VOLUME-22

Green Files

JUNE 2017

INTERNATIONAL CENTRE FOR ENVIRONMENT AUDIT AND SUSTAINABLE DEVELOPMENT (iCED), JAIPUR

GREEN FILES

Newsletter on Environment Audit and Sustainable Development issues

International Centre for Environment Audit and Sustainable Development (iCED)

EDITORIAL

Green Files, a newsletter brought out by iCED every quarter, highlights contemporary environmental issues; environmental laws; status of environment in Indian provinces; national – international events about environment. The Newsletter also provides information regarding events and happenings at iCED during the quarter.

In this quarter three National Training Programs and three mid-term workshops, on national performance audits being conducted in current year, were conducted at iCED. The workshops were presided over by Shri Rakesh Jain, Deputy Comptroller and Auditor General (RC&LB) and attended by selected Field Audit Offices conducting these audits.

A National Seminar on 'Assessing Preparedness to Achieve Sustainable Development Goals (SDGs)' was also organized on 24 June 2017. The Seminar was presided over by Shri Rakesh Jain, Deputy Comptroller and Auditor General (RC&LB). Representatives from few ministries of Government of India, selected State Governments and Non-Government Organisations attended this seminar. The organisation of this seminar is a small step towards iCED assuming an important role in preparing to assess implementation of SDGs in the country.

iCED looks forward to comments and suggestions on content and presentation of this Newsletter to make Green Files more useful and appealing. Contributions in any form within the broad scope of the newsletter are encouraged. These may be mailed to iced@cag.gov.in

Sunil Dadhe

Director General, iCED

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I. National Seminar about Sustainable Development Goals at iCED

National Seminar on Assessing Preparedness to Achieve Sustainable Development Goals was held at iCED, Jaipur on **24 June, 2017**. As there has been only one year of implementation of Agenda 2030, seminar focused on the preparedness of the government for implementation of SDGs. Its objective was to have broad-based discussions in presence of the officers of Indian Audit and Accounts Department, representatives of state governments, senior officers of Government of India and selected stakeholders outside government (like UN organisations, academicians, etc.) for experience sharing to evolve perspective for our audits. A total of 42 officers including 19 IA&AS officers; representatives from State Governments of Bihar, Gujarat, Himachal Pradesh, Kerala, Rajasthan, Telangana and West Bengal; and officers from union ministries such as Ministry of Statistics and Programme Implementation; Ministry of Law and Justice; Ministry of Water Resources, River Development and Ganga Rejuvenation; Ministry of Health and Family Welfare; Ministry of Housing and Urban Poverty Alleviation; Ministry of Drinking Water and Sanitation and Ministry of Women & Child Development and representatives of outside government entities such as ADB; UNDP and TERI participated in the seminar. Seminar was inaugurated by Shri Rakesh Jain, Deputy Comptroller & Auditor General (RC & LB). Discussion during the seminar was divided into four sessions, each session focussing on a specific theme. At the start of each session an initial presentation was made by officers from IAAD followed by presentations from various stakeholders. Sessions I & II pertaining to Theme I & II were chaired by Shri Rakesh Jain, DAI (RC & LB) and Sessions on Theme III & IV were chaired by Shri R.K. Ghose, ADAI (NR). The four themes adopted for this seminar and the presentations under the respective theme were as mentioned below:

Shri Rakesh Jain, DAI (RC & LB) sitting in the centre with participants of National Seminar

Theme I – Evolution of SDGs, International Stakeholders' Expectations: The session began with a presentation on "**Evolution of SDGs**" by Ms. Swati Pandey, Director, iCISA and Shri Pawan Konda, Dy. Director, O/o DGA (ESM), New Delhi. The theme covered the background of SDGs, their differentiation from MDGs and the integrated nature of SDGs involving vision & principles, Results framework, implementation, follow-up and review. An overview of action taken by various nations across the world was discussed with respect to how they have adapted the SDGs and what kind of mainstreaming actions have been taken by them.

