

# ENVIRO NEWS

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ENVIRO NEWS





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Dr. S. P. Sharma  
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## Asian Brown Cloud

The Asian Brown Cloud is a layer of air pollution that covers a part of South Asia namely, the northern Indian Ocean, India and Pakistan. Viewed from satellite photos the cloud appears as a giant brown stain hanging in the air over much of Asia and Indian Ocean every year between January and March, possibly also during earlier and later months. These clouds are more than three kilometres thick.

The pollution layer was observed during the Indian Ocean Experiment (INDOEX) intensive field observation in 1999 and described in the UNEP impact assessment study published in 2002. Scientist in India claimed that the Asian Brown Cloud is not something specific to Asia. Subsequently when the United Nations Environment Programme (UNEP) organised a follow-up international project, the subject of study was renamed the Atmospheric Brown Cloud with focus on Asia.

Atmospheric brown clouds are mostly the result of biomass burning and fossil fuel consumption. They consist of a mixture of light absorbing and light scattering aerosols and therefore contribute to atmospheric solar heating and surface cooling. The sum of the two climate forcing term the net aerosols forcing effect is thought to be negative and may have masked as much as the half of the global warming attributed to the recent rapid rise in green house gases. Although aerosol particles are generally associated with a global cooling effect, recent studies have shown that they can actually have a global warming effect in certain regions such as the Himalayas. Their layers stretching from Arabian Peninsula to China and western Pacific Ocean are aggravating the impacts of greenhouse induced climate change and have risked human health and food production.

The "Atmospheric brown clouds regional assessment report with focus on Asia" published in 2008 has highlighted regional concerns about the changes of rainfall patterns with the Asian monsoon, retreat of the Hindu Kush - Himalayan glaciers and snow packs and decrease of crop harvests. Elevated concentrations of surface ozone is likely to affect crop yields negatively. The impact is crop specific. The report also addressed the global concern of warming and concluded that the brown clouds have masked 20 - 80 percent of greenhouse gas forcing in the past century. The report suggested that the air pollution regulations can have large amplifying effects on global warming. □

## National Action Plan on Climate Change

Prime Minister Dr. Manmohan Singh released India's National Action Plan on Climate Change, in a brief ceremony in New Delhi on 30th June, 2008. The National Action Plan has been prepared under the guidance and direction of Prime Minister's Council on Climate Change. Members of Prime Minister's Council on Climate Change, senior members of the Union Cabinet, representatives of civil society and senior officials of Government, were present on the occasion.

Prime Minister made a brief speech on the occasion. He said that the release of the National Action Plan reflected the importance the government attaches to mobilizing our national energies to meet the challenge of climate change.

The National Action Plan focuses attention of eight priorities National Missions. These are:

1. Solar Energy
2. Enhanced Energy efficiency
3. Sustainable Habitat
4. Conserving Water
5. The Himalayan Ecosystem Sustaining
6. A "Green India"
7. Sustainable agriculture
8. Strategic Knowledge Platform for Climate change

The National Mission of Solar Energy, occupies a pre-eminent place, whose success, Prime Minister said, has the potential of transforming the face of India.

In his speech Prime Minister emphasized the global dimension of the challenge of climate change, which demands a global and cooperative effort on the basis of the principle of equity. India, he said, was ready to play its role as responsible member of the international community and to make its own contribution. He added that India believed that every citizen of this planet should have an equal share of the planetary atmospheric space and therefore, long term convergence of per capita GHG emissions was the only equitable basis for a global agreement to tackle climate change. In this context, the Prime Minister reaffirmed India's pledge that as it pursued sustainable development, its per capita GHG emissions would not exceed the per capita GHG emissions of developed countries, despite our developmental imperatives. Prime Minister clarified that the National Action Plan would evolve and change in the light of changing circumstances and therefore invited broader interaction with civil society as a means to further improve the various elements of the plan.

In his concluding remarks the Prime Minister recalled Mahatma Gandhi's sage advice: "The earth has enough resources to meet the needs of people, but will never have enough to serve their greed". □



***Hon'ble Prime Minister, Dr. Manmohan Singh releases the National Action Plan on Climate Change, in New Delhi on June 30, 2008***

# India's National Action Plan on Climate Change (Summary)

On June 30, 2008, Prime Minister Manmohan Singh released India's first National Action Plan on Climate Change (NAPCC) outlining existing and future policies and programs addressing climate mitigation and adaptation. The plan identifies eight core "national mission" running through 2017 and directs ministries to submit detailed implementation plans to the Prime Minister's Council on Climate Change by December 2008.

Emphasizing the overriding priority of maintaining the high economic growth to raise living standard, the plan "identifies measures that promote our development objectives while also yielding co-benefits for addressing climate change effectively." It says that these national measures would be more successful with assistance from developed countries and pledges that India's per capita green house gas emissions "will at no point exceed that of developed countries even as we pursue our development objectives."

## National Missions:

**National Solar Mission:** The NAPCC aims to promote development and use of solar energy for power generation and other uses with the ultimate objective of making solar competitive with fossil based energy based options. The plan includes:

- Specific goals for increasing use of solar thermal technologies in urban areas, industry, and commercial establishments;
- A goal of increasing production of photovoltaic to 1000 MW/year; and
- A goal of deploying at least 1000 MW of solar thermal power generation.
- Other objectives include the establishment of a solar research centre, increased international collaboration on technology development, strengthening of domestic manufacturing capacity, and increased government funding and international support.

