and marine resources and prevention of degradation of marine environment through integration of activities prevalent in the land, coastal and marine areas. Under this component information system using Geographical Information System (GIS) for 11 critical habitats has been developed which is very useful to analyse the causes of degradation and to take conservation measures. Sites were selected for waste load allocation to demonstrate this new concept at Tapi Estuary (Gujarat), Ennore Creek (Chennai) and Hooghly estuary (West Bengal) to determine assimilation capacity of selected pollutants. EIA guidelines have been developed for Ports and Harbours, tourism related activities in the coastal marine areas and for waste disposal from domestic. A model ICMAM Plan for Chennai has been prepared by the Project Directorate in association with Tamil Nadu State Government and Indian Institute of Technology, Chennai. The element of local and foreign trainings as compared to other components was limited under this component.

Institutional Strengthening (GDFE): A number of departments/organizations/institutions have been strengthened in four thrust area-improving the compliance and monitoring, developing cleaner production plan, providing cleaner production assessment and environment impact assessment. Cleaner production concept in a group of 12 small and medium scale industries in chemical sector has been demonstrated. Dust containment techniques have been implemented in nine stone crusher units in the State to reduce concentration of suspended particulate matters. A total of 36 CP clinics were conducted in States in the sectors of chemical, pharmaceuticals, dye and dye intermediate, textile processing, dairy, dying and printing units, ceramics and refractories for creating CP awareness and demand. A total of 63 Environmental Indicators have been identified for industrial pollution, urbanization, coastal zone, forestry and water and reports prepared. Overseas training programme for 13 persons drawn from various organizations was arranged on cleaner production. A new course has been added in the environmental engineering degree course as a result of this component.

State Environment Action Programme (GEC): A brief State Environment Report, a synthesis document on State Environment Action Programme (SEAP), eight sectoral reports on land, water, energy, industrial pollution, wetlands etc. and online database for Gujarat have been developed as a part of SEAP component. A GIS centre for environmental management data has also been developed.

NGO Environment Action Fund (GEC): Under this component 46 projects were funded to 33 NGOs which aimed at mitigation of environmental problems and develop models for replicating them at a large scale. The projects addressed various issues like land, water, soil and moisture conservation, salinity, joint forest management, waste management, biodiversity conservation, river pollution, industrial pollution, ground water quality, indoor air pollution etc.

Residual activities of IPP Project: After closure of the Industrial Pollution Prevention (IPP) Project on 30th November, 2002, its residual activities were folded into the EMCBTA Project with effect from 1st December, 2002. A total of 12,504 industries and 5,391 HCEs have been geo-referenced in the 25 districts of Andhra Pradesh for optimum routing of solid waste, siting of common ETPs and transport of biomedical waste generated. Workshop was arranged to simplify work procedures to improve efficiency and transparency in the working of SPCBs. Karnataka State Pollution Control Board (KSPCB) collected spatial information and other environmental features of 1600 major and medium industries of Bangalore urban and rural areas for geo-referencing to achieve efficient utilization of GIS developed for the Board. Refurbishment of HQ building has been completed by KSPCB. For development of optimization model by Administrative Staff College of India (ASCI), study has been completed by ASCI which will be helpful to SPCBs for optimum planning and utilization of resources to make them self-sufficient. CPCB completed procurement of part equipment which resulted in improved analytical capabilities leading to enhanced performance. The procurement of equipment by Gujarat Pollution Control Board (GPCB) resulted in strengthening various branches of head office to improve the Information Management System. The procurement of sampling vans by Rajasthan State Pollution Control Board (RSPCB) has improved their sampling and analytical activities and other items of equipment could not be purchased due to shortage of time. LGM is being upgraded by CPCB as a separate document for adoption by State Pollution Control Boards (SPCBs). The overseas training programmes for SPCB officials could not be completed due to very limited time available for their completion.

Externally Aided Projects

The Externally Aided Projects (EAP) Division deals with the approvals and monitoring of Forestry Projects being implemented in the States with assistance from external donors. At present eight Forestry Projects with an investment of about Rs.3000 crores are being implemented in seven States, the details of which are as follows:

Ongoing Externally Aided Forestry Projects

No.	Project	Implementing Agency	Aid Agency	Project Period	Cost (Rs. in Crores)
1.	Integrated Natural Resource Management and Poverty Reduction Project	Haryana	JBIC	2004-05 to 2009-10	286
2.	Rajasthan Forestry and Biodiversity Project	Rajasthan	JBIC	2003-04 to 2008-09	442
3.	Andhra Pradesh Community Forestry Project	Andhra Pradesh	World Bank	2002-03 to 2006-07	653
4.	Himachal Pradesh Forest Sector Reforms Project	Himachal Pradesh	DFID	2002-03 to 2006-07	55
5.	Punjab Afforestation Project-II	Punjab	JBIC	2002-03 to 2006-07	264
6.	Indo-German Changar Eco-development Project	Himachal Pradesh	GTZ	1999-2000 to 2004-05	30
7.	Eastern Karnataka Afforestation Project	Karnataka	JBIC	1997-98 to 2004-05	722.489
8.	Tamil Nadu Afforestation Project	Tamil Nadu	JBIC	1997-98 to 2004-05	547.72

The forestry projects included for consideration under the Rolling Plan Financial Year 2005 for JBIC are

- ❑ Orissa Forest Sector Development Project
- ❑ Gujarat Forestry Development Project
- ❑ Kerala Watershed Development Project

In addition there are 13 forestry project in the pipeline for posing to external donors for assistance.

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- Environmental Management Capacity Building Technical Assistance Project (EMCBTAP) sponsored by World Bank in various sub-components, has come to an end on 30th June, 2004.
- Eight forestry projects with an investment of about Rs. 3000 crores are implemented in seven States of the country under External Aided Projects (EAP)