Ms. Swati Pandey,Director, iCISA and Shri Pawan Konda, Dy Director, DGA (ESM), New Delhi

Shri Krishnendu Sarkar, Asian Development Bank in his presentation about "**Perspective of**

Shri Krishnendu Sarkar, ADB

International Stakeholders"discussed the developmental issues with focus on multilateral funding, project management, ADB's focus on SDGs, financing SDGs, challenges in oversight functions etc.

Ms. Rowena Mathew from UNDP during her presentation on "**Implementation of Sustainable Development Goals in Sikkim"** discussed about the initiatives of the Government of Sikkim towards SDGs including proposed legislation on SDGs titled Sikkim Wellbeing of Generations Bill 2017. She discussed the process of consultations taken up in Sikkim and various sustainable initiatives in various sectors.

Ms. Rowena Mathew, UNDP

Theme 2 – Linking of SDG Targets and Indicators to Government policy and Programmes.

Ms. Vidhu Sood, Principal Director, RTI and Shri Kandarp Patel, DAG, O/o PAG (Audit), Andhra Pradesh made a presentation on **"Linking of SDG Targets and Indicators to Government policy and Programmes"**. They discussed rationale and challenges in linking SDGs into National / State level Plans and Policies and identification of right set of indicators and alignment of selected indicators across various data sources. They also brought out the importance of effective convergence of various schemes and coordination across various departments with the nodal agencies / departments for greater accountability. They illustrated these issues with the help of detailed analysis of Goal 2 about Food security.

Ms. Vidhu Sood, PD, RTI Jaipur and Shri Kandarp Patel, DAG, PAG (Audit), AP

Shri Joginder Singh, Advisor (Technical), National Water Mission made a presentation about **"Clean Water and Sanitation (SDG 6)".** He spoke about the proposed indicators for the targets under the goal and National water Mission, importance of Water Use Efficiency. He put forward the ideas of promotion of Water Audits and composite Water Management Index. He discussed the Water Resources of India and future water availability as well as Government of India initiatives like Pradhan Mantri Krishi Sinchayee Yojna (PMKSY).

Shri Joginder Singh, National Water Mission, Ministry of Water Resources, River Development & Ganga Rejuvenation

Shri V K Baby, Special Secretary, Government of Kerala in his presentation on **"Sanitation (SDG 6)"** briefed that SDG goals and targets are qualitative and inclusive and stressed on the need of paradigm shift in approach from storage and distribution to source sustainability. He brought out various challenges like finances slippages, post-construction support, technology. He advocated strong role for the Local Self Governments and optimal use of resources through delegation and Community Based Management (CBM).

Shri V.K. Baby, Government of Kerala

Shri Utpal Biswas, Special Secretary, Government of West Bengal spoke about **"Affordable and Clean Energy (SDG 7)"**. Shri Biswas while elaborating the importance of affordable and clean energy discussed about the initiatives by Government of West Bengal through efficient generation and modernisation programme.

Shri Utpal Biswas, Government of West Bengal

Dr. Rajani Ved, Executive Director, National Health Systems Resource Centre (NHSRC) during her presentation on **"Good health and Well-being (SDG 3)"** explained transformation of MDGs to various SDG 3 and its linkages with other SDGs. She also discussed about the National Health Policy 2017 and key interventions like comprehensive primary health care, essential drugs and diagnostics, newer vaccines, elimination of communicable diseases like TB etc.

Ms. Rajani Ved, National Health Systems Resource Centre, Ministry of Health and Family Welfare

Theme 3 – National and State level Monitoring for progress in achieving SDGs.

Shri Kartikaye Mathur, Director, NAAA, Shimla made a presentation on **"National and state level monitoring for progress in achieving SDGs"**. He mentioned that the Review and Monitoring Framework for SDGs included follow up High Level Political Forum of UN and thematic reviews as well as national results frameworks with targets and indicators, standardization and comparability.

Shri Kartikaye Mathur, Director, NAAA, Shimla

He added that reviewing the progress regularly, analyzing challenges, strengthening statistical knowledge and capacity development at national and state level were important aspects. He emphasized that one of the important lessons from the MDGs was that progress should not only be tracked at national level but also at Subnational level.