**National Mission for Enhanced Energy Efficiency:** Current initiatives are expected to yield savings of 10,000 MW by 2012. Building on the Energy Conservation Act 2001, the plan recommends:

- Mandating specific energy consumption decrease in large energy-consuming industries, with a system for companies to trade energy-saving certificates;
- Energy incentives, including reduced taxes on energy-efficient appliances; and

- Financing for public - private partnership to reduce energy consumption through demand-side management programs in the municipal, buildings and agricultural sectors.

**National Mission on Sustainable Habitat:** To promote energy efficiency as a core component of urban planning, the plan calls for:

- Extending the existing Energy Conservation Building Code;
- A greater emphasis on urban waste management and recycling, including power production from waste;
- Strengthening the enforcement of automotive fuel economy standards and using pricing measures to encourage the purchase of efficient vehicles; and
- Incentives for the use of public transportation

**National Water Mission:** With water scarcity projected to worsen as a result of climate change, the plan sets a goal of a 20% improvement in water use efficiency through pricing and other measures.

**National Mission for Sustaining the Himalayas Ecosystem:** The plan aims to conserve biodiversity, forest cover, and other ecological values in the Himalayan region, where glaciers that are a major source of India's water supply are projected to recede as a result of global warming.

**National Mission for a "Green India":** Goals include the afforestation of six million hectares of degraded forest lands and expanding forest cover from 23% to 33% of India's territory.

**National Mission for Sustainable Agriculture:** The plan aims to support climate adaptation in agriculture through the development of climate-resilient crops, expansion of weather insurance mechanism and agriculture practices.

**National Mission on Strategic Knowledge for Climate Change:** To gain a better understanding on climate science, impacts and challenges, the plan envisions a new Climate Science Research Fund, improved climate modelling, and increased international collaboration. It also encourages private sector initiatives to develop adaptation and mitigation technologies through venture capital funds.

## Other Programs:

The NAPCC also describes other ongoing initiatives, including:

*(Contd. on page 6...)*

## International Day for the Preservation of the Ozone Layer, 2008

The UN General assembly on 23-01-1995 adopted a resolution 49/114 which proclaims 16<sup>th</sup> September as the International Day for the Preservation of the Ozone Layer, to commemorate the signing of the Montreal Protocol on the Substances that Deplete the Ozone Layer which was signed on 16<sup>th</sup> September, 1987.

India became a party to the Montreal Protocol in June 1992 and prepared the country programme in 1993 for phasing out the Ozone Depleting Substance. Further, various policy measures including National Awareness Campaign have also been adapted for smooth implementation of provisions of the Montreal Protocol. The theme for the International Day for the Preservation of Ozone Layer for the year 2008 was: **“Montreal Protocol – Global Partnership for Global Benefits”**.

In accordance with the UN resolution 49/114, the Ministry of Environment and Forests, through its Ozone Cell has been celebrating the International Day

for the Preservation of the Ozone Layer since 1995 at the national and state level.

The 14th International Day for the Preservation of the Ozone Layer, 2008 was celebrated by the Ozone Cell in Collaboration with Consultancy Development Centre (CDC) in New Delhi on 16th September, 2008. Hon'ble Minister of State for Environment, Shri Namo Narain Meena presided over the function and Dr. Ajay Mathur, DG, Bureau of Energy Efficiency, Ministry of Power delivered the key note address. On this occasion the 10<sup>th</sup> edition of the “Montreal Protocol: India's Success Story”, was released which apart from the evolution of Montreal Protocol gives the various initiatives taken by the Government of India to fulfil the obligation of the Montreal Protocol. In order to raise public awareness a poster was published and stickers were distributed to industry people, government officials and students. Prizes were distributed to the winners for a number of competitions held on 5th September, 2008 to mark this occasion. □



*Release of Poster on the occasion of International Ozone Day-2008 celebrated on 16th September, 2008 at FICCI Auditorium, New Delhi*



# Montreal Protocol – Global Partnership for Global Benefits

The Montreal Protocol has been hailed as perhaps the most successful international treaty to date and provides a message of hope for working cooperatively to solve major environmental problems.

The Protocol was the culmination of decades of research, which established that chemicals released in the atmosphere could damage the ozone layer. A depleted Ozone Layer in the stratosphere allows the Ultra Violets rays of the sun to reach the earth exposing mankind, flora and fauna to its harmful effects. According to the World Health Organisation each year between 2-3 million skin cancers are detected worldwide and upto 20% of these may be caused or enhanced by sun exposure.

Initially on the basis of very definite empirical findings, the Protocol enjoined upon all the signatory nations to completely phase out harmful chemicals such as Chlorofluorocarbons (CFCs), Halons, Carbontetrachloride (CTC), Methylchloroform in a given time schedule. Later, other studies have brought more chemicals such as Hydrochlorofluorocarbons (HCFCs) and Methyl bromide under the purview of the Protocol for phasing out within a given deadline.

