



## Green Files

Newsletter on Environment audit and sustainable development issues

International Centre for Environment Audit and  
Sustainable Development (iCED)



### Editorial

Green Files is the quarterly Newsletter focused on developments in the fields of Policy issues in Environmental Legal framework and practices in the fields of Environmental protection and Sustainable Development. Since its inception, this newsletter provides information on news, activities around the world relating to environment and Sustainable Development to its readers, mostly Environment Audit professionals, Researchers, Bureaucrats and persons working in the related fields.

This newsletter is the endeavour by iCED in compiling information relating to recent National and International environmental conferences, recent Audit Reports, news and places in focus, States in focus, Court orders, etc. on environment related issues relating to implementation of projects and government policy.

Since this Newsletter is a step towards reaching the readers of common interest and possessing knowledge in fields of Environment, Sustainable Development, and other related fields, it is open for sharing information and knowledge in these fields. Readers are encouraged to contribute and offer suggestions to make this Newsletter rich, more effective and relevant to its readers. Contributions could be emailed to [iced@cag.gov.in](mailto:iced@cag.gov.in)

**Sunil Dadhe**  
**Director General**

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## I. 66<sup>th</sup> Meeting of Standing Committee (SC66) of the convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)

The sixty-sixth meeting of the Standing Committee (SC 66) of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) convened from 11-15 January 2016 in Geneva, Switzerland. The Committee addressed a long agenda, including, among others: livelihoods, captive breeding, and species trade and conservation, with discussions focusing on elephants and National Ivory Action Plans, rhinos, Asian big cats, Saiga antelope, great apes, pangolins, sharks and rays, sturgeons and paddlefish, ebony and rosewoods and African teak.

CITES was established as a response to growing concerns that over-exploitation of wildlife through international trade was contributing to the rapid decline of many species of plants and animals around the world. The Convention was signed by representatives from 80 countries in Washington, DC, on 3 March 1973, and entered into force on 1 July 1975. As of January 2016, there are 181 parties to the Convention. The aim of CITES is to ensure that international trade of wild animal and plant species does not threaten their survival. The first Conference of the Parties (CoP) to CITES was held in Bern, Switzerland, in November 1976, and subsequent CoPs have been held every two to three years. CITES parties regulate wildlife trade through controls and regulations on species listed in three appendices according to the intensity of intervention required. There are approximately 5,600 fauna species and 30,000 flora species protected under the CITES. Parties regulate international trade of CITES

species through a system of permits and certificates that are required before specimens listed are imported, exported or introduced from the sea. Major outcomes of the 66<sup>th</sup> SC meeting are:-

- i. SC 66 welcomed the adoption of two resolutions by UN General Assembly on tackling illicit trafficking in wildlife and the Sustainable Development Goals (SDGs). UN General Assembly Resolution on tackling illicit trafficking aims at both supply and demand side of wildlife trafficking; recognizes the role of CITES as an international legal instrument for conservation of wildlife and its linkages with the UN Convention against Transnational Organized Crime (UNTOC) and the UN Convention against Corruption, and the work of the International Consortium on Combating Wildlife Crime (ICWC)..
- ii. SC 66 also noted the report on the celebration of the World Wildlife Day on 3 March, and relevant recommendations, including for developed countries to use it as an opportunity to draw attention to wildlife challenges and for parties and other interested stakeholders to make voluntary contributions to secure the organization of World Wildlife Day 2016. To strengthen cooperation, collaboration and synergies between CITES and the other biodiversity-related conventions, SC 66 endorsed five areas of cooperation: UNEP-related activities; the Biodiversity Liaison Group; processes led by the CBD; cooperation with the Convention on the Conservation of Migratory Species of

Wild Animals (CMS); and information and knowledge management through the UN Information Portal on Multilateral Environmental Agreements. It also recommended that parties participate in activities to strengthen synergies at the national level among biodiversity-related conventions.

- iii. SC 66 adopted the report and the draft decision presented by Peru, Co-Chair of the Working Group on CITES and Livelihoods. It directed the Secretariat to cooperate with UN agencies, and international and regional organizations to support capacity-building activities that support parties to implement the Convention as an important part of enabling livelihoods. As per the decision and report of the working group parties have to promote the use of the CITES and Livelihoods toolkit, guidelines and handbook; and Secretariat has to facilitate the organization of workshops and side events to showcase successful livelihood experiences and exchange lessons learned, in collaboration with interested parties and relevant international and regional organizations.
- iv. Report on implementation of the convention relating to captive-bred and ranched specimens noted that percentage of specimens in trade from

non-wild origin is increasing. SC66 adopted a draft resolution and draft decisions for adoption at CoP17. The draft resolution directs the Animals Committee and Standing Committee, in cooperation with the Secretariat, relevant experts and in consultation with parties, to review biological, trade and other relevant information regarding animal species subject to significant levels of trade using source codes C<sup>1</sup>, D<sup>2</sup>, F<sup>3</sup> or R<sup>4</sup>, to identify problems associated with the implementation of the Convention and to develop solutions in accordance with the proposed four-stage sequence. SC 66 highlighted that 88 countries need to strengthen their legislative framework particularly for illegal trade in wildlife. It emphasised that decisions adopted by CoP 16 and SC 65 recommendations have not been fully implemented and called on to review progress of parties in adopting appropriate measures, and recommend a suspension of commercial trade in specimens of CITES-listed species with those parties that have failed to adopt appropriate measures for the effective implementation of the Convention. SC 66 agreed to suspended trade in specimens of wildlife originating in Guinea Bissau, Liberia and Venezuela for failure to adopt appropriate

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<sup>1</sup> Animals (as well as parts and derivatives thereof) bred in captivity in accordance with Resolution Conf. 10.16 (Rev.) and exported under the provisions of Article VII, paragraph 5, of the Convention (i.e., specimens of species included in Appendix I for non-commercial purposes and specimens of species included in Appendices II and III).

<sup>2</sup> Appendix-I animals (as well as parts and derivatives thereof) bred in captivity for commercial purposes

originating from CITES-registered captive breeding operations and exported under the provisions of Article VII, paragraph 4, of the Convention.

<sup>3</sup> Animals born in captivity (F1 or subsequent generations) that do not fulfill the definition of “bred in captivity” in Resolution Conf. 10.16 (Rev.) as well as parts and derivatives thereof.

<sup>4</sup> Specimens originating from a ranching operation.

measures for the effective implementation of the Convention.

- v. Drawing attention to 14 parties (Bhutan, Central African Republic, Republic of the Congo, Grenada, Guinea, Mali, Mongolia, Nicaragua, Panama, Rwanda, São Tomé and Príncipe, San Marino, Solomon Islands and Vanuatu), that have failed to submit annual reports for three consecutive years and have not provided adequate justification for this, SC 66 agreed to suspend all trade with them if they do not submit their annual reports within 60 days.
- vi. SC 66 also recommended that parties suspend commercial trade in specimens of CITES-listed species with Nigeria, Angola and the Lao People's Democratic Republic until these parties submit progress reports on National Ivory Action Plans (NIAPs) implementation, acknowledging that some progress has been made towards NIAP actions."
- vii. SC 66 deliberated on the Report of The Working Group on Disposal of Illegally Traded and Confiscated Specimens of forwarded the decisions and the consolidated resolution to the CoP17 and referred the decision on the continuation and mandate of the Working Group to CoP17. The consolidated draft resolution, with regard to specimens that are exported or re-exported in violation of the Convention, recommends that when specimens are exported or re-exported in violation of the Convention, importing parties:
  - a. consider that the seizure and confiscation of such specimens are generally preferable to the definitive refusal of the import of the specimen;
  - b. notify as soon as possible the management authority of the state from which the specimens were consigned of the violation and of any enforcement actions taken concerning these specimens; and
  - c. when the import of specimens that have been exported or re-exported in violation of the Convention is refused by the country to which the specimens are consigned, the exporting or re-exporting party take the measures necessary to ensure that such specimens are not re-entered into illegal trade, including monitoring their return to the country and providing for their confiscation.
- viii. SC66 urged all parties to report comprehensive and accurate data as required by the Monitoring Illegal Killing of Elephants (MIKE) and Elephant Trade Information System (ETIS) monitoring systems by 31 January 2016, and to conduct and release the results of elephant population surveys according to MIKE standards in a timely manner; and requested the Secretariat to issue a Notification to the Parties to this effect, noting Kenya's request to issue a separate Notification to the Parties on large ivory seizures. SC 66 agreed to submit to CoP17 a draft decision, which calls for:
  - a. convening a meeting of representatives from parties concerned with the development

- and implementation of NIAPs, in cooperation with ICCWC partner organizations;
- b. identify opportunities for cross-border collaboration and regional cooperation, joint actions, and resource mobilization; and
  - c. discuss shared challenges and technical assistance needs. The SC also agreed to propose a decision, for consideration at CoP17, to request the Secretariat, subject to available resources, to provide guidance on "best practices" for the management of legal and illegal ivory stockpiles.

SC 66 requested the Secretariat to identify parties of "primary concern," "secondary concern" and "importance to watch,"<sup>5</sup> based on an analysis of the MIKE and ETIS reports that will be prepared for CoP17, and to make recommendations for consideration by CoP17.

## II. Judgement of NGT on Cleaning of River Yamuna

**(Manoj Mishra vs. Union of India & Ors.)**  
***(Judgement of January, 2015 on O.A 6/2012 and O.A. 300/2013)***

### Background

In the year 1994, in furtherance to a news item titled '**And Quite Flows the Mailee Yamuna**', the Supreme Court of India issued *suo moto* notice to various authorities. Since 1994, the Supreme Court has passed various orders with one object in mind, that, the '**Mailee Yamuna**' should be converted into salubrious and

pristine Yamuna and its water in the entire region, at least from Hathnikund in Haryana, to Taj Mahal, Agra, should be least polluted. Being completely dissatisfied with the state of affairs prevailing in that regard, the Supreme Court, vide its Order dated 10th October, 2012, observed as under:

*"It has been brought to the notice of this Court that despite heavy expenditure, in thousands of crores, having been incurred by the Central Government, Government of the States of Haryana and Uttar Pradesh and the local authorities in the National Capital Territory of Delhi, the pollution of river Yamuna has increased by the day. Where the maximum permissible limit of BOD is 3 mg/l, there at the Nizamuddin Bridge, it is 37 mg/l. Similarly, the total coliform permissible is 5000 MPN/100 ml, there it is 17 billion. It is unfortunate that huge public funds have been spent without showing any results in the improvement of water quality of river Yamuna"*

The present applications before the National Green Tribunal (NGT), primarily concern with that section of River Yamuna which flows in the National Capital Territory (NCT) of Delhi. Yamuna has nearly 26-27 km stretch from Wazirabad Barrage to village Jaitpur, which is the most significant section from the point of view of pollution. In the Delhi segment of Wazirabad Village at Okhla, nearly a segment of 22 kilometers, it only gets domestic and industrial waste water of Delhi and thus, is the most polluted segment. The CPCB records on state-wise contribution of waste water generation in the cities located on the banks of

<sup>5</sup> CITES has identified 22 countries that are most heavily implicated in the illegal trade in ivory. These are categorized as countries of 'primary concern' (eight

Parties), 'secondary concern' (eight Parties) and 'importance to watch' (six Parties).  
 By: Vijyender Tanwar

Yamuna show that in Delhi the length of the River is merely 3% of the total length of the river, before it joins the River Ganga. However, the sewage generation is 3,800 MLT, forming 76% of the pollutants put into the River Yamuna.