Shri Krishna Kumar, Dy. Director General, MOSPI during his presentation on **"Indicators and monitoring- Essence of SDGs"** spoke about the developments at national level about finalization and adaption of indicators for various targets below SDGs. He mentioned defining indicators, financing, monitoring and ownership as some of the challenges in implementation of SDGs.

Shri Krishna Kumar, Social Statistics Division, CSO, Ministry of Statistics and Programme Implementation

Ms. Divya Datt from TERI during her presentation on **"Indicators for SDGs and issues in monitoring"** stated that for Tier I and II indicators, the availability of data at the national level may not necessarily align with the global tier classification and countries can create their own tier classification for implementation as not all indicators relevant to all national contexts. She emphasized upon the framework for monitoring and reviewing SDGs necessary for India, i.e. India specific Tiering of the gloabal indicators, Design of integrated reporting and verification framework and integration of these indicators consistently. She also stated that there was a need of a concerted and sustained process so as to bring together all relevant agencies and stakeholders in India to effectively move this agenda forward.

Ms. Divya Datt, Integrated Policy Analysis, TERI

Theme 4 – Audit approach to assess preparedness for SDGs oriented actions and Way Forward to address expectations.

Shri Jahangir Inamdar, Director (T&R), iCED made a presentation abput **"Audit approach to assess preparedness for SDGs and Way Forward".** He informed the audience about the approaches being adopted by the global community of Supreme Audit institutions. He explained the various aspects which could be assessed by IA&AD during the audit of preparedness. He mentioned that "whole of the government" was to be chosen for any audit of preparedness which could be taken up for all SDGs together for individual SDG.

Shri Jahangir Inamdar, Director (T&R), iCED

During the concluding session general issues like outputs, outcomes and challenges during audit were discussed. Shri R K Ghose, ADAI (NR), who chaired this session, stated that without inputs from executive / government who are entrusted with implementation process, it is not possible for SAI to give the expected audit assurance. This Seminar on Assessing preparedness to Achieve Sustainable Development Goals (SDGs) provided an appropriate platform to implementing departments, governments and IA&AD as government auditor to deliberate on and share perspectives on SDGs..

Shri R.K. Ghose, ADAI (NR) chairing session

Workshop on Audit of National Mission for Clean Ganga

iCED also organised a two day workshop on "Audit of National Mission for Clean Ganga" on 24 - 25 April 2017. Experts from IIT Kanpur, IIT (BHU), Patna University and National Remote Sensing Centre, Hyderabad delivered lectures on overall mission, abatement of water pollution, Participation of People for cleaning Ganga, conservation and rejuvenation of Ganga, Ecological Conservation of Ganga, and Use of technology for protection respectively. These presentation were concluded in early morning session of Day 2 of the workshop. A Panel Discussion on "Administrative setup, plans and challenges" involving 16 representatives from the State Governments of Bihar, Jharkhand and UP and two officers from Directorate, NMCG was conducted.

Workshop 'Audit of National Mission for Clean Ganga'

Other Training Programmes and Workshops at iCED

A National Training Programme on Audit of Bio-diversity, Wild-life and Forestry Issues was also conducted at iCED during the previous quarter from 17 to 21 April, 2017. A total of 40 participants including 8 IA&AS officers participated during the training programme. This programme was conducted keeping in view requests received from various field offices conducting audit on the topic during 2017 – 18.

iCED also conducted following NTPs during the quarter:

- National Training Programme on Audit of Waste Issues from 1 – 5 May 2017.
- National Training Programme on Environmental Audit of Mining and other extractive industries from 29 May – 2 June 2017.

NTP on Audit of Bio-diversity, Wild-life and Forestry Issues

The iCED has been involved in capacity building for Sustainable Development Goals. The mid-term review Workshop on All – India Performance Audits on following topics were conducted at iCED during this quarter:

- National Rural Drinking water Programme (NRDWP
- Prime Minister Swasthya Suraksha Yojana (PMSSY)
- Accelerated Irrigation Benefit programme (AIBP) and national Projects

➢ **Vijendra Tanwar**

II. State in Focus: Sikkim

Sikkim is a very small hilly state (7096 sq. Km) in the Eastern Himalayas, extending approximately 114 Km from north to south and 64 Km from east to west, surrounded by vast stretches of Tibetan Plateau in the North, Chumbi Valley of Tibet and the kingdom of Bhutan in the east, State of West Bengal in the south and the kingdom in Nepal in the west.