India being a Party to the Vienna Convention and the Montreal Protocol, has been sharing the global concern for protecting the Ozone Layer and to phase out Ozone Depleting Substances (ODS) like CFC, Halons, CTC, Methyl chloroform, Methyl bromide and HCFC. These substances are used in aerosol products, refrigeration and air-conditioning products, foam blowing applications, fire fighting equipment, metal-cleaning applications, soil fumigation appliances, etc.

Since 1993 with the continuous efforts made by different stakeholders responsible for implementation of activities relating to the Montreal Protocol, 296 conversion projects

for phasing out CFC, Halon, CTC, consumption and production were approved by the Executive Committee of the Multilateral Fund (MLF).

As part of the accelerated phase-out of CFCs, India has completely phased out CFCs as on 1st August, 2008 ahead of the agreed phaseout schedule. However CFCs required for Metered Dose Inhalers (MDI) used by asthma and COPD patients will be available. Further, the most important and critical target of 85% reduction target of CTC production and consumption has also been achieved. Halons have already been phased out since 2003. The 19<sup>th</sup> Meeting of Parties (MOP) to the Montreal Protocol accelerated the phaseout of HCFCs from 2040 to 2030. A HCFC Phaseout Management Plan (HPMP) is being prepared to meet the schedule for HCFC phaseout.

Government of India has also taken a number of policy measures, both fiscal and regulatory, to encourage early adoption of new technologies by existing and new enterprises. Full exemption payment from of Customs and Excise duties is granted on capital goods required to implement ODS phase out projects funded by the MLF and this benefits is extended for projects and new-establishments using non-ODS technologies. The Ozone Depleting Substances (Regulation and Control) Rules, 2000 regulating ODS production, consumption and trade have also been put in place. These Rules are being enforced under the Environment (Protection) Act, 1986 with effect from 19th July, 2000. Five amendments have been made in 2001, 2003, 2004, 2005 and 2007 to the Rules thereafter.

India has been bestowed the honor of receiving the Montreal Protocol Best Implementers Award, which was given on 16th September 2007 at Montreal, Canada to mark the 20th Anniversary of the Montreal Protocol. □

## India's National Action Plan... (... Continued from page 4)

- **Power Generation:** The government is mandating the retirement of inefficient coal fired power plants and supporting the research and development of IGCC and superficial technologies.
- **Renewable Energy:** Under the Electricity Act 2003 and the National Tariff Policy 2006, the central and the state electricity regulatory commissions must purchase a certain percentage of grid based power from renewable sources.
- **Energy Efficiency:** Under the Energy Conservation Act 2001, large energy- consuming Industries are required

to undertake energy audits and an energy labeling program for appliances has been introduced.

## Implementation

Ministry with lead responsibility for each of the missions are directed to develop objectives, implementation strategies, timelines, and monitoring and evaluation criteria, to be submitted to Prime Minister's Council on Climate Change. The Council will also be responsible for periodically reviewing and reporting on each mission's progress. To be able to quantify the progress, appropriate indicators and methodologies will be developed to assess both avoided emissions and adaptation benefits. □

# Botanic Gardens and Centres of *Ex-situ* Conservation

The Botanic Gardens (BG) and other plant conservation Centres act as Centres for rescue, recovery and rehabilitation of Rare, Endangered and Threatened (RET) plant species and Endemic species to the region and other valuable plant genetic resources. The Botanic Gardens play important role in education and as a Centre of Training in areas such as horticulture, gardening, *ex situ* conservation and environmental awareness. It is therefore essential that a Network of Botanic Gardens is established and strengthened at national, regional and international levels for plant conservation activities.

## Initiatives by Union Government

In order to facilitate and improve infrastructural condition of Botanic Gardens in the country, a scheme was initiated by the Union Ministry of Environment and Forests, Government of India in 1991-92 to promote *ex situ* conservation and propagation of RET and endemic plants through a network of BGs and Centres of *ex situ* conservation. Financial assistance on 100% grant basis is provided on both furthering research, and promoting awareness and education pertaining to Rare, Endangered and Threatened (RET), and Endemic (E) flora. Under the scheme, it is envisaged to have a network of BGs all over the country. The network would cover approximately 1/3rd districts of the country by the end of XI Five Year Plan. It may be mentioned that there are estimated over 1800 BGs and arboreta located in about 148 countries and they together maintain over 4 million living plants belonging to more than 80,000 species of vascular plants.

Under the scheme, one-time financial assistance is provided to organizations maintaining botanic gardens for strengthening their infrastructural facilities to facilitate conservation and propagation of rare, endangered threatened and endemic plant species of the region. Assistance is also given for development of botanic sections in the popular gardens developed by local bodies or state government's departments or any other organization of repute having reasonable knowledge of the flora, means to maintain them and to disseminate information and inculcate care and conservation habits including multiplication, RET and E plants.

## Objectives

- i. *Ex situ* conservation and multiplication;
- ii. Establishment of seed banks, arboreta and mist propagation facilities.
- iii. Promotion of education and public awareness in respect of above said plants; and reintroduce said plants in natural habitats in collaboration with State Forest Departments on project basis.