The applicants have approached the National Green Tribunal with averments that their campaign has recognised that River Yamuna is not only a sacred river of India, but an aquatic lifeline for millions of people and also a large number of them depend on it for sustenance. Various studies and data have revealed the fact that River Yamuna is critically threatened by various practices and pressures. The terms of Article 21 of the Constitution of India provide a clear constitutional mandate that not only requires the State to endure to safeguard environment and wildlife, but, also the citizens to improve the natural environment including forest, lake, river, etc. The applicant also invoked special jurisdiction of the Tribunal in terms of Section 15 of the NGT Act, praying for complete restitution of the environment and ecology of the river bed and for making Yamuna pollution free. The applicant has prayed in Original Application No. 6 of 2012 that all the debris and other solid waste dumped in the river bed should be directed to be removed and the natural water body be restored to its original form. Application No. 300/2013, is in respect of the ongoing encroachments and the conversion of Kushak Drain into parking and road-cum-parking space and conversion of land use of the Shahdara Link Drain from 'utility' to 'commercial' and proposed construction of commercial undertaking in the form and nature of "Delhi Haat" - a commercial shopping complex, over and above the drain. The applicants stated that the city of Delhi, on

account of its undulating terrain, has a number of natural and manmade storm water drains to ensure that the city does not get flooded during rains and the water reaches with ease to River Yamuna. Thus the natural drainage of city is river bound. Quite contrary to this, the urban flooding in Delhi in monsoon is common. The main reason for this frequent flooding is that, over a period of time many of the storm water drains, which also at one time acted as the natural tributaries of River Yamuna, have been first turned into storm-cum-waste water drains and later many of them were covered and taken away from public view and obstructed from playing their natural role as storm water drains as well as verdant greenways within the city. According to the applicants, such ill-advised conversion of drains has reduced the easy and efficient drainage in the city as well as compromised the biodiversity present in and along these drains and their ability to recharge the ground water. The applicants have contended that pollution is a civil wrong and is committed against the community at large. Persons who commit such wrong have to pay damages (compensation) for restitution of the environment and ecology. The drains, particularly, the natural storm water drains which meet River Yamuna and provide it water, that can even help in diluting pollution and provide safer environment, must be kept free of obstruction and pollution.

### **Judgement**

**This project shall be called '*Maily Se Nirmal Yamuna*' Revitalization Project, 2017.**

1. The Delhi Jal Board (DJB) and other concerned Corporations under whose jurisdiction existing 23 STPs fall, shall, within two months, ensure that all these STPs,

including the one proposed to be commissioned at Delhi Cantonment, should be made fully operational, should operate to their optimum capacity and operate effectively 24x7, without compromising the quality of treated water released from such STPs.

2. NGT further directed that the Action Plan in regard to installation of STPs on 32 major and minor drains shall be prepared within three months of passing of this order.

3. All the newly proposed 32 STPs should be constructed and installed with the requisite capacity varying from 0.6 mgd to 10 mgd, at the sites specified, within the time frame indicated in this judgment. Once, the total of 55 STPs would operate effectively and to their optimum capacity, the water released from them shall be recycled and utilised for agriculture, horticulture and industrial purposes and least of this recycled water would be discharged into the River Yamuna.

4. Action Plan to be prepared to utilize the treated water from the existing 23 STPs as well as from the 32 proposed STPs by ensuring the release of water strictly in accordance with the prescribed quality parameters.

5. Wherever necessary, the technology of the existing STPs should be upgraded to ensure proper performance and adherence to the prescribed standards of effluent discharge.

6. The concerned authorities shall construct and install 26 pump stations at the locations and of the capacity as indicated in the Action Plan placed before the Tribunal.

7. Further, all the STPs shall be provided with a power backup to ensure that they operate effectively 24x7. It shall be ensured that the functional data of all STPs is online and

is connected to the Delhi Pollution Control Committee as well as the Central Pollution Control Board, particularly in respect of COD, TDS, TSS and pH and it shall be ensured that the STPs are operational even during power failures.

8. All the industrial clusters in Delhi shall be provided with Common Effluent Treatment Plants (CETPs). These CETPs shall be effluent-specific and capacity-specific, with reference to the particular industrial cluster. The installation cost of the CETP shall be borne preferably by the authority that owns and maintains that industrial cluster.

9. NGT directed the State of Haryana to ensure that all the industries/industrial clusters that are located near or at the banks of River Yamuna, should preferably be no discharge units. If that is not possible, then such industrial clusters should be directed to install CETPs of the requisite size and standards.

10. The flood plain should be identified for the flood of once in 25 years in the interest of ecology, bio-diversity and the river flow. The DDA shall prepare a map in this regard and would physically demarcate the entire flood plain.

11. NGT constituted the 'Principal Committee' which shall be responsible and under whose supervision the directions contained in this judgment and the project reports shall be completely, effectively and expeditiously complied with. All concerned Authorities responsible for carrying out directives of this judgment, shall report the matters and submit the respective reports and data to the Principal Committee. The Committee shall file quarterly report of compliance before the Tribunal.

12. NGT directed and prohibited the carrying on of any construction activity in the demarcated flood plain henceforth. Upon identification existing structures in flood plain, the Principal Committee shall make its recommendations as to which of the structures ought or ought not to be demolished, in the interest of environment and ecology.

13. All the concerned authorities including the DDA, Municipal Corporations and the NCT of Delhi, to take immediate and effective steps for repossessing the Flood Plain area under the unauthorised and illegal occupation of any person and / or any other body. This direction is also necessitated for the reason that as per the records before the Tribunal, out of total area of 9700 hectares for River Front Development ('O' Zone), only 1452 hectare is presently available with the DDA for development and the remaining area is occupied in an unauthorised manner or through leases granted by the DDA..

14. It is an established fact that presently, vegetables, fodder grown and allied projects at the flood plain of River Yamuna is an indirect but a serious public health issue as the persons eating or using such agricultural produce can suffer from serious diseases including cancer. Therefore, NGT directed that no authority shall permit and no person shall carryout, any edible crops / fodder cultivation on the Flood Plain till Yamuna is pollution free.

15. There shall be complete prohibition on dumping of debris, construction or any other material in and around River Yamuna. Whoever violates this direction relating to the dumping of debris, shall be liable to pay compensation of Rs. 50,000/- on the 'Polluter Pays' Principle and the Precautionary Principle. Such compensation

shall be used for removal of such waste and restoration of environment.

16. The NGT directed the concerned authorities, particularly, the Irrigation Department and concerned Corporations or authorities to build special Ghats on the banks of River Yamuna, where people could offer or immerse *pooja* material or any other material like, food-grain, oil, etc, which shall then be duly collected by the concerned authorities for immediate and proper disposal in a scientific manner. It shall be ensured that no such material is permitted to join the main stream of the river at any point.

17. Whatever remnant construction or other waste is still lying on the banks of the entire stretch of Yamuna in NCT Delhi, would be removed positively within four months by the concerned authority / State under whose jurisdiction the said area falls.

18. NGT directed all the concerned authorities to clean all the 157 natural storm water drains as identified by the Committee, within four months from the date of passing of this judgment and the drains should be made obstruction free and no waste should be permitted to be dumped in such drains. There shall be controlled dredging of River Yamuna to remove the huge accumulation of sediments and sludge for restoration of the cross section and flood carrying capacity of the River Yamuna.

19. Existing wetlands and water bodies, both up-stream and downstream of Wazirabad reservoir, should be deepened and enlarged. This should be done in addition to providing more water bodies.

20. The concerned Corporations under the guidance of the Principal Committee shall submit a report as to the identification and existence of the 44 drains (natural) which have been reflected in the Drainage Map of 1976, but were not traceable, as pointed out by the Expert Committee before the Tribunal. This report will be submitted to the Principal Committee within three months from the date of passing of this judgment.

21. The Yamuna River Front i.e. the flood plain shall be restored, preserved and beautified, strictly in accordance with the report of the Expert Committee dated 19th April, 2014 as per its acceptance on 2nd August, 2014 by the MoEF as well as High Powered Committee.

22. The Government of the NCT of Delhi and the neighbouring States shall, within a period of three months from date of order, identify the site where the sludge / dredged material from the drains and River Yamuna is to be stored. The Principal Committee shall also issue directions as to the best way of utilisation of such sludge / dredged material including, for construction of tiles, particularly in reference to paver blocks.

23. Sites for storage of fly ash are a direct source of air and water pollution. Therefore, in furtherance to the MoEF Notification dated 14th September, 1999 and this judgement, NGT directed proper covering of fly ash at the particular sites on the river bank of Yamuna. All the concerned authorities shall ensure that such fly ash should be disposed of at the earliest.

24. The public authorities / Municipal Corporations could require the public at large to contribute to this expenditure based on the 'Polluter Pays' Principle. Funds/compensation

so collected shall exclusively be used for this '**Maily Se Nirmal Yamuna**' Revitalization Project, 2017 and allied projects, with the object of ensuring pollution free Yamuna, clean and effective drainage system and for providing wholesome water to the residents of Delhi. Such environmental compensation may be determined by the Authority/Corporation with reference to appropriate criteria and could be collected as part of the property / house tax.

25. NGT directed all concerned to make every possible effort to ensure that the storm water drains do not carry sewage. Sewage may be carried through those drains upon which the STP's have already been installed, till the completion of the project.

26. The CPCB, DPCC in coordination with the DJB, shall collect samples from River Yamuna, its floodplain and from the respective STP's at different places and sites for detailed analysis. This shall form the baseline data for implementation of this project. It will also be helpful in determining the improvement in the water quality.

27. There shall be no construction and / or coverage of any of the drains in Delhi by any Authority or Municipal Corporation. All the drains shall be kept obstruction free by the concerned Corporation. Corporation shall ensure that the cross section of the drains to carry the requisite storm water for the flood of once in 25 years.

28. All the concerned authorities of NCT of Delhi, State of UP and State of Haryana shall implement the project without demur and default, expeditiously. The entire project contemplated under these reports and this judgment of the Tribunal shall be completed by 31st March, 2017.

### **Significance of the Judgement**

Some have called Yamuna, 'a drain', some 'most polluted river' while others have termed it a 'dry river', except for in the monsoon season, when it only carries wastes of different kinds. These expressions may not sound very appropriate for a river which is the major source of human living and has religious sentiments attached with it, but when examined scientifically, these expressions are found to be having substance. It cannot be disputed and in fact, has not been disputed that the present status of Yamuna is only of a sewer, due to lack of fresh water flow, discharge of untreated or partly treated domestic and industrial waste and due to dumping of debris on its banks and in it. Its flood plains are highly truncated and degraded, resulting in depletion in most of its natural bio-diversity

Experience has shown that authorities lacked requisite will to execute the orders, plans and schemes sincerely and effectively, which has resulted in turning Yamuna, particularly, in this section into a drain carrying sewage, domestic waste as well as industrial and trade effluents. The State instrumentalities and authorities have failed to discharge their Constitutional and statutory duties, while citizens have failed to discharge their Fundamental Duty to protect the environment, particularly in relation to River Yamuna. While, on one hand we venerate our rivers, on the other hand, we do not think twice before discharging untreated industrial effluents and sewage into them. River Yamuna is a victim of this dereliction of our Fundamental Duty for years. Despite assaults on nature by polluting River Yamuna through various activities like, encroachments on its banks and dumping waste on its river bed and floodplain, still, River Yamuna really flows 'quietly'. The

authorities, as well as the people of Delhi owe a Fundamental Duty to do everything in their power to ensure restoration of River Yamuna to its natural flow and tranquillity. Thus, there is dire need to take stringent and effective steps, with a determined mind, to ensure that none fails in performance of their respective functions, duties and obligations to achieve the ultimate goal of converting '*Mailee Yamuna*' into '*Nirmal Yamuna*' under the project '*Maily Se Nirmal Yamuna*' Revitalization Plan, 2017.