The state being a part of inner ranges of the mountains of Himalayas has no open valley and no plains but carried elevations ranging from 300 to 8583 M above Mean Sea Level consisting of lower hill, middle and higher hills, alpine zones and snow bound land, the highest elevation 8583 Mtrs. being the top of the Mt. Kangchendzonga.

The climate of the state has been roughly divided into the tropical, temperate and alpine zones. For most of the period in a year, the climate is cold and humid as rainfall occurs in each month. The area experiences a heavy rainfall during Monsoon due to its proximity to the Bay of Bengal. The rainfall in north district is comparatively less than of the other districts. The general trend of decrease in temperature with increase in altitude holds good everywhere. Pre-monsoon rain occurs in April-May and monsoon (south-west) operates normally from the month of May and continues up to early October.

Sikkim is a multi-ethnic state. Broadly, the population can be divided into tribal and non-tribal groups. Lepchas, Bhutias, Sherpas are categorized as Scheduled Tribes. As per details from Census 2011, Sikkim has population of 6.11 Lakhs. The total population growth in this decade was 12.89 percent while in previous decade it was 32.98 percent. The population of Sikkim forms 0.05 percent of India in 2011.

Source:
http://sikkim.nic.in/sws/sikk_geo.html

(1) Environment Scenario

(a) Forests

As per Government of India's Forest Survey Report 2015, total recorded forest area in the state is 5841 sq. km., of which 5452 sq. km. is reserved forest and 389 sq. km. is protected forest, thus constituting 82.31% of the geographical area of the state and 0.76% of India's forest area.

Forest is one of the richest natural resources of Sikkim. With luxuriant forest abounding in all parts of state, Forestry has been the major land use in the State. Forest of Sikkim may be classified into the following types - East Himalayan Sal, East Himalayan Moist Mixed Deciduous Forest, East Himalayan Subtropical Wet Hill Forest (25.15%), Buk Oak Forest (24.78%), East Himalayan Mixed Coniferous Forest, Montane Bamboo Brakes, East Himalayan Sub-Alpine Birch / Fir Forest (27%), Rhododendron Scrub (Birch/Dwarf) and Plantation.

The main reasons of decrease in forest cover are road construction, shifting cultivation and landslides.

Source: http://fsi.nic.in/isfr-2015/isfr-2015-forest-and-tree-resources-in-states-and-union-territories.pdf , http://www.sikkimforest.gov.in/Forest.htm)

(b) Biodiversity

India is recognized as one of the 12 mega diversity centres of the world. Out of the 18 Biodiversity hot-spots in the world, India owns 2, namely the Western Ghats and the Eastern Himalayas. Sikkim covering just 0.2 % of the geographical area of the country has tremendous biodiversity and has been identified as one of the HOT-SPOT in the Eastern Himalayas.

- ✓ There are 10 bio-geographic zones and 25 biotic provinces - which have 16 major forests types and > 200 sub types as per
- ✓ Sikkim falls under Himalayan (2) Bio-geographic zone and Central Himalaya (2c) biotic province - having about 9 types of forests types.

The State is endowed with rich floral and faunal diversity. Species wise, the State harbours over 4500 flowering plants, 550 Orchids, 36 Rhododendrons, 16 Conifers, 28 Bamboos, 362 Ferns and its allies, 9 Tree Ferns, 30 Primulas, 11 Oaks, over 424 Medicinal plants, 144+ mammals, 550 Birds,