## Main Criteria and Terms & Conditions

- i. Normally existing gardens are eligible for support. Proposal for new gardens shall be considered if they meet the eligibility criteria. Preference shall be given to BGs / Centres of conservation from uncovered and under covered regions/sub-regions.
- ii. The proposal should focus on minimum of 10 to 15 RET and E species of the region concerned. The list should be provided/authenticated by BSI. Out of RET and E species, minimum 20 saplings of tree species, 30 saplings of each shrub species including lichens and 50 saplings of each herbaceous species/climbers to be maintained in the garden.
- iii. The organizations funded under the scheme should also tie up with the users of the said plant material of the species conserved by them for specific purposes. There is a need to link up *ex situ* conservation with *in situ* transfer by developing an arrangement with the State Forest Departments so that the logical chain is completed.
- iv. Seeds of live materials of RET & E species conserved by the organizations shall be sent for maintenance and storage in the regional stations of BSI or NBPGR.
- v. The organization may clearly state/mention as to how the garden will sustain its maintenance and other activities once the funding of the Ministry stops after the project period.

## Submission of Proposal

The proposal may be formulated in accordance to the guidelines and Proforma prescribed by the Ministry and may be forwarded through a regional organization listed in Annexure-II and the same may be addressed to Dr. G.V. Subhramanyam, Advisor or Dr.R.K. Rai, Director, Ministry of Environment and Forests, Parvawaran Bhavan, C.G.O Complex, Lodi Road, New Delhi -110003.

The detailed guidelines and Proforma may be obtained from website of the Ministry [www.envfor.nic.in](http://www.envfor.nic.in) or from above officials.

## Lead Gardens

Such gardens, which provide the necessary expertise for replication at regional or local levels, could be termed as 'Lead gardens' or models that must be followed. Globally, these important 'Lead gardens' together should serve the present day needs of conservation and education vis-à-vis the obligations under the CBD and the the Global Strategy for Plant Conservation (GSPC) as well as in context of the present WTO regime and the country's national Environmental Policy, 2006.

The Lead Gardens are therefore, required to fulfil certain requirements of the national conservation programmes through following functions:

- i. Help conserve natural vegetation specially RET and E species through replicating/maintaining natural ecosystems/woodlands, and monitor their survival over time;
- ii. Undertake botanical research resulting in excellent referral system for plants, both dried ( for long-term maintenance/ study in herbaria) and live condition (for monitoring/study in experimental plots, woodlands/arboreta), with documentation of the natural resources of the country/ regime;
- iii. Carry out conservation studies with modern tools/ technologies such as molecular characterization/DNA markers, etc;
- iv. Carry out rehabilitation/recovery programmes for endangered species;
- v. Serve as centres of training, with expertise in a focused area of subject specialization, including horticulture;
- vi. Building up *in situ* as well as *ex situ* information on the RET species and its habitat;
- vii. Compile information on the area of occurrence, area of occupancy, number and size of populations, spatial distribution of populations, identification of important associates such as pollinators and dispersers, reproductive and breeding systems, population trends in relation to habitat changes and pattern of disturbance, etc;
- viii. Develop relevant R & D expertise and capabilities in undertaking modern conservation and gene banking techniques including in-vitro tissue banks, DNA and cryobanks; and
- ix. Promote environmental awareness/nature conservation through well designed education programmes.

A number of BGs in the country covering different phyto-geographic regions are in the process of being designated as Lead Gardens and being strengthened with suitable manpower and research facilities to provide leadership support for other Botanic Gardens is given below:

S.No.	Name of the Organization	Region	Status
1.	Baba Ghulam Shah Badshah University, Rajouri, J&K	Western Himalay	Proposal under consideration
2.	Y.S. Parmar University of Horticulture & Forestry, Solan, H.P	Western Himalaya	Proposal awaited
3.	GB Pant Institute of Himalayan Environment and Development , Almora, Uttarakhand	Central Himalaya	Rs.34.68 lakhs sanctioned on March 2008
4	Van Vigyan Kendra, Chessa, Papompare, SFRI, Itanagar, Arunachal Pradesh	East Himalaya	Rs.57.00 lakhs sanctioned on September 2008
5.	Guwahati Botanical Garden, Assam	North East India	Proposal awaited
6.	Regional Plant Resources Centre, Bhubneshwar, Orissa	Eastern Ghats	Rs. 50.50 lakhs sanctioned on Sept 2008
7.	Indian Botanic Garden, Howrah, West Bengal	East Coast	Proposal awaited
8.	National Botanical Research Institute, Ranapratap Marg, Lucknow, Uttar Pradesh	Genetic plains	Proposal under consideration
9.	Central Arid Zone Research Institute Jodhpur, Rajasthan	Arid Zone	Rs. 99.02 lakhs sanctioned on Oct 2008
10.	Tropical Forest Research Institute (ICFRE), Jabalpur, Madhya Pradesh	Central India	Proposal awaited
11.	Deptt. of Bio Sciences, University of Hyderabad, Hyderabad, Andhra Pradesh	Deccan Plateau	Proposal awaited
12.	Department of Botany, Shivaji University, Kolhapur, Maharashtra	North Western Ghat	Rs.47.64 lakhs sanctioned on Sept 2008
13	Ranipat Herbarium Institute of Natural History, Thiruchellapalli, Tamil Nadu	Western Ghats	Rs. 66.45 lakhs sanctioned on Sept 2008
14.	Tropical Botanic Garden and Research Institute, Trivandrum, Kerala	South Western Ghats	Rs. 76.14 lakhs sanctioned on March 2008
15.	Gurukula Botanic Garden, Wayanad Kerala	South Western Ghats	Proposal awaited
16	Department of Forestry and Environmental Sciences, University of Agricultural Sciences, GKVK campus, Bangalore, Karnataka	Western Ghats	Proposal under consideration