By this judgment, NGT directed all the concerned Authorities, State Governments and the Principal Committee to ensure timely compliance of these directions, as this is the only plausible and practical way by which River Yamuna would become pollution free and its flood plain conducive for the biodiversity that it deserves. The River Yamuna would not only meet the ecological and environmental standards prescribed but would also provide clean air and water to the residents of Delhi, who are entitled to it. It will also help in providing sufficient water for agricultural and industrial purposes, thus, saving considerable quantity of potable water, so as to enable the concerned authorities to provide the same to all the colonies of Delhi.

Source:

[www.greentribunal.gov.in/Writereaddata/Downloads/6-2012\(PB-I-Judg\)OA-13-1-2015.pdf](http://www.greentribunal.gov.in/Writereaddata/Downloads/6-2012(PB-I-Judg)OA-13-1-2015.pdf)

### **III. Critical Discussion of CRZ Notification 2011**

The marine environment - including the oceans and all seas and adjacent coastal areas forms an integrated whole that is an essential component of the global life-support system and a positive asset that presents opportunities for sustainable development. As populations in coastal areas increase and the economic

activity diversifies, all the impacts on coastal environment are bound to worsen threatening survival several species, productivity of the biota, and render fishing an unsustainable proposition. It is, therefore, clear that unless governments and resource users take appropriate action, the degradation of the coastal and marine environment will become uncontrollable and there will be no possibilities for sustainable use of resources from these waters.

The Government of India in exercise of the powers conferred by Rule 5 of the Environment (Protection) Rules, 1986, has declared the coastal stretches of seas, bays, estuaries, creeks, rivers and backwaters which are influenced by tidal action (in the landward side) upto 500 metres from the High Tide Line (HTL) and the land between the Low Tide Line (LTL) and the HTL as Coastal Regulation Zone; and imposed restrictions on the setting up and expansion of industries, operations or processes, etc. in the said Coastal Regulation Zone (CRZ). The notification envisaged creation of an appropriate authority at the state/UT level to be responsible for enforcement and enactment of these provisions. The notification is an attempt to prevent uncontrolled and environmentally unsound development on the coast. It is an attempt to provide a legal framework for the protection of the coastal environment, in the background of the concerns expressed in the convention on biodiversity. Later in year 1992 the Report of the United Nations Conference on Environment and Development includes an independent Chapter 17 under Agenda 21 which is dedicated to the Protection of the oceans, all kinds of seas, including enclosed and semi-enclosed seas, and coastal areas and the protection, rational use and development of their living resources.

The Government of India with the aim to provide comprehensive measures for the protection and conservation of coastal

environment of India issued a revised notification on 6<sup>th</sup> January 2011. The 1991 Notification was amended almost 25 times in consideration of requests made by various State Governments, Central Ministries, NGOs etc. In addition, there were also several office orders issued by Ministry of Environment and Forests clarifying certain provisions. These changes have now been consolidated in the 2011 Notification which also deal with following issues more effectively:

- The notification for islands and coastline of mainland were differentiated considering the diversity in terms of biodiversity, hydrodynamic conditions, and demographic patterns, and natural resources, geomorphological and geological features.
- Clear procedure for obtaining CRZ clearance with stipulations of time lines and monitoring and enforcement mechanism.
- The 1991 Notification sought to regulate all developmental activities in the inter-tidal area and within 500 metres on the landward side. No concrete steps were indicated in the 1991 Notification with regard to the pollution emanating from land based activities.
- Consideration to hardships to the persons / communities living in certain ecologically sensitive coastal stretches. These included slum dwellers and other persons living in dilapidated and unsafe buildings in Mumbai, communities living in islands in the backwaters of Kerala, local communities living along the coast of Goa and other traditional coastal inhabitants.

[The 2011 Notification](#) takes into account various issues in a comprehensive manner, relying on the recommendations made in the “Final Frontier” Report by the Committee chaired by Dr. M.S. Swaminathan on Coastal

Regulation and the findings of the various consultations held in various coastal States and Union territories. The notification provides for the identification / demarcation of Coastal Regulation Zone (CRZ) areas, identification of prohibited and regulated activities, process for clearance, preparation of Coastal Zone Management Plans (CZMPs), enforcement of the provisions and identifications of requiring special considerations and prescribing specific regulations has been dealt in in the new notification. If we compare Coastal Regulation Zone Notifications of 1991 and 2011 following are the new significant provisions in 2011 Notification:

- The entire water area which includes 12 nautical miles in the sea and the entire water area of a tidal water body such as creek, river, estuary will be regulated by the Notification.
- In order to safeguard livelihood and property of local communities including the infrastructure along the coastal areas the hazard line has been introduced which will be demarcated by the offices of the Survey of India.
- Keeping in view the environmental and social issues, special dispensation has been provided to Greater Mumbai, Kerala, Goa and Critically Coastal Vulnerable Areas such as the Sunderban.
- In view of the erosion experienced along the coastal areas due to man-made interventions the shoreline will be mapped using up-to-date satellite images and the shorelines will then be subsequently classified as 'high eroding', 'medium eroding' and 'low or stable stretches'. No foreshore development would be permissible in high eroding areas.
- To meet the increasing demands of housing for fishing communities and other traditional coastal communities, the No Development Zone which is of 200 metres

from the High Tide Line is being reduced to 100m.

**Provisions that have been retained in Notification, 2011**

- The jurisdiction of 500 metres from the High Tide Line (HTL) along the seafront and 100 metres from the High Tide Line along the tidal influenced water bodies has been retained
- The categorisations of the Coastal Regulation Zone and methodology to be utilised for the preparation of Coastal Zone Management Plans has been retained.

**Provisions dropped in Notification, 2011.**

- No more SEZ projects in Coastal Regulation Zone area will be allowed.
- The provisions restricting the expansion of housing for the rural communities in Coastal Regulation Zone-III area have been dropped.

The CRZ Notification 2011 is a major step-up from the 1991 Notification and the MOEF has made special efforts to include specific provisions to benefit the fisher-folk community in all the coastal areas and address the shortcomings of the 1991 Notification such as time-bound clearances, enforcement measures, special provisions for specific coastal stretches etc.

From a general perspective several aspects of the CRZ Notification, 2011 can be valued positively. The Notification acknowledges, to some extent, the need to coordinate and align project clearance with other administrative decision-making bodies and legislative requirements. The potential to promote effective implementation through increasing transparency. The Notification also includes a mechanism that provides structure for strategic planning of coastal activities the

Coastal Zone Management Plans are science based, that they target coastal hazards, and that they are based on stakeholder involvement, and are reviewed and approved by the MoEF. The Notification acknowledges to some extent the special situation of local coastal communities.

The CRZ Notification lacks a clear vision of how and to what extent threatened coastal areas need to be protected and which measures are actually required. It does neither establish clear standards of protection, neither provides plain objectives and principles to steer administrative decision making, nor does it describe specific programs to achieve or maintain that standard of protection. To give substance to the ecosystem approach, management laws shall include clear and judicially reviewable legal commitments to reduce the overall pressure on coastal and marine ecosystems and protect habitats and species.

In order to balance use and conservation interests sustainably, India must develop a clear vision of how its coasts should look, and by whom and by which means and measures this vision should be achieved. In addition, clear and judicially reviewable objectives, rules, indicators, and programmes of measures must be adopted and effectively implemented. Only where there is a clear reference point which is then operationalised by precise and judicially reviewable objectives and measures, other (sectoral) policies may be directed to contribute to an environmentally sound and sustainable coastal management. Hopefully the adoption of a law by the Parliament in the near future provides the opportunity to improve the CRZ Notification and thus help to prevent coastal degradation.

Sources:

1. Website of Ministry of Environment, Forest and Climate Change [www.moef.nic.in](http://www.moef.nic.in)
2. Sushmita Purohit and Till Markus India's coastal regulation zone notification 2011-tipping the scales

towards environmental sustainability? (Law Environment and Development Journal)

#### IV. Snapshots: Environment news

##### 1. Europe launches satellite to help track global warming-

Prediction of weather phenomena such as El Nino, Collection of data on sea surface temperature and tracking of Global warming to be done through Sentinel-3A satellite under euro Copernicus Earth Observation Project. The multibillion Sentinel-3A satellite which has been launched recently (Tue Feb 16, 2016) will facilitate to record more precise weather forecast and help forecast the impact of rising temperatures. The Satellite orbits 815 km (506 miles) above the Earth to monitor climate related changes.

Source:

<http://uk.reuters.com/article/us-europe-space-environment-idUKKCN0VP2CC>

##### 2. Economic Valuation of Tiger Reserves:

India has total 42 numbers of tiger reserves across the nation which are covering 2% of ground area and 10% of total forest area. The National Tiger Conservation Authority (NTCA) has recently conducted a study through Indian Institute of Forest Management (IIFM), Bhopal to assess Economic Valuation of Tiger Reserves.

The study has been conducted in six tiger reserves viz. Corbett, Kanha, Kaziranga, Periyar, Ranthambore and Sundarbans to evaluate their Economic worth.

In assessing the economic value of these six tiger reserves the IIFM took into account the monetary estimates of a range of "ecosystem services" including water-provisioning, gene-pool protection, carbon storage and sequestration besides others tangible and intangible benefits. Potential of employment generation and tourism had

also been factored into while conducting the evaluation exercise.

The study report has estimated the economic value of these six tiger reserve is whopping \$22059 million. This study going to be beneficial while taking up projects in future and policy making and needs to be replicated in other Reserves of the country.

Source: <http://iifm.ac.in/node/581>

### 3. **India's forest & tree cover increases by 5,081 Sq km: A study by ISFR 2015.**

Based on interpretation of LISS (Linear Imaging Self-Scanning Sensor) III data of indigenous remote sensing satellite, Resourcesat-II. The satellite data interpretation extensive and rigorous ground trothing, (Indian State of Forest Report (ISFR), 2015), the forest and tree cover area increases by 5081 Square kilometre from 79.420 million hectare to 79.425 million hectare, states have registered the increase in forest cover. The total forest and tree cover in the country is 79.42 million, which accounts for 24.16 per cent of the total geographical area. The total forest cover of the country has increased by 3,775 sq km and the tree cover has gone up by 1, 306 sq km. The majority of the increase in forest cover has been observed in open forest category mainly outside forest areas, followed by Very Dense Forest. Open Forest area: Increased by 4744 sq km and accounts for 9.14 per cent of the total geographical area. Very Dense Forest area: Increased by 2404 sq km and accounts for 2.61 per cent of the total geographical area. Total carbon stock: Increased by 1.48 per cent (103 million tonnes) and is estimated to be 7, 044 million tonnes in the country's forest. Around 40 per cent forest cover in India is in 9 big patches of 10, 000 sq kms and more. The increase in mangrove cover also has been included in the increase in total forest cover. 0.5081.