48 Fishes and over 600 Butterflies. While these figures are still not absolute, it may be kept in mind that this is the only mega-fauna and flora. The tremendous diversity of insects like beetles and moths as well as a host of other life forms is yet to be enumerated. Most of the high altitude medicinal plants are rare and endangered species. Sikkim also has 28 Mountains / Peaks, more than 38 Glaciers, 227 high altitude lakes / wetlands and over 104 rivers and streams. Nature has been particularly generous in her gift of sylvan treasures to the state of Sikkim. Luxuriant forest, abound in all part of state and variety of medicinal plants, herbs, shrubs, bamboos and trees growing in state is truly rich. In the forest, there are number of plants whose medicinal values have been well recognized by local people as well as by different pharmaceutical, insecticidal and perfumery sectors. Medicinal plants ought to be given the status of a "National Resources" because their sustained availability is essential to sustain one of the world's oldest medicinal traditions, a priceless legacy of the Indian people. The local inhabitants for treatment of various ailments use numerous herbal remedies. Furthermore, modern medicines owes to the flora of these mountains. Many inhabitants for treatment of various ailments use numerous herbal remedies. Many species of Himalayan origin have revolutionized the allopathic systems of medicine.

Source:
http://www.sikkimforest.gov.in/soer/Wildlife%20&%20Biodiversity.pdf

(c) Wetlands

Sikkim, a small state in the Eastern Himalayas has only natural inland wetlands belonging to the category lakes / ponds. The state has 227 high altitude lakes (wetlands) which are basically small and shallow. Most of these are fed by glaciers and considered sacred. The lakes are popularly called as Chhokha or Tso or Chhona (in Bhutia), Chho (in Lepcha) and Pokhari or Jheel or Tal (in Nepali).

North Sikkim has the highest number of wetlands in the state (135 nos.) occupying an area of 1807.50 ha. However, during pre-monsoon season the area estimated is 1592.25 ha due to freezing of many of the lakes. East and West districts have 14 and 11 wetlands occupying an area 0f 120.75 ha and 56.25 ha respectively. There is no reduction in the area during pre-monsoon seasons. In South district no wetlands could be delineated.

Majority of the wetlands in Sikkim have low turbidity (107 in post-monsoon and 60 in pre-monsoon). This is primarily due to the fact that most of these wetlands (lakes) are located in the high Himalayas and are of glaciatic origin. During the post-monsoon season, 29 wetlands exhibited moderate and 24 high turbidity.

The wetlands listed below are amongst the most productive and biologically rich ecosystems and are also amongst the most endangered:

Khecheopalri Lake: It is located at West Sikkim at an altitude of 1700 m. The lake watershed has mixed broad leaved forests and agricultural land with a total area of 12 sq. km. having two villages which includes 91 ha area specifically as the lake watershed. Significant land use cover change during past four decades has resulted in its deterioration. Heavy sediment loads have been recorded which is posing big threat.

Tsomgo (Chhangu) Wetland: It is situated at an altitude of 3660- 3700 m in an alpine area on the way to Nathula about 40 km away from Gangtok. The lake is oval in shape, about 1 km long, 22 ha in size and is considered sacred by the local people. This lake remains frozen during the winter months till mid- May. This wetland is a lake complex joined by some other water bodies Manju-I and Manju –II. It has also varied biodiversity in terms of flora and fauna. It is subjected to high influx of tourists.

Gurudongmar Wetland: It is a complex of three glacial water bodies situated in North Sikkim at an altitude of 5180 M having an area of 40 hectares. It is one of the largest lakes with 1.8 km circumference. It is a sacred water body opened for regulated tourism. It is the north flowing moraine dammed lake and one of the potentially dangerous glacial lakes in the Sikkim Himalaya. It is a pristine glacial wetland which is subjected to pressures of encroachment, siltation, thin vegetal cover, unplanned tourism. This is a typical high altitude wetland a source of fresh water.

Other wetlands are: Phedang Tso Wetland Complex, Menmoitso and Hangu Complex, Tamzey Wetland Complex and Tembao Wetland Complex.

http://www.sikkimforest.gov.in/soer/Wetlands%20of%20Sikkim.pdf

(d) Municipal Solid Waste management

Solid Waste Management is one of the essential obligatory functions of the Urban Local Bodies in India. Municipal Solid Waste and its management is a big concern for India these days. Due to rapid growth of urban population, as well as constraint in resources, the management of solid waste poses a difficult and complex problem for the society and its improper management gravely affects the public health and degrades environment. Different states in India are practicing various methods to treat and dispose the waste in the best way possible. However, due to the limited resources, the treatment and disposal of solid wastes in an effective and appropriate manner is grossly inadequate.