# Ministry of Environment and Forests Notification

(On Coastal Zone Management Renotification)

New Delhi, July 21, 2008

**S.O 1761(E).**- Whereas the Central Government in the Ministry of Environment and Forests had vide its notification No. S.O. 1070(E) dated the 1<sup>st</sup> May, 2008 notified a draft Coastal Management Zone (hereinafter referred to as the said notification) inviting objections or suggestions on the proposals contained in the said notification in writing within a period of sixty days from the date of issue of the said notification, i.e., till the 30<sup>th</sup> June, 2008;

And whereas the Central Government has now received many representations and requests from the State Governments including the stakeholders for extending the time limit for seeking objections or suggestions;

And whereas the Central Government while considering the concerns expressed by the State Governments and stakeholders, have decided in the public interest to go for republishing the said notification and giving opportunity to the public affected thereby in making objections and suggestions on the proposals contained therein with in a period of sixty days from the date of re-publication of this notification;

Now, therefore, in exercise of the powers conferred by sub-section (1) and clauses (V) of sub-section (2) of Section 3 of the Environment (Protection) Act, 1986 (29 of 1986) read with sub-rule (3) of rule 5 of the Environment (Protection) Rules, 1986 the Central Government proposes to issue a notification to be Known as the Coastal Management Zone (CMZ) Notification, 2008, for the information of the public likely to be affected thereby and notice is hereby given that the said draft Notification will be taken into consideration by the Central Government on and after the expiry of sixty days from the date of publication of said notification in the Official Gazette.

Any person interested in making any objections or suggestions on the proposals contained in the draft Notification may do so in writing within the period so specified through post to the Secretary, Ministry of Environment and Forests, Paryavaran Bhawan, CGO Complex, Lodi Road, New Delhi- 110003, or electronically at e-mail address; [secy@menf.nic.in](mailto:secy@menf.nic.in). ( Details may be browsed at [http\\envfor.nic.in/login](http://envfor.nic.in/login))

[ File no. 11-83/2005-1A III]  
Dr. Nalini Bhat, Scientist 'G'

## 5<sup>th</sup> India-EU Joint Working Group meeting on Environment

5<sup>th</sup> India -EU Joint Working Group meeting was held on 15<sup>th</sup> September, 2008 in Mumbai. The Indian side was lead by Sh. Sudhir Mital, Joint Secretary and EU side by Ms. Soledad Blanco, DG Environment, European Commission, Brussels. The meeting discussed on Climate Change , Biodiversity, Forestry and Waste Management issues for further bilateral cooperation.

## 3<sup>rd</sup> India-EU Environment Forum Meeting

The 3<sup>rd</sup> India–EU Environment Forum meeting was held on 16<sup>th</sup> September,2008 in Mumbai on Chemicals Management and REACH (Registration ,Evaluation, Authorization and Restriction of Chemicals). The Indian side was chaired by Mr .R.H Khawaja, Additional Secretary and EU side by Soledad Blanco, DG Environment, European Commission, Brussels. There was active participation of Government Agencies and private industry.

# Ministry of Environment and Forests Order

## Subject: Designation of repositories under the Biological Diversity Act, 2002

In exercise of the powers conferred by sub-section (1) of Section 39 of the Biological Diversity Act, 2002, read with sections 6 and 12 of Notification S.O. 1911 (E), dated 8th November, 2006, the Ministry of Environment and Forests, Govt. of India, hereby designates the following institutions to act as repositories under the Act for different categories of biological resources:

2. In accordance with sub-section (2) of Section 39 of the Act, the designated repositories shall also keep in safe custody the representative samples, as voucher specimens of the biological material accessed in accordance with the provisions of Section 19 of the Act, alongwith relevant information related to the material, such

as DNA fingerprints, if so required by the National Biodiversity Authority (NBA).

3. The designated repositories at serial No. 1,3,4,5,10,11,12 and 13 shall also keep in safe custody the type specimen deposited by any person who discovers a new taxon, in accordance with sub-section (3) of Section 39 of the Act.
4. This order issues with the approval of the competent authority. □

A.K. Goyal  
Joint Secretary to the Government of India  
Dated the 28<sup>th</sup> August, 2008  
(File no. 26/15/2007 –CSC)