Source:

<http://www.indiaenvironmentportal.org.in/content/422388/india-state-of-forest-report-2015/>

### 4. **India grabs fourth seat in cumulative capacity in wind power--The Global Wind Energy Council**

India emerges as 4th largest player in the world in the field of wind power- The Global Wind Energy Council (GWEC) in its report announced India is the fourth cumulative capacity in wind power by adding 2,623 MW wind power in 2015. India has achieved significant success in the onshore wind power development with about 24 GW of wind energy capacity already installed and generating power. To give further fillip to the renewable energy sources, the Ministry of New & Renewable Energy notifies the National Offshore Wind Energy Policy on 09th September, 2015. With introduction of this policy, the Government is attempting to replicate the success of onshore wind power development in the offshore wind power development. It is noteworthy that India is having 7517km of coastline and its territorial waters extend up to 12 nautical miles into the sea. The coastline of Rameshwaram and Kanyakumari in Tamil Nadu and Gujarat Coast show reasonable potential. A preliminary assessment suggests potential to establish around 1 GW capacity wind farm each along the coastline of Rameshwaram and Kanyakumari in Tamilnadu.

Source:

<http://www.downtoearth.org.in/news/india-grabs-fourth-seat-in-cumulative-capacity-in-wind-power-52794>

### 5. **Moradabad, in Uttar Pradesh, becomes one of the biggest informal e-waste recycling hubs in India, Tamilnadu.**

Moradabad, in Uttar Pradesh, becomes one of the biggest informal e-waste recycling hubs in India. Hitherto Popularly known as

the Brass City of India, has also been affected by the global recession and consequent decrease in demand for brass products; manufacturers and handicraft workers are shifting towards the informal, unauthorized e-waste sector. Handicraft workers are now experienced at extracting metals from electronic products—computer monitors, CPUs, remote controls, radio transmitters, old mobile phones and keyboards. The e-waste in Moradabad comes from all the metro cities, majorly from New Delhi (Shastri Park, Silampur, Mundka and Mandoli), Mumbai, Kolkata, Bangalore and Chennai. E-waste recycling has become a home business in the city, with most members in a family involved in processes right from dismantling to metal recovery. Dismantling and recycling activities in Moradabad are carried out mostly in basements or rooftops of houses of people engaged in this business. The work involves hammering dismantled gadgets and motherboards to extract copper, silver and gold from the circuits. Workers burn motherboards that contain heavy metals in open piles which release deadly toxic fumes. Circuit boards are cooked over open flames or in shallow pans, exposing workers to lead fumes. Copper is extracted during this process. Gold is extracted from circuit board chips by acid baths, spewing even more toxic gases into the air. These processes are very hazardous to the environment and human health.

Source:

<http://www.cseindia.org/userfiles/moradabad-e-waste.pdf>

**6. The building that 'sucks up' SMOG:**

Cement absorbs pollution from the air and turns it into harmless salt that washes off in the rain— Buildings in many city centres bear the stains left by decades of heavy

traffic and pollution, but a new type of cement could be about to change this by actually cleaning the air around it.

An Italian construction firm has developed a 'biodynamic' mortar that is able to remove pollutants from the air automatically. The mortar, which is made from recycled scraps of marble and left over aggregate, absorbs nitrogen oxide and sulphur pollution and converts it into harmless salts. It uses a titanium catalyst that is activated by ultraviolet light to drive the chemical reaction. The salts then wash off the walls when it rains. It has already been used to create a building in Milan called the Palazzo Italia, which was completed for the World Fair in the city in 2015.

Source:

<http://www.dailymail.co.uk/home/search.html?s=&authornamef=Richard+Gray+for+MailOnline>

**7. Loan Agreement signed between Government of India and JICA for Cleaning of Mula-Mutha River in Pune**

The Mula Mutha in Pune river at Pune is of the severely polluted river in India identified by Central Pollution Control Board. The major reasons for pollution of Mula Mutha are discharge of untreated domestic waste water into the river due to inadequate sewerage system (including pumping stations) & sewage treatment capacity in the town, as well as open defecation on the river banks.

The Government signed a loan agreement with Japan International Cooperation Agency (JICA) for pollution abatement of River Mula-Mutha under National River Conservation Plan (NRCP) amounting Rs. 19.064 billion for period of 40 years.

The project is scheduled to be completed by January, 2022 and project cost will be shared between Government of India and Pune Municipal Corporation (PMC), in the ratio of 85:15 respectively.

The Project include construction of 11 new Sewage Treatment Plants (STPs) including includes installation of Central SCADA system for centralized monitoring of functioning of STPs, construction of 24 units of community toilet facilities in slum and fringe areas, public participation and awareness programme, GIS mapping of sewerage facilities for better asset management.

Source:

<http://pib.nic.in/newsite/erelease.aspx>

#### **8. Solar Power Capacity Crosses Milestone of 5,000 MW in India**

The Government has set the target of generating 100 GW of solar power by the year 2021-22 under the National Solar Mission. It is envisaged to generate 60 GW ground mounted grid-connected solar power and 40 GW through roof-top grid interactive solar power to fulfill the 100 GW of solar power. The Ministry has also fixed year-wise targets to monitor the solar power generation in the country. The target for the current year is 2,000 MW and next year target is 12,000 MW. The installed capacity of solar power in India crossed the milestone of 5,000 MW yesterday. The cumulative installed capacity has reached to 5,130 MW with installed capacity of 1385 MW in current FY. The state-wise break-up of 5,130 MW is given in the Table below. The state of Rajasthan stands 1<sup>st</sup> in the country with 1264 MW, followed by Gujarat (1024MW), Madhya Pradesh (679 MW), Tamil Nadu (419 MW), Maharashtra (379 MW) and Andhra Pradesh (357 MW).

Source:

<http://pib.nic.in/newsite/erelease.aspx>

#### **9. 'Decentralization of Environmental Clearance for Sustainable sand Mining and Mining of Minor Minerals.**

The Ministry of Environment and Forest has created District Environment Impact Assessment Authority (DEIAA) for proper monitoring of sand mining. Initiative is to formulate the policy for mining of minor minerals with special emphasis on sustainable sand mining. In consultation with the State governments, the Ministry has also prepared guidelines for sustainable sand mining. The movement of mined out material and sand will be controlled through Transit Permit The security feature of Transit Permit include, printing on IBA approved MICR paper, Unique Barcode, Unique QR code, Fugitive Ink Background, Invisible Ink Mark, Void Pantograph and Watermark. Information technology tools such as bar coding and SMS will be used to monitor the mined out material from source to destination.

Source:

[Source:http://pib.nic.in/newsite/erelease.aspx](http://pib.nic.in/newsite/erelease.aspx)

#### **10. Environment Ministry launches ENVIS portal**

The Ministry of Environment has launched Environment Information System portal. The Environmental Information System (ENVIS), a Central Sector Scheme of the Ministry has been implemented since 1982. The purpose of the scheme is to integrate country-wide efforts in environmental information collection, collation, storage, retrieval and dissemination through ENVIS websites, which are dedicated to different interesting themes. The network presently

consists of 69 Centres, of which 29 are hosted by the environment/forest department of State governments/UT Administrations and deal with “State of the environment and related issues”, while 40 Centres are being hosted by environment-related governmental and non-governmental organisations/institutes of professional excellence and have a thematic mandate. Major users of ENVIS include Central and State Governments, institutes and individual scientists, researchers, students and agencies carrying out environmental impact assessment of projects, as well as public.

Environmental Information System (ENVIS) Portal - <http://envis.nic.in>, a new initiative to work on improving the digital literacy in the environment sector and deliver services digitally all over the country. The digitization of valuable data covering the broad spectrum of subjects on environment will serve as an asset in generating feature rich repository of information.

Source:

Source:<http://pib.nic.in/newsite/erelease.aspx>

### **11. Government Notifies Plastic Waste Management Rules, 2016**

The Ministry had initially notified the Recycled Plastic Manufacture and Usage Rules in 1999, which was mainly on manufacturing and usage of Plastic carry bags. It is specified that the minimum thickness of plastic bags should be of 20 microns.

Afterward the Plastic Waste (Management and Handling) Rules, 2011 laid down certain

conditions for manufacturing, stocking, sale and use of plastic carry bags and sachets, which were required to be monitored and implemented by the State Pollution Control Boards/ Municipal Authorities. It specified that the minimum thickness of plastic bags should be of 40 microns. This was to facilitate its collection and recycle. However, the implementation of these rules was not so effective because the ambit of these rules was limited to notified municipal areas whereas today, the plastic has reached to our rural areas also. There were no provisions on responsibility of waste generators. The rules did not address the promotion of conversion of waste to useful resources.

To implement the effective monitoring, The Government has notified the Plastic Waste Management Rules, 2016, in suppression of the earlier Plastic Waste (Management and Handling) Rules, 2011. The minimum thickness of plastic carry bags has been increased from 40 microns to 50 microns.

The Plastic Waste Management Rules, 2016 aim to:

- Increase minimum thickness of plastic carry bags from 40 to 50 microns and stipulate minimum thickness of 50 micron for plastic sheets also to facilitate collection and recycle of plastic waste,
- Expand the jurisdiction of applicability from the municipal area to rural areas, because plastic has reached rural areas also
- To bring in the responsibilities of producers and generators, both in plastic waste management system and to introduce collect back system of plastic waste by the producers/brand owners, as per extended producers responsibility;

- To introduce collection of plastic waste management fee through pre-registration of the producers, importers of plastic carry bags/multilayered packaging and vendors selling the same for establishing the waste management system

To promote use of plastic waste for road construction as per Indian Road Congress guidelines or energy recovery, or waste to oil etc. for gainful utilization of waste and also address the waste disposal issue; to entrust more responsibility on waste generators, namely payment of user charge as prescribed by local authority, collection and handing over of waste by the institutional generator, event organizers.

Source:

[Source:http://pib.nic.in/newsite/erelease.aspx](http://pib.nic.in/newsite/erelease.aspx)

## V. News from iCED

The President of the European Court of Auditors (ECA), Mr Vitor Caldeira paid a visit to iCED in February 2016. The visit concluded on a very positive note. The Director General made a brief presentation about evolution of iCED, its nomination as Global Training Facility by INTOSAI WGEA, infrastructure available including the quality of faculty, the activities at iCED and its achievements so far. The President, ECA appreciated the initiative of Comptroller and Auditor General of India in the form



of establishment of iCED. The President also expressed the possible collaboration with iCED

and SAI India in the future in the areas of capacity building, knowledge sharing etc. in the field of environment audit and sustainable development.

iCED organized three National Training Programmes in the last quarter of 2015-16. The prominent training programme amongst the three was the one which was organized for the Principal Accountants General and Accountants General.



In this training programme on 'introduction to environment audit and sustainable development' 11 Principal Accountant Generals / Accountant Generals participated. The schedule was designed to provide a glimpse of the current practices in environment audit, present trends in the management of environmental issues like energy, waste, water and future issues like Nationally Determined Contributions in respect of the implementation of Paris Agreement about Climate Change. The training design and its delivery was appreciated by the participating PAsG and AsG.