The Government of India, Ministry of Environment, Forests and Climate Change has framed Solid Waste Management Rules, 2016 making it mandatory for all the municipal authorities in the country and those responsible for managing the municipal solid waste in the country to implement the Rules. The Government of Sikkim has also passed numerous gazette notifications in respect to the management of Municipal Waste in the State. They are regarding making Sikkim a plastic free state, segregation of waste and handling of waste, making MG Marg a litter and spit free zone etc. Waste generation for the City of Gangtok is approximately 390 grams / capita / day. This includes all types of wastes such as domestic waste, commercial waste, construction and demolition waste, market waste, street sweepings etc. It is estimated that the waste generation per day in the Gangtok and adjoining area is approximately 45 Metric Tonne per day (MT/day).

As per CPCB Annual Review Report 2013-14, in Sikkim, 04 Municipal authorities (Gangtok, Namchi, Geyzing and Mangan) have reported during the reporting year. Gangtok Municipal Corporation is sending MSW to Martam MSWTF, but the facility is non- functional and hence, wastes are being dumped at the Martam site. However construction of sanitary landfill at existing dumpsite at Martam is underway. The project is being carried out by Urban Development and Housing Department (Govt. of Sikkim) with financial assistance from Asian Development Bank (ADB). Namchi Municipal Council District-(south Sikkim) has taken up construction of MSW treatment facility which is under construction at Sipchu (near Jorthang). The Gayzing Municipal Nagar Panchayat (West Sikkim district) also sends MSW to above facility at Sipchu. Presently, the wastes from these two municipalities are being dumped at Sipchu near Jorethang. Mangan Nagar Panchayat (North Sikkim district) has installed organic waste convertor for converting waste into compost. Monitoring the performance of waste processing and disposal facilities not carried out in any facility. Landfill sites as per provisions of these rules are under construction at sipchu (near Jorethang).

Source:

http://www.sikkimforest.gov.in/soer/Solid%20Wate%20Management.pdf

http://cpcb.nic.in/MSW_AnnualReport_2013-14.pdf

(e) Biomedical Waste Management

The revised Bio-Medical Waste Management Rules, 2016 (hereafter referred as BMW Rules) were notified under the Environment (Protection) Act, 1986 by the Ministry of Environment, Forests and Climate Change (MoEF) in the year 2016. As per these rules, State Pollution Control Boards (SPCBs) of the respective States have been notified as the 'Prescribed Authority' for overall enforcement of the said Rules. As per Rule 10 of the BMW Rules, SPCBs are required to submit annual report information in a compiled form to the Central Pollution Control Board (CPCB), for the preceding year by 31 July of every year.

According to a CPCB report, in 2012, 208 kg / day of biomedical waste was generated out which 208 kg / day was getting properly treated. There were approximately 48 health care facilities in the state with 1292 beds.

Source: http://cpcb.nic.in/wast/bioimedicalwast/AR_2012.pdf

(f) Hazardous waste Management

As per the directives of the Hon'ble Supreme Court, all SPCBs are required to carry out inventory of hazardous waste generating units. Mizoram State Pollution Control Board have provided list of units and the quantities of wastes generated, which are likely to fall under the hazardous waste generating units category. In 2006 Mizoram reported 'NIL' hazardous waste generating units.

The State Pollution Control Board of Assam held meeting with the Northeastern state Pollution Control Boards in the month of September 2006 for development of a TSDF for the purpose of disposal of hazardous wastes generated from all the North –Eastern States.

(source: http://cpcb.nic.in/Highlights/2006/HAZARDOUSWASTEMANAGEMEN1[1].pdf)

(g) Ground Water:

The adverse impact of climate change on rainfall threatens the delicate, holistic balance that once stimulated the Himalayan ecosystem. Sikkim, too, has witnessed a change in rainfall pattern, including increased intensity of rainfall, reduction in temporal spread, and a significant fall in winter rainfall. The impact of this change on the lives of people gained wide attention during a seminar in 2008, organized by the World Wildlife Fund (WWF) on World Water Day, when a group of local women spoke about the daily drudgery caused by lack of water. The problem of water scarcity was more pronounced in South Sikkim and West Sikkim districts, which fall in rain-shadow areas and receive much less rainfall than other districts. According to the Sikkim First, an economic and political journal, about 65,000 (nearly 80%) of the state's rural households depend on springs for drinking water and irrigation. Recognising the urgent need for ensuring water security, the Rural Management and Development Department (RMDD), Government of Sikkim (GoS), conceptualised the Dhara Vikas initiative to revive the state's dying lakes, springs and streams. Estimates suggest that in mountainous terrain less than 15 per cent rainwater percolates down to recharge springs, while the rest is lost as surface water. The core thrust of Dhara Vikas is to catch this runoff water and use it to recharge groundwater sources.