S. No.	Name of the Institution	Category of biological resource
1.	Botanical Survey of India, Kolkata	Flora (Angiosperms, Gymnosperms, Pteridophytes, Bryophytes, Lichens, Macrofungi, Macroalgae)
2.	National Bureau of Plant Genetic Resources, New Delhi	Plant genetic Resources
3.	National Botanical Research Institute, Lucknow	Flora (Angiosperms, Gymnosperms, Pteridophytes, Bryophytes, Lichens, Macrofungi, Macroalgae)
4.	Indian Council of Forestry Research and Education, Dehradun ( Forest Research Institute, Dehradun; Institute of Forest Genetics and Tree Breeding, Coimbatore; and Tropical Forest Research Institute, Jabalpur)	Flora (Angiosperms, Gymnosperms, Pteridophytes, Bryophytes, Lichens, Macrofungi, Macroalgae). For TFRI only Fauna ( termites, butterflies, moths)
5.	Zoological Survey of India, Kolkata	Fauna
6.	National Bureau of Animal Genetic Resources, Karnal, Haryana	Genetic resources of domestic animals
7.	National Bureau of Fish Genetic Resources, Lucknow, U.P.	Fish genetic resources
8.	National Institute of Oceanography, Goa	Marine flora and fauna
9.	Wildlife Institute of India, Dehradun	Faunal resources in protected Areas
10.	National Bureau of Agriculturally Important Micro-organism, Mau Nath Bhanjan, U.P.	Agriculturally important micro-organisms
11.	Institute of Microbial Technology, Chandigarh	Microorganisms
12.	National Institute of Virology, Pune	Viruses
13.	Indian Agricultural Research Institute, New Delhi	Microbes/Fungi

## Acid Rain Status in India – an update

Growth of economy of a country mainly depends on the amount of use of energy resources. As India is among the fastest growing countries with regard to economy, the natural consequence one can draw of it is that there has been massive increase in the current use of energy resources in different public/private sectors. This reflects in the fact emission of air pollutants in India has drastically increased with the passage of time mainly on account of the anthropogenic activity. Use of resources is a time-honoured necessity for the growth and development of civilisation, but the other side of it is that it has led to several adverse consequences of it, as one in the form of acid rain which may have many fold detrimental impact on the society.

Acid rain is caused mainly by the presence of sulphuric and nitric acids in the rain water which are results of oxidation of sulphur and nitrogen contents emitted in the atmosphere mainly through bio-fuel, fossil fuel and bio-mass burning in the vehicles, industries, thermal power plants, etc. Transports of oxides of nitrogen and sulphur from a source region to a region of less availability of potential acid neutralizer (e.g.  $\text{CaCO}_3$ ,  $\text{MgCO}_3$ ,  $\text{Ca}(\text{OH})_2$ ,  $\text{NH}_3$  etc.) may also lead to acidification of precipitation particles there.

From the chemistry point of view, a water sample showing pH value equal to 7 is said to be neutral. However, while dealing with the acidity/alkalinity of rain water in the atmospheric sciences, a pH value range of 5.6-5.65 is taken as the reference value (i.e., neutral pH-value range) to decide whether the rain water is acidic, neutral or alkaline. This is because of the partial dissolution of atmosphere  $\text{CO}_2$  in the rain water causing presence of weak carbonic acid ( $\text{H}_2\text{CO}_3$ ) in the rain water which lowers its pH value. Thus, while dealing with rain water acidity a pH value range 5.6-5.65 is taken as pure water neutrality in equilibrium with atmospheric  $\text{CO}_2$ .

There have been meagre reports of acid rain in India in the past and that too have been only the episodic.

Reported acid precipitations in India includes the acid rain in Chembur and Colaba industrial areas of Mumbai, in the vicinity of Singrauli Super thermal Power Plant (average pH value 5.3), at a rural site of Bhubaneswar (median pH value 5.0) and the Silent Valley (pH=5.3). Latest reports on acid rain are at Kalyan (pH=5.28), Chembur (pH=4.8), Sinhagad (pH=5.2), Delhi (pH<5.6) and very recently at Panipat (pH<5.6) of National Capital Region of Delhi. Although the pH value of rainwater at Pune has been reported to lie in the alkaline range, its value has shown decreasing trend from value of 7.5 in 1986 to 6.2 in 1998. The main reason is attributed to the decrease in the level of calcium ion and increase in sulphate and nitrate ions. Rain fall in Agra and Delhi regions have also shown decrease in pH value with the passage of time. Thus, it is a situation which alarms to have control over the emission not only in these regions but in other regions also.

It has been found that potential neutralizer of the acidic components of rain water in Indian region is Calcium which is mainly naturally derived from the soil. As the soil of the most part of Indian land is Calcareous, it contains abundance of calcium. So, the Indian soil has as yet put a check on the acidification of rain water, but how long? So, it is advised to every individual of the society, particularly in benevolence to the living beings, to be aware of alarming levels of various unwanted anthropogenic emissions and neutralisation potential of the naturally derived metallic components, abstain from the activity causing dangerous emissions and dissuade the others and try to search for alternatives causing diminished or nil emissions. Otherwise, it would lead to potential chemical hazardous phenomena like acid rain.