## VI. State in Focus: West Bengal

The state of West Bengal is on the eastern bottleneck of India, extends from the Himalayas in the north to the Bay of Bengal in the south. It is only state to have a coastline as well as the Himalayas. Five states (Assam, Bihar, Jharkhand, Odisha and Sikkim) and three countries

(Bangladesh, Bhutan and Nepal) surround the state. West Bengal is 14<sup>th</sup> largest state in India covering an area of 88,752 km<sup>2</sup>. The State supports approximately 7.54% of the population of India on only 2.69% of the country's geographical area. The State has the highest population density of 1028 persons per sq. km. 88.71 % of the population resides in rural areas and 5.80% in tribal areas of the State. The [Ganges](#) is the main river, which divides in West Bengal. One branch enters Bangladesh as the [Padma](#) or Pôdda, while the other flows through West Bengal as the [Bhagirathi River](#) and [Hooghly River](#). The state has always been in the centrestage of country's economic, cultural, historical and political activities

**(1) Environment Scenario**

**(a) Forests**

As per GoI's forest survey report 2015, total recorded forest area in the state is 11,879 sq. km., of which 7,054 sq. km. is reserved forest, 3,772 sq. km. is protected forest and 1,053 sq. km. is unclassed forest, thus constituting 13.38% of the geographical area of the state and 1.55% of India's forest area. Reasons for increase in forest cover in 2015 assessment are due to plantation activities, coppice growth inside the forest, also growth of commercial plantations, shade trees inside the tea garden and mangrove rehabilitations. The forest cover including the forests created outside the recorded forest area is 15.52% of the geographical area as assessed by the GIS Cell of the W.B. Forest Department in the year 2004. Estuarine water bodies like rivers and creeks in mangrove forest and river flowing through the recorded forest land in Jalpaiguri have been included while computing the forest cover. Similarly large portions of farm forestry plantation, raised outside forest land, having forest like micro ecosystem, have

been enumerated as forest cover. The vegetation cover of the state is around 27% of the geographical area. The vegetation cover includes village orchards/groves, tea garden and horticulture plantations.

According to the National Forest Policy, on an average, a region should have 33 percent of the total geographical area under forest. The forest cover should be 60 percent of total area or more for hills and not less than 20 percent of the total area in plains.

Source:

<http://www.westbengalforest.gov.in/>  
[http://www.westbengalforest.gov.in/publication\\_pdf/sfr11-12.pdf](http://www.westbengalforest.gov.in/publication_pdf/sfr11-12.pdf)  
[http://www.westbengalforest.gov.in/publication\\_pdf/Bengal%20Forest%20Brochure%202014.pdf](http://www.westbengalforest.gov.in/publication_pdf/Bengal%20Forest%20Brochure%202014.pdf)  
[Forest survey report 2015](#)

**(b) Biodiversity**

West Bengal is world famous for its Royal Bengal Tiger. The state is very rich in biodiversity. The main Strategy for conserving its unique biodiversity has been through the creation of protected area network of National Parks, sanctuaries, Biosphere Reserves and identified wetlands and coastal areas. The state has 4,064 sq. km. of forests under protected areas network which is 34% of the State's total forest area and 4.54% of the total geographical area. There are five National Parks, fifteen Sanctuaries, two Tiger Reserves and one Biosphere Reserve. The PA network includes 1,102 sq.km. Sanctuaries, 1693 sq.km. National Parks and the balance are being represented by buffer areas of the two Tiger Reserves, viz. Sundarbans Tiger Reserve and Buxa Tiger Reserve. Recognising the special conservation value of the Sundarbans owing to its unique ecosystem having substantial area under mangrove forests

associated with tiger landscape, has been declared as Biosphere Reserve.

Wildlife in these protected areas include the Royal Bengal Tiger, Indian Rhinoceros, Indian Elephant, Spotted Deer, Bison, Leopard and Crocodile. Sunderban is the only mangrove forest in the world which is the home of Tiger. Sunderban also host endangered species like the Ganges River Dolphin, River Terrapin, estuarine Crocodile etc. Sunderban National Park forming core of Sunderban Tiger Reserve received recognition as World Heritage Site by UNESCO in 1987.

Floral and faunal diversity of Sunderban Mangroves is as under:

Floral Diversity		
1	True Mangrove species	26
2	Mangrove associates	29
3	Back mangrove species	29
4	Family	40
5	Genera	60
6	Species	84
The Fauna		
7	Total no. of species	1586
8	Vertebrate Species	481
9	Hemichordate Species	1
10	Invertebrate Species	1104
11	Protozoan species	106
Included in Sch. I & II of WLP Act <sup>6</sup>		
1	Mammals	15
2	Birds	8
3	Reptiles	17
4	Total species included in Sch. I of WLP Act	24
5	Total species included in Appendix I of CITES Regulation	14

West Bengal is one of the few states in the country where per capita forest area is the lowest (0.01 ha.) and density of the population around fragmented forests is the highest. Evidently, there is tremendous pressure on forests. Coupled with socio-economic problems of poverty, underemployment and unemployment in the forest fringe areas, the major threat to forest comes from illicit collection of fuelwood, fodder and small timber from the forests by the villagers to sustain their livelihood. This problem has, however, been tackled by and large over a major part of forested tract in the State by formation of Forest Protection Committees and through the process of consolidation of Joint Forest Management. The protection is provided through intensive patrolling of the areas by protective personnel. Vigilance by departmental protective staff has been intensified in such areas.

Source:

[http://www.westbengalforest.gov.in/urls\\_all/bio\\_diversity\\_biosphere\\_reserve.html](http://www.westbengalforest.gov.in/urls_all/bio_diversity_biosphere_reserve.html),

[http://www.westbengalforest.gov.in/urls\\_all/forest\\_for\\_est\\_protection\\_general\\_threats.htm](http://www.westbengalforest.gov.in/urls_all/forest_for_est_protection_general_threats.htm) )

*The Wildlife Protection Act, 1972 Act provides for the protection of wild animals, birds and plants. It has six schedules which give varying degrees of protection. Schedule I and Part II of Schedule II provide absolute protection- offences under this are prescribed the highest penalties. Species listed in Schedule III and Schedule IV are also protected, but the penalties are much lower. Schedule V includes the animals which may be hunted. The plants in Schedule VI are prohibited from cultivation and planting.*

### (c) Wetlands

West Bengal has a variety of wetlands ranging from coastal and marine wetlands to inland freshwater lakes, rivers, dams and swamps as well as the constructed wetlands in irrigation schemes and sewerage treatment systems and also the mountain wetlands. Some of these wetlands are recognized as important conservation areas like National Parks, national reserves, Ramsar sites (East Kolkata Wetlands, West Bengal), important bird sanctuaries 4 (Kulik Bird Sanctuary, West Bengal) and World Heritage Site / Biosphere Reserve like Sundarbans National Park.

Apart from being biodiversity hotspots, the wetland resources are equally crucial for income generation, livelihood and wellbeing of the communities. However,

due to lack of effective management mechanisms and proper appreciation of their true worth, wetlands have continued to be degraded through unsustainable activities, conversion and overexploitation of their resources. The pressures on wetlands have been exacerbated by catchment degradation and pollution leading to proliferation of invasive species.

In the State of West Bengal the only Ramsar site is the East Kolkata Wetlands. The Ahirom Bil in Murshidabad and the Rasik Bil in Koch Bihar have been identified as Wetlands of National Importance and are under the National Wetland Conservation Programme. The Sundarbans National Park is a World Heritage Site and a Biosphere Reserve. A wide variety of wetlands are found in the State including the freshwater inland wetlands like mountain wetlands, rivers and lakes, marshes and swamps and also coastal wetlands like mangroves, tidal flats, swamps etc. Numerous human-made wetlands in the State include fish and shrimp ponds, farm ponds, irrigated agricultural land, reservoirs, borrow pits, sewage farms, and canals. Innumerable small water bodies dot the landscape of the State, most of which are manmade.

Welfare of the people of the State of West Bengal depends largely upon the proper functioning of the natural resource systems wherein wetlands are among the foremost which draw attention. The challenge here is to overcome the lack of understanding among the implementers of different development sectors and service providers about the significance of wetland ecosystems in maintaining and supporting human health and welfare. The challenge becomes daunting as the section of the community suffering most from the loss of wetland resources are occasionally the poorest and their demands are not easily visible or audible. So a participatory and

community-based approach is needed to ensure conservation and wise use of wetlands and water bodies. No wetlands and water bodies can be filled up, degraded, drained, converted or subjected to any kind of activity which is incompatible with ecological integrity of the wetlands.

Source:

<http://www.tnpcb.gov.in/activities.asp?src=tsdf.html>,

<http://www.environment.tn.nic.in/SoE/images/WasteManagement.pdf> )

### **Solid Waste management**

Solid Waste Management has become one of the major challenges of the urban planner in the States. With high annual growth in urban population and rapid pace of urbanization the situation is becoming more and more critical with the passage of time. State Government has put additional priority to the management of solid waste, especially in the urban areas of the State.

Management of solid waste is a primary responsibility of the urban local bodies. An assessment of the problem has suggested the following areas, which are needed to be taken care of while managing the huge solid wastes that are being regularly generated. They are - Identification of land for disposal of Solid Waste; Mobilization of financial resources for taking up one or more projects; Sharing of land between adjacent municipalities for an Integrated Regional Solid Waste Management; Use of appropriate technology for storage, transportation, disposal and processing of waste; Awareness generation among the citizens, community participation and capacity building and setting up of orientation for solid waste management in the Urban Local Bodies.

To manage the problem of solid waste, two agencies are primarily working in the urban areas, which are - concerned Urban Local Bodies (ULBs) with financial assistance from State Government, Pollution Control Board and

Kolkata Metropolitan Development Authority (KMDA) in KMA areas.

Source:

[http://www.wbdma.gov.in/HTM/MUNI\\_SWM.htm](http://www.wbdma.gov.in/HTM/MUNI_SWM.htm)

### Biomedical waste management

Government of India have notified the Bio Medical Waste (Management and Handling) Rules, 1996 as amended in 2000 under Environment (Protection) Act, 1986. The West Bengal Pollution Control Board enforces these rules.

All health care establishments (HCEs) generating and handling BMW are required to obtain Authorisation from the WBPCB. However, clinics, dispensaries, pathological laboratories, blood banks providing treatment / service to less than 1000 patients per month are exempted from obtaining Authorisation. In addition to obtaining authorization, all HCEs coming under the purview of the rules are required to submit Annual Returns on bio-medical waste generation and disposal to the Board within January every year. As per the provision of the rules it is mandatory for all HCEs to treat BMWs generated by them either on their own or through some authorized Common BMW Treatment Facility (CBWTF). As installation and operation of individual treatment facilities entail high costs, most units opt for the service of CBMWTFs.

There are six privately owned BMW Treatment facilities (CBWTFs) in the state. All the six facilities have autoclaves, shredders and incinerators for treatment of the bio-medical wastes. The operators collect BMW (segregated into incinerable and autoclavable) from their member HCEs and transport the wastes to their treatment and disposal facilities. All CBWTF operators are required to submit Annual Reports to the Board.

According to a CPCB report, in 2009, 23571 kg/day of biomedical waste was generated

(2009) out which 12472 kg/day was getting properly treated. There were approximately 4747 health care facilities in the state with 92950 beds.

Source:

<http://www.wbpcb.gov.in/pages/display/38-biomedical-waste-management>,

<http://www.cpcb.nic.in/wast/bioimediawast/StatusBioMedicalWaste2009.pdf> )

### (e) Water issues

West Bengal is relatively rich in water resources. The three major rivers systems of the state, the Ganga, the Brahmaputra, and the Subarnarekha, account for annual usable surface water of 58.8 billion cubic meter of surface water. Use of surface water is rather low as the state has created very little storage, and the potential to create major storage is limited. The state is also relatively richer compared to other major Indian states in terms of ground water, with assessed annual renewable ground water resources in the state of 27.4 billion cubic meter. From the total annual net replenishment of ground water, the state currently uses about 42 percent, so there is a large untapped potential.

The majority of the population in the state lives in rural areas, most of whom are dependent on agriculture in some way or other for their livelihood. According to current available information, over 25 percent of the state's population lives below the poverty line. These people are primarily belonging to the rural agricultural sector. The main constraints to alleviation of their poverty are small land holdings and uncertainties of rainfall, including periodic occurrence of long dry spells, but also heavy cyclones and floods during the monsoon season. Agriculture is hardly possible during the non-monsoon season without irrigation facilities.