Dhara Vikas is an innovative programme to revive and maintain drying springs in the north-eastern state of Sikkim. A robust climate adaptation strategy for drought-prone districts, Dhara Vikas (meaning, spring-shed development) is helping to alleviate the problem of rural water scarcity by reducing surface runoff of rainwater and allowing more water to percolate down to recharge underground aquifers, which, in turn, ensures

increased discharge from springs. Besides its significant impact on crop patterns and yields, the programme has also worked on developing a village spring atlas and a water source atlas for the state. Water access to the population through this initiative has also led to improved sanitation practices.

Source:

http://niti.gov.in/writereaddata/files/bestpractices/Dhara%20Vikas%20Creating%20water%20security%20through%20spring-shed%20development%20in%20Sikkim.pdf

(h) 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. To prevent, control and abate air pollution in the country, the Government of India enacted Central legislation called the Air (Prevention & Control of Pollution) Act, 1981 (referred to as the Air Act, 1981). Every polluting industry must obtain a consent from the State Pollution Control Board for the discharge of air pollutants in any form through chimney or otherwise. The State Board may lay down suitable conditions while giving consent to discharge air pollutants in the light of emission standards developed by the Central Board, subsequently notified through the rules framed under the Environment (protection) Act, 1986 Rules.

Central Pollution Control Board initiated National Ambient Air Quality Monitoring (NAAQM) programme in the year 1984. The Sikkim State Pollution Control Board (SPCB) has a regular Ambient Air and Water Quality Monitoring Programme to assess the status of pollution in the natural environment. These monitoring programme are funded by the Central Pollution Control Board.

The air quality surveillance and monitoring is under taken to detect any deterioration in air quality arising from industrial, vehicular, residential and natural sources of pollution, as there are large seasonal variation in the concentration of various air pollutants. Air quality monitoring is the measurement of various pollutants to study the pattern and movement of air masses and deterioration of air quality. Monitoring programme helps in estimating the dynamic concentration levels of various pollutants from time to time, based on dispersal mode of original concentration at sources and at receptor end.

The programme started in Sikkim with opening of two air monitoring stations within Gangtok.

At present four parameters i.e. Respirable Suspended Particulate Matters (RSPM), Suspended Particulate Matters (SPM), Sulphur Dioxide (SO2) and Nitrogen Dioxide (NO2) are measured for 24 hours twice a week. Monthly data is furnished regularly to Central Pollution Control Board.

As per Air Quality Index data, it was noticed that the NOx, SPM and PM10 levels at sites mainly remained within permissible limits and in few cases exceeded the prescribed limits as stipulated by Central Pollution Control Board.

Source:

http://www.sikkimforest.gov.in/soer/Enviromental%20Pollution.pdf

(2) Laws and Polices

Sikkim Pollution Control Board is entrusted to control, prevent and abate pollution of streams, wells, land and atmosphere in the state so as to protect the environment from any degradation by effective monitoring and implementation of pollution control legislations.

(3) Environment Sustainability Index (ESI) 2011

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 categorized into five groups where Sikkim falls in the group with 80-100 percentiles. This means State is most likely to remain sustainable.