(ENVIS Newsletter, Vol 4, No. 2, 2007, Indian Institute of Tropical Meteorology, Pune) □



# Ministry of Environment and Forests

## Notification

(Emission Standard for common hazardous waste Incinerator)  
New Delhi, the 26th June, 2008

**G.S.R. 481 (E)** - In exercise of the powers conferred by sections 6 and 25 of the Environment (Protections) Act, 1986 (29 of 1986), the Central Government hereby makes the following rules further to amend the Environment (Protection) Rules, 1986, namely:-

1. (1) These rules may be called the Environment (Protection) Fifth Amendment Rules, 2008.  
(2) They shall come into force on the date of their publication in the Official Gazette.
2. In the Environment (Protection) Rules, 1986  
In Schedule I, after serial number 99 and entries relating thereto, the following serial number and entries shall be inserted, namely:-

S.NO	Industry	Parameter	Standard
1	2	3	4
100	Common Hazardous Waste Incinerator	<b>A. Emission</b>	
		Limiting Concentration In mg/Nm <sup>3</sup> , Unless stated	Sampling Duration in (minutes) unless stated
		Particulate Matter	30
		HCL	30
		SO <sub>2</sub>	30
		CO	30
		Total Organic Carbon	24 hour
		HF	30
		NO <sub>x</sub> (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	30
		Total dioxins and furans	8 hours
		Cd + Th + their compounds	2 hours
		Hg and its compounds	2 hours
		Sb + As + Pb + Co + Cr + Cu + Mn + Ni + V + their Compounds	2 hours
<b>Notes :</b>			
I. All monitored values shall be corrected to 11% oxygen on dry basis.			
II. The CO <sub>2</sub> concentration in tail gas shall not be less than 7%.			
III. In case, halogenated organic waste is less than 1% by weight in input waste, all the facilities in twin chamber incinerators shall be designed to achieve a minimum temperature of 950°C in secondary combustion chamber and with a gas residence time in secondary combustion chamber not less than 2 (two) seconds.			
IV. In case halogenated organic waste is more than 1% by weight in input waste, waste shall be incinerated only in twin chamber incinerators and all the facilities shall be designed to achieved a minimum temperature of 1100°C in secondary combustion chamber with a gas residence time in secondary combustion Chamber not less than 2 (two seconds).			
V. Incineration plants shall be operated ( combustion chambers) with such temperature, retention time and turbulence, as to achieve Total Organic Carbon (TOC) content in the slag and bottom ashes less than 3% or their loss on ignition is less than 5% of the dry weight."			

(F.No.Q-15017/95/2000-CPW)  
Sudhir Mittal, Joint Secretary

# Ministry of Environment and Forests

## Notification

(Emission Standard for Incinerator for Pesticide Industry)  
New Delhi, the 18th August, 2008

**G.S..R. 600 (E)** - In exercise of the power conferred by Section 6 and 25 of the Environment (Protection) Act, 1986 (29 of 1986), the Central Government hereby makes the following rules further to amend the Environment (Protection) Rules, 1986, namely:-

- 1 (i) These rules may be called the Environment (Protection) Seventh Amendment Rules, 2008  
(ii) They shall come into force on the date of their publication in the official Gazette.
2. In the Environment (Protection) Rules, 1986, In Schedule I after serial number 100 and entries relating thereto, the following serial number and entries shall be inserted, namely:-

S. No.	Industry	Parameter	Standard
1	2	3	4
101	Incinerator for Pesticide Industry	<b>A. Emission</b>	Limiting Concentration in mg/Nm <sup>3</sup> , unless stated
		Particulate Matter	50
		HCL	50
		SO <sub>2</sub>	200
		CO <sub>2</sub>	100
		Total Organic Carbon	20
		Total Dioxins and Furans*	Existing Incinerator 0.2 ngTEQ/Nm <sup>3</sup>
			New Incinerator 0.1 ngTEQ/Nm <sup>3</sup>
		Sb+As+Pb+Cr+Co+Cu+Mn +Ni+V+their compounds	1.5
			Sampling Duration in (minutes) unless stated
			30
			30
			30
			daily average
			8 hours
			8 hours
			2 hours
		* The existing plant shall comply with norms for dioxins and furans as 0.1 ng/TEQ/ Nm <sup>3</sup> within a period of five years from the date of publication of this notification.	
	<b>Notes :</b>		
	i. All monitored values shall be corrected to 11% oxygen on dry basis.		
	ii. The CO <sub>2</sub> concentration in tail gas shall not be less than 7%.		
	iii. In case, halogenated organic waste is less than 1% by weight in input waste, all the facilities in single chamber incinerator shall be designed so as to achieve a minimum temperature of 1100°C, in the incinerator. For Fluidized bed technology Incinerator, temperature shall be maintained at 950°C.		
	iv. In case halogenated organic waste is more than 1 % by weight in inputs waste, waste shall be incinerated only in twin chamber incinerators and all the facilities shall be designed to achieve a minimum temperature of 1100°C in secondary combustion chamber with a gas residence time in secondary combustion chamber not less than two seconds.		
	v. Scrubber meant for scrubbing emission shall not be used as quencher.		
	vi. Incineration plants shall be operated (combustion chambers) with such temperature, retention time and turbulence, as to achive Total Organic Carbon (TOC) content in the slag and bottom ashes less than 3 % and their loss on ignition in less than 5 % of the dry weight.		
	vii. The incinerators shall have a chimney of atleast thirty metre height.		
	<b>B. Wastewater</b>		
	i. Wastewater (scrubber water and floor washing) shall be discharged into receiving water conforming to the norms prescribed under Schedule VI: General Standards for Discharge of Environment Poliutions (Part A: Effluents) notified under the Environment (Protection) Rules, 1986.		
	ii. The built up in Total Dissolved Solids (TDS) in wastewater of floor washings shall not exceed 1000 mg/l over and above the TDS of raw water used.		