A study, jointly undertaken by the Asian Development Bank (ADB) and the International Water Management Institute (IWMI), entitled Pro-Poor Intervention Strategies in Irrigated Agriculture in Asia (2005), has confirmed that

poverty incidence is lower in irrigated than rainfed areas and that access to adequate and timely irrigation water reduces the severity of poverty. Irrigated agriculture reduces poverty through three direct effects: (i) increased food output (through improved productivity); (ii) higher demand for employment; and (iii) higher real income. A recent study (2010) by Michigan State University and the World Bank on The 'Impact of Irrigation on Agricultural Productivity: Evidence from India' shows that irrigation has a strong and significant impact on land productivity, cropping intensities, and land prices. The study also finds that the impact of irrigation on productivity increases with the quality of irrigation. The study makes the case for continuing support for investments in improving both access and quality of irrigation. Considering the similarities, the two studies show that the development of irrigation will continue to be critical to increasing agricultural production, incomes, and rural livelihoods.

source: <http://www.wbadmip.org/index.php/about-us1/west-bengal-scenario> )

#### **(f) Ground water pollution**

Excessive intake of arsenic in human body causes health hazards and is manifested in the form of arsenic poisoning. The main source of poisoning is through drinking water. The limit of Arsenic in drinking water standard as per BIS (Bureau of Indian Standards) is 0.01mg/L. (IS 10500 -1993 Amended 2003). However affected West Bengal State is following the earlier standard as per BIS (1993) of maximum permissible value 0.05 mg/L ( for detection ) and 0.01mg/L (for removal). There is no immediate effect on the health of the consumer, if small doses are consumed. But due to slow accumulation of arsenic from continuous or repeated exposures, various symptoms may appear in the body of the consumer. Arsenic contamination in ground water of West Bengal in the range of 0.001-3.20 mg/L, occurs in isolated patches, spreading over

79 blocks in eight districts of the state. About 162.6 lakh people (35.48% of the total population of the State) occupying 17,533 habitats live in the risk zone of potential threat in terms of Arsenic related diseases in the future. Central Ground Water Board and the Government of West Bengal have made successful endeavours to provide arsenic free drinking water to the entire population in the arsenic infested area. Arsenic free deeper aquifers have been explored by CGWB. Three aquifer systems have been identified within 100 mbgl, 120 – 160 mbgl and 200 –250 mbgl. The top aquifer within 100 mbgl is mostly arseniferous, whereas both the deeper aquifers which are separated by a thick clay (>10 m) from the overlying aquifers, capable of yielding 5 to 20 lps water, are arsenic free.

National Institute of Hydrology conducted study of arsenic pollution in groundwater in Nadia as well as the hydro-chemical study of the river Hooghly in West Bengal. The alluvial tract along the river Hooghly covering a stretch of around 470 km encompassing eight districts is affected by arsenic pollution of ground water, the source beingogenic.

The occurrence of iron-pyrite and the change of geo-chemical environment due to over-exploitation of groundwater or excessive fluctuation of groundwater table are the possible reasons for decomposition of pyrite to ferrous sulphate, ferric sulphate and sulphuric acid. As a result, the groundwater of the region is characterized by high iron content.

The hydro-chemical study of the river Hooghly also shows consistent arsenic concentration in water and sediment samples of the river. The content of arsenic in the sediments was higher than the ones along the banks of the river Hooghly.

The Farakka Super Thermal Power Plant (STPP) operating in the state of West Bengal is another source of arsenic contamination in the nearby area. The analysis of fly ash deposited in the fly ash disposal ponds indicate arsenic content of the order of 400-500 µg/g. The ash generated from thermal plant finds its way into open environment i.e., air, water and soil from atmospheric precipitation, spillage from pipelines carrying fly ash slurry to ash ponds and from decanted water of ash pond. It contaminates groundwater due to seepage and mixing of fly ash into surface and subsurface water.

The study points out the urgent need for shifting to alternative drinking water sources and for implementation of watershed management programmes to develop small surface storages to address the problem.

Source:

<http://www.indiawaterportal.org/articles/arsenic-pollution-groundwater-west-bengal-research-report-national-institute-hydrology>.

<http://cgwb.gov.in/documents/papers/incidpapers/Paper%2013-Abhijit%20Ray.pdf> )

**(g) Air pollution**

Growing air pollution has emerged as a serious concern in the cities, with vehicular emission and dust contributing a major share of the deteriorating air quality. Central Pollution Control Board initiated National Ambient Air Quality Monitoring (NAAQM) programme in the year 1984 with only seven monitoring stations in the country. Further, it has been strengthened by increasing the number of monitoring stations with 21 monitoring stations in West Bengal.

City	Monitoring station
Kolkata	10
Durgapur	3

Haldia	3
Howrah	4
Asansol	1

CPCB has identified list of polluted cities in which the prescribed National Ambient Air Quality Standards (NAAQS) are violated. These cities have been identified based on ambient air quality data obtained under National Air Quality Monitoring Programme (NAMP). Action plans are being formulated and implemented to control air pollution in non-attainment cities by respective states. In west Bengal, Haldia and Howrah falls under such category of cities.

WBPCB indicates that automobiles contribute significantly to particulates of the size of 1.1 micron and account for nearly 50 per cent of the air pollution load. WBPCB studies in residential and kerbside areas show that the levels of respirable particulate matter and nitrogen dioxide are on-an-average 20 percent more in the kerbside areas indicating high impact of traffic. In Kolkata, nearly 65 per cent of the vehicles are diesel-run. Diesel emissions are very toxic and are branded as probable human carcinogen. Even Bharat Stage IV compliant vehicles have higher toxicity than the petrol counterpart. Diesel cars are legally allowed to emit more nitrogen oxides and particulate matter than petrol vehicles.

Large diesel buses account for nearly one half of the vehicular particulate matter in Kolkata, estimates the ADB study. Large and small buses are also the principal source of nitrogen oxides. Car segment is also dieselling rapidly as is also the national trend. Ill maintained old vehicles are a major problem. The average age of passenger cars within the metropolitan region is about 10 years but over one-quarter of the large diesel trucks are over 30 years. ADB study shows that diesel buses and trucks contribute about 37 percent of the PM2.5 emissions.

Source:

[http://cpcb.nic.in/Non\\_attainment.php](http://cpcb.nic.in/Non_attainment.php)  
<http://www.cpcb.nic.in/Network.php>,  
<http://www.cseindia.org/userfiles/Kolkata%20Report.pdf> )

## (2) Laws and Polices

Some of these are:

- The Water (Prevention and Control of Pollution) Act, 1974 as amended in 1978 and 1988
- The Water (Prevention and Control of Pollution) Rules, 1975
- The Water (Prevention and Control of Pollution) Cess Act, 1977 as amended in 1991
- The Water (Prevention and Control of Pollution) Cess Rules, 1978. as amended in 1992
- The Air (Prevention and Control of Pollution) Act, 1981 as amended in 1987
- The Environment (Protection) Act, 1986
- The Environment (Protection) Rules, 1986
- The Hazardous Waste (Management and Handling) Rules, 1989 as amended in 2000 and 2003
- The Manufacture, Storage and Import of Hazardous Chemical Rules, 1989
- Manufacture, Use, Import, Export and Storage of Hazardous Micro-organism Genetically Engineered Organisms or Cell Rules, 1989
- The Chemical Accidents (Emergency Planning, Preparedness and Response) Rules, 1996
- The Bio-Medical Waste (Management and Handling) Rules, 1998 as amended in 2000
- The Recycled Plastics Manufacture and Usage Rules, 1999 as amended in 2003
- The Noise Pollution (Regulation and Control) Rules, 2000
- The Municipal Solid Wastes (Management & Handling) Rules, 2000
- The Batteries (Management & Handling) Rules, 2001
- The Public Liability Insurance Act, 1991 (No.6 of 1991). as amended in 1992
- The Public Liability Insurance Rules, 1991

- The National Environment Tribunal Act, 1995 (No.27 of 1995)
- The National Environment Appellate Authority Act, 1997
- The National Environment Appellate Authority (Appeal) Rules, 1997
- Coastal Regulation Zone Notification, 1994
- The Ozone Depleting(Regulation and Control) Substance Rules, 2000

Source:

[http://cpcb.nic.in/NewItem\\_19\\_PollutionControlLaw.pdf](http://cpcb.nic.in/NewItem_19_PollutionControlLaw.pdf) )

## (3) Environment Sustainability Index (ESI) 2010

The index aggregates indicators that reflect:

- anthropogenic activities of production, consumption and distribution that exert pressures on the environment,
- state of air quality, water quality, land use and agriculture, forests and biodiversity;
- measures of the impact of the current state of the environment and resource extraction on ecosystem and human health; and
- policy responses and society's efforts to preserve the environment.

ESI is constructed as a composite index from 41 key environmental indicators selected using the Driving Force-Pressure-State-Impact-Response (DPSIR) framework. These indicators capture the driving forces that extract from and pollute the environment (**Driving Force**); depletion and pollution (**Pressure**); present condition of the environment (**State**), impact on the ecosystem and human health (**Impact**) and policy and societal efforts to reduce impacts and protect the environment (**Response**)

ESI is designed to compare Indian States with their peers and does not indicate an absolute level of achievement. Although there are no clear normative benchmarks or thresholds for

‘good’ performance on many of the indicators, the sources on each indicator can be ordered from ‘better’ to ‘worse’. The overall ESI score provide a quick snapshot of State performance, the sub-indices are far more indicative and far more informative, highlighting areas for State intervention. Based on the aggregate ESI, states are categorised into five groups where in West Bengal falls in the group with 20-40 percentile. This indicates that State is likely to experience increasing environmental problems unless appropriate mitigation measures are initiated.

Department) is responsible for administering the EPBC Act. The EPBC Act (Part 3) prohibits the undertaking of an action without approval from the Minister for the Environment (the Minister) or delegate, unless exempt, that is likely to have a significant impact on world heritage areas, national heritage areas, wetlands of international significance, listed threatened species and communities, listed migratory species, the Commonwealth marine environment, Great Barrier Reef Marine Park, nuclear actions, water resources from coal seam gas developments and large mining developments, Commonwealth heritage sites, actions by a Commonwealth agency; or Commonwealth land.

## VII. Managing compliance with Environment Protection and Biodiversity Conservation Act, 1999-SAI Australia

### Introduction

To balance protecting the environment with society’s economic and social needs, the legal framework in Australia has been created based on the guiding principles of ecological sustainable development. The Environment Protection and Biodiversity Conservation Act, 1999 (EPBC Act) is the Australian Government’s primary legislation to protect Australia’s environment and conserve its biodiversity. The objectives of the EPBC Act are broad and include the protection of matters of national environmental significance (MNES), the promotion of ecologically sustainable development, the conservation of biodiversity, and cooperative approaches to the protection and management of the environment. The Department of the Environment (the

Under the EPBC Act, Proponents, such as landholders, developers and miners, are required to refer their proposed actions to the Minister (via the department) to determine whether approval of the action(s) such as - preparing, submitting to the Minister for approval, and implementing, management plans, conserving offset areas to compensate for any damage caused, specifying required environmental monitoring and testing , complying with specified industry standards or codes of practice; and Lodging a bond, guarantee or cash deposit.

Under the EPBC Act, the Minister (or delegate) oversees controlled actions -requiring assessment and approval under the EPBC Act, not controlled actions ‘particular manner’ (NCA-PM decisions)- where approval is not required if the actions are taken in accordance with the manner specified, or not controlled actions—where approval is not required.

Administrative arrangements for implementation of the act include -

Compliance monitoring and investigation / enforcement activities associated with approved controlled actions are managed by the Compliance and Enforcement Branch (CEB) within the Environment Assessment and Compliance Division (EACD) of the department. The EACD Panel, the Regulatory Enforcement Committee, and the Compliance Management Panel, regulate assessing / approving management plans / reports / compliance returns that proponents submit as required by their controlled actions' conditions of approval.

Under One Stop Shop (OSS) arrangements, the assessment and approval of most projects against Commonwealth environmental requirements, which are undertaken by Environment, would be undertaken by the states / territories using existing processes. The states and territories would also be responsible for monitoring and enforcing proponents' compliance with the conditions of approval related to the EPBC Act attached to actions that they approve.

The Australian National Audit Office has undertaken an independent performance audit in the Department of the Environment titled Managing compliance with Environment Protection and Biodiversity Conservation Act, 1999. The audit was conducted in accordance with the authority contained in the Auditor General Act 1997.

#### **Audit objective and criteria adopted by ANAO**

The objective of the audit was to assess the effectiveness of the Department of the Environment's regulation of proponents'

compliance with Part 9 of the Environment Protection and Biodiversity Conservation Act, 1999.

To form a conclusion against the audit objective, the ANAO adopted the following high-level criteria:

- a structured risk management framework to assess and manage compliance risks has been developed.
- a risk-based compliance program to effectively communicate regulatory requirements and to monitor compliance with regulatory objectives has been implemented;
- arrangements to manage non-compliance are effective; and appropriate governance arrangements are in place to effectively support EPBC Act.

#### **Audit conclusions by ANAO-**

1. The provisions of the EPBC Act, 1999 related to the assessment and approval of projects (controlled actions) are designed to facilitate Australia's economic and social development while mitigating significant impacts on matters of national environmental significance (MNES). Since the enactment of the EPBC Act the Australian Government has approved over 600 controlled actions, many with conditions attached that are designed to ensure that MNES are not adversely impacted by the control.

2. As at September 2013, there were almost 8000 conditions attached to approve controlled actions, including the assessment / approval of management plans, reports and compliance returns submitted by proponents, supplemented by monitoring inspections and

compliance audits that were established to protect around 1300 MNES.

3. The Department is yet to establish mature administrative arrangements to effectively discharge its regulatory responsibilities in relation to approved controlled actions. Resulting in limited assurances regarding proponents' compliance with action approval conditions which are designed to address the risks posed to MNES. The Department is not well placed to demonstrate that it is effectively targeting its compliance monitoring activities to the areas of greatest risk.

4. The department collected intelligence information to varying extents through compliance activities but did not regularly or periodically analyse the intelligence it gathered, it was not well placed to assess the risks that controlled actions posed to MNES. The department was yet to establish an effective compliance intelligence capability to collect, store and analyse compliance intelligence; and identify an appropriate set of MNES risk factors (such as the compliance history of proponents) against which approved controlled actions can be assessed and ranked.

5. The department though identified risk factors for assessing controlled actions an appropriate set of relevant factors against which risks could be assessed and ranked were not identified. Risk considerations were not sufficiently documented during the planning of monitoring inspections and compliance audits to demonstrate that inspections and audits were directed at those controlled actions that pose the greatest risk. The absence of a sound risk-based approach meant that compliance monitoring undertaken by the department was insufficient to provide an appropriate level of

assurance of proponents' ongoing compliance with their conditions of approval.

6. The increasing workload on compliance monitoring staff over time resulting in Environment adopting a generally passive approach to monitoring proponents' compliance with most approval conditions and limited awareness of the progress of many approved controlled actions and the elevated risks to MNES that may result during particular stages of an action.

7. The Department had recently established a compliance monitoring strategy that had been designed to coordinate its various compliance activities.

8. Department's passive approach was also evident in its approach to the management of non-compliance. In many cases, instances of proponent non-compliance (mostly of a technical nature—such as, a missed deadline to submit a management plan) were either not identified by staff, or were identified but not referred for assessment and possible enforcement action impacting effectiveness of environmental safeguards; risk environmental damage.; jeopardising the department's ability to take future enforcement action; and harm the public's confidence in the regulator.

9. An examination of IT controls within Compliance and Enforcement Management System (CEMS) also identified significant deficiencies (including in relation to system access) that increase the risks to the integrity and security of regulatory data. Further, Environment's management of hard-copy records generally, does not effectively support its monitoring function

10. It was informed to ANAO that the Department had acknowledged the shortcomings in its regulation of approved

controlled actions and has initiated a broad program of work to address the shortcomings identified establishing a Regulatory Capability Development Program; developing and updating standard operating procedures; and developing a risk-based prioritisation model to assist with the targeting of its compliance monitoring activities. Establishing mature administrative arrangements to effectively regulate approved controlled actions.

**Recommendations of ANAO:**

1. To better assess and manage the risks to matters of national environmental significance posed by approved controlled actions, the Department of the Environment develop and implement an annual program of compliance activities having regard to:

(a) a structured approach to collect, retain and regularly analyse, compliance intelligence; and

(b) the identification and regular review of relevant risk factors for approved controlled actions.

2. To strengthen compliance monitoring of approved controlled actions, that the Department of the Environment:

(a) transfer approved controlled actions to the compliance monitoring area at the time of their approval, unless a specific need has been identified for the assessment branches' retention of the actions; and

(b) establish, and monitor adherence to, appropriate protocols and procedures to help ensure that approved controlled actions retained by the assessment branches are transferred to the compliance

monitoring area once the specific need has been addressed.

3. To improve the management of risks to compliance and matters of national environmental significance, that the Department of the Environment:

(a) review standard operating procedures and reinforce the need for staff to document the assessment and/or approval of material submitted by proponents of approved controlled actions;

(b) better target monitoring activities towards those approved controlled actions that pose the greatest risks to matters of national environmental significance; and

(c) develop and resource a coordinated program of compliance monitoring activities, monitoring inspections and compliance audits.

4. To improve processes for responding to instances of non-compliance, that the Department of the Environment:

(a) reinforce to staff the need for all instances of non-compliance by proponents of approved controlled actions to be recorded centrally; and

(b) improve the documentation of reasons for enforcement decisions, including the key factors considered when an appropriate response was determined.

5. To improve the governance and oversight of the compliance monitoring function, that the Department of the Environment:

(a) implement improvements to IT systems and records management practices, to

address identified gaps and enhance functionality;

(b) improve the frequency and coverage of management reports in relation to compliance monitoring activities, outputs and outcomes; and

(c) develop and report against appropriate performance measures that relate to the activities undertaken to monitor compliance with the EPBC Act.

**Significant learnings:**

- The ANAO had very focussed audit objective of assessing the ‘effectiveness’ of the Department of the Environment’s regulation of proponents’ compliance with the Environment Protection and Biodiversity Conservation Act, 1999. The nature of statute and
- The Audit Criteria identified were very logical and represented a systematic approach for this kind of legislation where the department was functioning mainly as a regulator for the actions and commitments of the project proponents.
- The emphasis of ANAO was on assessing the existence of a structured risk management framework followed by risk-based compliance program and ultimately pointing out the shortcomings of the governance framework leading to appropriate recommendations for the strengthening of the same.
- The Audit Criteria, structure of the Report and recommendations were flowing in a logical way and were exactly answering the audit question.
- The ANAO also audited the Compliance and Enforcement Management System (CEMS) which was an IT tool of the

department for its core functioning in respect of MNES.

The ANAO has expressly mentioned about the ‘harm to the public’s confidence in the regulator’ as one of the impacts of the non-compliance of the MNES by the project proponents thus defining the role of ANAO in the overall accountability framework in Australia.

**VIII. Performance Audit: Implementation of Environmental Laws and Rules by Andhra Pradesh Pollution Control Board (State Audit Report No. 2 of 2015)**

Audit Report (Economic Sector) for the year ended 31<sup>st</sup> March 2014 : Report No.2 of 2015 of Government of Andhra Pradesh – Andhra Pradesh Pollution Control Board (APPCB/Board) is a statutory authority constituted (1976) by GoAP under the powers conferred on it by Section 4 of the Water Act. Initially constituted to implement the provisions of Water Act, the Board was made responsible for implementation of provisions of other environmental Acts enacted subsequently. The environmental laws and rules largely provide the Board a predominant role in monitoring of compliance with the provisions of these laws and rules by industries, municipal authorities, hospitals, etc. The Board is responsible for collection and dissemination of information relating to pollution, planning comprehensive programmes and advising the State Government for prevention, control or abatement of pollution.

**1. Audit Scope**

The Performance Audit was conducted to evaluate the implementation of the Environmental laws and Rules by the APPCB during 2009 to 2014.

**2. Audit Objectives**

The objectives of the performance audit were to assess whether:

- i. Adequate mechanisms have been put in place by the Board for prevention, control and abatement of pollution;

- ii. Monitoring by the Board on the compliance by the stakeholders with the provisions of various environmental laws and rules, was efficient and effective and achieved the desired results;
- iii. Fund management by the Board is efficient to secure optimum utilization; and
- iv. Effective mechanism for Internal Control was in place and functioning effectively.

**3. Audit findings: The main audit findings are as follows:**

- i. **Inadequacy of mechanism for prevention, control and abatement of pollution**
  - a. Board did not prepare Annual Action Plans from 2012-13 onwards. Though Action Plans were approved by the Board for the years 2010-11 and 2011-12, achievement against targets was not prepared. Non-preparation of Action Plans indicates lack of proper planning and monitoring of pollution control activities in the Board.
  - b. The Board was preparing budget estimates in a manner that reflected wide variance in the budget versus actuals. Audit observed that utilization of funds by the Board vis-à-vis budget estimates was poor, ranging between 12.87 to 17.10 per cent during 2009-14, indicating lack of planning and unrealistic preparation of budget estimates.

Shortfall in expenditure was mainly due to non-utilization of financial assistance for establishment of Sewage Treatment Plants; financial assistance for remediation<sup>6</sup> of lakes; non-procurement of laboratory equipment/maintenance; and due to non-filling up of vacancies; etc.

Despite availability of sufficient funds, the Board failed to utilize the resources because of lack of institutional capacity, shortage of manpower, lack of co-operation and coordination with the municipalities and private industries, lack of initiative on the part of the organization, etc.

- Under the Water Act and the Air Act, the State Board may establish or recognize laboratories for analyzing water/air samples to enable the Board to perform the functions stipulated in those Acts. Accordingly, the Board established one Central Laboratory at Hyderabad and zonal laboratories in each of the five zones and has been sending reports to CPCB. Only the Central Laboratory at Hyderabad has NABL accreditation but is currently not recognized under EP Act, as the validity of recognition obtained (2007) by it expired in 2012 and it could not get renewal due to non-obtaining of OHSAS<sup>7</sup>-18001 accreditation as per the revised preconditions stipulated (2011) by MoEF. None of the five Zonal Laboratories is recognized under EP Act, as they did not have sufficient manpower and infrastructure necessary to get NABL accreditation and recognition under EP Act.

- As per CPCB guidelines, every laboratory should have facilities for a minimum of five essential group tests, viz. - physical, inorganic, organic, microbiological and toxicological tests for water analysis. For air analysis, the lab must have facilities for the first four of the above tests. An environmental lab should also provide for biological tests, characterization of hazardous waste and soil/sludge/sediment/solid waste analysis. It was however noticed that four out of the five test checked zonal laboratories did not have the capacity for conducting all the mandatory tests.
- None of the five zonal labs had all the minimum equipment required for sample analysis. The labs either did not have some of the mandatory equipment or have non-functional equipment.
- There was also shortage of technical staff in three out of five zonal labs as against the norms prescribed by CPCB.