(F.No.Q-15017/25/2007-CPW)  
R.K Vaish, Joint Secretary

# Ministry of Environment and Forests

## Notification

(Emission Standard for Coffee Industry)  
New Delhi, the 6th August, 2008

**G.S..R. 579 (E)** - In exercise of the power conferred by Section 6 and 25 of the Environment (Protection) Act, 1986 (29 of 1986), the Central Government hereby makes the following rules further to amend the Environment (Protection) Rules, 1986, namely:-

1. (i) These rules may be called the Environment (Protection) Sixth Amendment Rules, 2008  
(ii) They shall come into force on the date of their publication in the Official Gazette.
2. In the Environment (Protection) Rules 1986. in Schedule - I  
After serial number 34 and entries relating thereto, the following serial number and entries shall be inserted, namely:-

S. No.	Industry	Parameter	Standard
1	2	3	4
35	Coffee Industry	<b>Instant/Dry Processing</b>	
			Limiting value for concentration in mg/l except for pH
		pH	6.5 – 8.5
		BOD 3 days 27° C	100
		Total Dissolved Solids	2100
		<b>Wet/Parchment Coffee Processing</b>	
		pH	6.5 – 8.5
		BOD 3 days 27° C	1000
	<p><b>Notes :</b></p> <p>(i) Coffee growers having plantation area less than 10 ha with wet processing shall store primary treated effluent in lined lagoons for solar evaporation with a non-permeable system at the base and sides of lagoon</p> <p>(ii) Coffee growers having plantation area between 10-25 ha with wet rocessing shall store primary (equalization and neutralization) treated effluent in lined lagoons for solar evaporation with a non-permeable system at the base and sides of lagoon</p> <p>(iii) Coffee growers having plantation area 25 ha or above with wet processing shall store secondary treated effluent in conformity with above norms in lined lagoon with a non-permeable lining system at the base and sides of lagoon and use the effluent for irrigation after dilution so as BOD of diluted effluent for land application is less than 100 mg/l</p> <p>(iv) The minimum liner specification for a non-permeable lining system shall be composite barrier having 1.5 mm High Density Polyethylene (DPE) geomembrane or equivalent overlying 90 cm of soil (clay or amended soil) having permeability coefficient not more than <math>1 \times 10^{-5}</math> cm/sec</p> <p>(v) The effluent storage facilities/lagoons/solar evaporation ponds shall be located above high flood level mark of the nearby stream, rivulet etc. with below mentioned free board and away from any water body/stream at a distance</p>		
	Grower	Small	Medium
		(<10ha)	(10-25 ha)
		Large	(>25ha)
	Free Board (cm)	30	60
	Distance (m)	50	100
		150	
	<p>(vi) Raw, Treated and/or diluted effluent shall not be discharged into surface water body or used for recharging groundwater under any circumstances what so ever”.</p>		

(F.No.Q-15017/26/2007-CPW)  
R.K Vaish, Joint Secretary



# Ministry of Environment and Forests

## Notification

(Environmental Laboratories)  
New Delhi, the 31st July, 2008

**S.O. 1894 (E)** - In exercise of the powers conferred by clause of sub-section (1) of Section 12 and Section 13 of the Environment (Protection) Act, 1986 (29 of 1986) read with rule 10 of Environment (Protection) Rules, 1986, the Central Government hereby recognizes the laboratories specified in column (2) of the Table given below as environmental laboratories to carry out the functions entrusted to such laboratories under the said Act and the rules made thereunder, and the persons specified in column (3) as Government Analysts for the purpose of analysis of samples of air, water, soil or other substances send for analysis by the Central Government or the officer empowered under Section 11 of the said Act for a period specified in column (4) of the Table aforesaid and for that purpose makes the following further amendments in the notification of the Government of India in the Ministry of Environment and Forests, number S.O. 1174(E) dated the 18<sup>th</sup> July, 2007, namely:-

In the Table appended to the said notification, (i) for serial number 8 and the entries relating thereto, the following serial number and entries shall be substituted namely:-

Table			
Sl. No.	Name of the Laboratory	Name of the Government Analyst	Recognition with effect from and valid up to
1	2	3	4
"8	M/s Sesa Goa Ltd. P.O. Box 125, Sesaghor 20 Economic Development Corporation Complex, Pallo Panjim, Goa-403001	(1) Miss Leena Venuckar (2) Shri Pradeep Raikar (3) Shri Arvind Handigoi	31-7-2008 to 30-7-2013"
(ii) After serial number 68 and the entries relating thereto, the following serial number and entries shall be inserted namely :			
"69	M/s Sadekar Enviro Engineers Private Limited, House No. 306 & 307 Plot No. 61, Patel Estate, Reis Magos, Verem, Alt 50 Betim, Bardez (Panaji) Goa-403101	(1) Mr. Vinayak Gangaram Kudkar (2) Mr. Pradeep Prabhakar Joshi (3) Miss. Poonam Jagganath Deshprabhu	31-7-2008 to 30-7-2013

(F.No.Q-15018/7/2003-CPA)  
R.K Vaish, Joint Secretary

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