**ii. Deficiencies in monitoring compliance of Environmental Laws and Rules:**

- a. Lack of sewage treatment facilities in municipal bodies: Audit observed in the 10 test checked Regions that no Sewage Treatment Plant (STP) was constructed in 86 out of 87 Municipalities and in 4 out of 12 Municipal Corporations.

These Regions generate a total sewage of 1531 million litres per day (MLD) out of which only 486 MLD of sewage (i.e. 32 per cent) was being treated and the remaining 1045 MLD of untreated sewage was being discharged into

<sup>6</sup> Remediation means 'abatement, cleanup, or other method to contain or remove a hazardous substance from an environment'

<sup>7</sup> Occupation Health and Safety Assessment Series

rivers / streams / lakes / open lands, thereby causing pollution.

b. Lack of Treatment of sewage by Health Care Establishments: The Board took a decision (August 2012) that Health Care Establishments (HCEs) i.e. Hospitals and similar establishments which are having 100 beds and more and are not connected to any terminal facilities, should establish individual STPs for treatment of the sewage.

Audit observed that, 116 out of 213 HCEs in the test checked regions were neither connected to terminal facilities nor had installed individual STPs and were discharging the untreated sewage into municipal drains. Sewage treatment by slaughter houses: In the 10 test checked Regions, 69 out of the 73 slaughter houses are operating without any sewage treatment plants / facilities and discharging sewage into municipal drains / nearby water bodies / lands, causing water and air pollution and increasing the risk of public health hazard. Further, there were no arrangements for safe disposal of solid waste generated in the slaughter houses.

Pollution caused by tanneries: Though tanneries fall under highest polluting Red category which were to be inspected annually for compliance with pollution control laws, required number of inspections were not conducted by the Board.

Despite having knowledge of the pollution caused by the tanneries, the Board did not analyze the effluent samples at regular intervals. Samples were collected / analyzed only during inspections.

c. Audit noticed that 13 tanneries were operating in the vicinity of Sai Cheruvu

located near Warangal with no / inadequate / in-operational effluent treatment facilities. As per Board's records, the Common Effluent Treatment Plant (CETP) supposed to be operated by the tanneries was non-functional most of the time.

The Board issued closure orders (September 2009) to seven tanneries which were found to be serious violators of pollution control norms, it later temporarily revoked (April 2010 and February 2011) the closure orders in respect of three tanneries on the grounds of partial compliance of Board's directions. While one tannery was operating beyond expiry of temporary revocation orders, periodical extensions of revocation orders were being granted to two tanneries.

The annual averages of Biochemical Oxygen Demand (BOD) and Total Dissolved Solids (TDS) found in the sample analysis in Sai Cheruvu for 2013 were 120 mg / L and 15240 mg / L against the standard of 2 to 3 mg / L and 2 100 mg / L (maximum) respectively, indicating that the lake water was of lower standard than the lowest Class-E and unfit for even irrigation / industrial use.

d. Polluted River Stretches: Based on past data of water quality monitoring stations, CPCB identified (2010) nine polluted river stretches in the State (based on the water quality data from 2002 to 2008). Out of these, CPCB assigned top priority to two viz. River Musi and Nakkavagu<sup>8</sup> which were found to be highly polluted. The average BOD recorded in these river stretches was 34mg / L and 50mg / L, respectively.

Audit noticed that, even after more than four years, no action plan was prepared by State

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<sup>8</sup> Musi: Monitoring locations at Nagole, Rangareddy and at downstream of

Hyderabad and Nakkavagu: Monitoring location at Bachugudem, Medak

Board for restoration of water quality in these river stretches. It was also noticed that the average BOD in river Musi (at Nagole monitoring station) increased from 62.7 mg / L in 2010 to 118 mg / L in 2013.

- e. Large number of Industries, Municipalities, Healthcare establishments, etc. were operating without consent from the Board
- f. Non evaluation of toxicity of the industrial effluents in coast-based industries in Visakhapatnam District
- g. Flouting of water quality norms by parboiled rice mills

In four<sup>9</sup> test checked Regional Offices, it was noticed that 137 parboiled rice mills were operating without obtaining CFO from the Board and 118 mills were operating with expired CFOs.

36 out of the 333 Parboiled Rice Mills did not have effluent treatment facilities and 192 mills did not install the mandatory water meters to assess the actual water consumption by these rice mills which has a direct linkage to the sewage generated by them.

- h. Inaction on pesticide / metal residues in Kolleru Lake:

Kolleru lake is India's largest fresh water lake and a Bird Sanctuary, spread over two districts<sup>10</sup> of AP. As per a study report (January 2010) prepared by a private agency on behalf of APPCB, there are 14 pesticides (Organochlorine and Carbamates) and 15 heavy metals present in Kolleru lake water. Some of the pesticides detected (Phosphamidon / Organophosphorous, Atrazine, Carbofuran, etc.) are highly toxic to mammals, fish and other wildlife and can cause health and environmental problems in future. Despite the

adverse findings in the study report, the Board neither formulated any action plan to improve the water quality nor monitored the level of pesticides in this important lake / Bird Sanctuary thereafter.

- a. Inadequate monitoring of air quality: None of its Zonal laboratories were monitoring the parameters like fine particulates PM<sub>2.5</sub>, Benzo(a) Pyrene (BaP), Lead, Nickel, Ozone (O<sub>3</sub>) and Benzene, as they did not have the required lab equipment. In 53 out of 74 stations, the annual average RSPM levels were more than the maximum limit of 60 µg / m<sup>3</sup> as per the National Ambient Air Quality (NAAQ) standards prescribed by CPCB. Air Pollution control measures in Hyderabad: no action plan for addressing air pollution by Coal, Bio-mass burning, Road dust, etc., was devised by Board. The Board was also not monitoring GHG emissions, CO<sub>2</sub> and CH<sub>4</sub> on the ground that their monitoring was not mandatory.
- b. Unabated air pollution by Stone Crushers  
There is no effective monitoring by the Board on compliance of the standards by stone crushers in the State. It was noticed that out of a total of 766 stone crushers in the test checked Regions, 599 (78 per cent) were operating without valid Consent for Operation. Board was not conducting regular inspections of crushers. Inspections were being conducted on receipt of public complaints or at the time of renewal of the CFO.

### iii. Management of E-wastes

In AP, inventorization of e-waste in three cities (Hyderabad, Vijayawada and Visakhapatnam)

<sup>9</sup> This issue was examined in Vijayawada, Nalgonda, Kakinada and Guntur ROs only

<sup>10</sup> West Godavari and Krishna Districts

was done by the Environment Protection Training and Research Institute (EPTRI) in October 2011, at the instance of Board. The report estimated that these cities generate 4268.42 MT of e-waste per annum. The study covered only cell phones, televisions, computers and printers. The quantum of e-waste would be much more if other electrical / electronic wastes are also considered. Further, no such studies were conducted in other cities / towns.

As per information furnished by Board, there are only two registered e-waste recycling units (both in Ranga Reddy District) and four registered collection centers in the State. As per Board's data, these agencies collected and processed 493.11 MT of e-waste in 2012-13 which was less than 12 per cent of the total e-waste generated in three major cities.

Thus, only a marginal portion of e-waste is being handled by authorized recyclers and there was no monitoring on collection and disposal of remaining e-waste generated in the State. No action plan was prepared by the Board to watch over-management of e-waste.

**iv. Management of Hazardous Wastes:**

It was observed that the last inventory of Hazardous Waste was done in 2010, which became obsolete due to addition / expansion of industries. As per the Board's records, the Red category (high pollution) industries increased from 2068 in 2009-10 to 3070 in 2013-14, i.e. an increase of 48 per cent. The updated position of actual generation of hazardous waste in the State is not known as the Board did not update / compile the inventory using the annual returns furnished by the occupiers / operators. The Board was showing the same quantum of hazardous waste generated in 2010 (10.87 lakh MT) in the subsequent years also.

**v. Management of Bio-Medical Wastes (BMW)**

As per the Bio-Medical Waste (Management and Handling) Rules-1998, it is the duty of every Health Care Establishments (HCEs) treating 1000 or more patients every month has to obtain authorization from the Board for generating, collecting, receiving, storing, treating, disposing or handling of bio-medical waste. It was observed that out of a total of 4287 such HCEs in 10 test-checked Regions, 441 HCEs did not obtain BMW authorizations and 1618 HCEs (42.07 per cent) were functioning even though their authorizations expired.

Lack of monitoring on veterinary institutions: BMW Rules are also applicable to veterinary institutions and animal houses. However, it was observed that nine out of the 10 sampled Regional Offices did not have any information regarding the veterinary institutions under their jurisdiction and were not monitoring compliance of BMW Rules by veterinary institutions

Non-conducting of survey of occupiers: As per BMW Rules, the institutions providing treatment / service to less than 1000 patients per month are required to set up the requisite BMW treatment facilities stipulated under the Rules. It was observed that none of the sampled ROs had any information of such occupiers / institutions and hence were not monitoring compliance of BMW Rules in such cases.

**vi. Arrears of Water Cess**

One of the major sources of Board's income is its share of water cess collected from industries / municipal bodies under Water Cess Act-1977. It was noticed that as of January 2014, water cess charges of Rs. 11.54 crore (includes Rs. 10.78 crore due from Municipalities /

Municipal Corporations) for the period prior to the year 2005 were not collected by the Board. Further, no demand for the water cess due from municipal bodies after 2005 was raised by the Board as of July 2014.

**vii. Manpower management**

Shortage of manpower: There was shortage of manpower in the Board. As against the sanctioned strength of 500, there were 231 vacancies as of December 2013, which accounts for 46 per cent.

**4. Conclusion**

The Board did not prepare Annual Action Plans from 2012-13 onwards. Zonal laboratories did not have facilities and equipment to analyze necessary parameters of water and air quality. Available equipment was non-functional in some cases. Several industries, municipalities, healthcare establishments were operating without valid / renewed Consent for Operation. There was substantial shortfall in conducting inspections of even highest polluting 'Red' category industries. 116 out of 213 HCEs and 69 out of 73 slaughter houses were operating without sewage treatment facilities. Concentration of Respirable Suspended Particulate Matter in air was more than prescribed standards in 53 out of 74 monitoring stations. Board's planning and action to control air pollution was also deficient. It did little to ensure that the State owned thermal power stations utilize the fly ash generated. There was insufficient monitoring exercised by the Board on compliance of environmental norms by stone crushers. Board's handling and management of Municipal Solid Wastes, e-Wastes, hazardous, bio-medical and plastic wastes issues left gaps due to lack of active participation by stake holders / other departments. Despite such large number of

violations, the Board failed to initiate legal action to curtail and contain pollution. Though there are various Environmental Acts / Waste Handling Rules, their implementation by the Board needs to be strengthened much more. There was acute shortage of staff in the Board and it could not function optimally despite availability of funds.

**5. Recommendations**

Audit recommended for consideration that

- i. Board initiate action to improve facilities and necessary manpower in the zonal laboratories for measuring quality parameters in water and air.
- ii. Regular inspections need to be conducted and follow up action initiated against industries particularly in respect of "Red" category.
- iii. Board initiate legal actions against violation of provisions of environmental laws and non-compliance with directions of the board.
- iv. Board take immediate steps to strengthen its legal mechanism by establishing a full-fledged legal cell / section with qualified legal officers.
- v. Board needs to consider preparing comprehensive action plans to counter all types of pollution in the affected zones utilizing its accumulated funds.