➢ **Virendra Jakhar**

III. Environmental News, Snapshot and Persons

a) **Uttarakhand and Haryana declared 4th and 5th ODF States in the country: -** Under the Swachh Bharat Mission Gramin (SBM-G), rural Uttarakhand and rural Haryana have declared as the 4th and 5th Open Defecation Free (ODF) States of India. The two states joined the league of Sikkim, Himachal Pradesh and Kerala, which were the first three states to be declared ODF. Nationally, the sanitation coverage has increased from 42 per cent to over 64 per cent in two and a half years since the launch of SBM.

b) **Environment Ministry and Ozone Action, Organize First "Ozone2Climate" Technology Roadshow Post-Kigali Amendment (23May, 2017):-** In a first, Ministry of Environment, Forest and Climate Change, along with the UN Environment Ozone Action's Compliance Assistance Programme, organized an "Ozone2Climate" Technology Roadshow, post Kigali Amendment to the Montreal Protocol, on the side lines of the South Asia National Ozone Officers Annual Network Meeting – 2017 in Agra. The Technology Roadshow was organized for the first time as part of the annual network meeting for Ozone Officers of South Asia.

The Technology Roadshow showcased current refrigeration and air conditioning equipment designed to be more energy efficient, hence with a double benefit of saving money for consumers, and with a much lower impact on the environment.

c) **Over 21 lakh LED Street Lights installed across India under Street Light National Programme :-** Under the Government of India's **Street Lighting National Programme (SLNP)** over 21 lakh conventional street lights have been replaced with LED street lights across the country. The newly installed lights have led to brighter streets, feeling of enhanced safety and security among the residents and motorists. Energy Efficiency Services Limited, a Public Energy Services Company

under the administration of Ministry of Power is the implementing agency for SLNP.

The installation of LED street lights has resulted in Annual energy savings of 295 million unit kWh, avoided capacity of over 73 MW and reduction of 2.3 lakh tonnes of CO_2 annually. The project has been **implemented across 23 states and union territories**.

d) **Government Launches Energy Conservation Building Code 2017 :-** The Government of India recently launched the Energy Conservation Building Code 2017 (ECBC 2017). Developed by Ministry of Power and Bureau of Energy Efficiency (BEE), ECBC 2017 prescribes the energy performance standards for new commercial buildings to be constructed across India.

ECBC 2017 sets parameters for builders, designers and architects to integrate renewable energy sources in building design with the inclusion of passive design strategies. The code aims to optimize energy savings with the comfort levels for occupants, and prefers life-cycle cost effectiveness to achieve energy neutrality in commercial buildings.

With the adoption of ECBC 2017 for new commercial building construction throughout the country, it is estimated to achieve a 50% reduction in energy use by 2030. The Government of India recently launched the Energy Conservation Building Code 2017 (ECBC 2017). Developed by Ministry of Power and Bureau of Energy Efficiency (BEE), ECBC 2017 prescribes the energy performance standards for new commercial buildings to be constructed across India.

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With the adoption of ECBC 2017 for new commercial building construction throughout the country, it is estimated to achieve a 50% reduction in energy use by 2030. This will translate to energy savings of about 300 Billion Units by 2030 and peak demand reduction of over 15 GW in a year. This will be equivalent to expenditure savings of Rs 35,000 crore and 250 million tonnes of CO2 reduction.

e) **Government to implement India's first Rural LED Street Lighting Project in Andhra Pradesh :-** Government of India, through the Energy Efficiency Services Limited (EESL) under the Ministry of Power, would be retrofitting 10 lakh conventional street lights with LED lights in Gram Panchayats of 7 districts in Andhra Pradesh. This is the first project for rural LED street lighting in the country under the Government of India's Street Lighting National Project (SLNP).
This replacement drive in rural areas will help the gram panchayats to cumulatively save approximately 147 million units of electricity annually and lead to reduction of 12 crore tonnes of CO2.

f) **Cabinet approves Raising of Bonds of Rs. 2360 crores for Renewable Energy :-** Giving boost to infrastructure in renewable sector and facilitate achievement of ambitious targets for the renewable energy sector the Union Cabinet has given its approval to Raising of Bonds of Rs. 2360 crores for Renewable Energy. These Bonds would be raised by the Ministry of New & Renewable Energy (MNRE) through the Indian Renewable Energy Development Agency (IREDA) during the 2017-18. These funds will be used by MNRE in the approved programmes / schemes for solar park, green energy corridor, generation-based incentives for wind projects, CPSU and defence solar projects, viability gap funding for solar projects, roof-top solar, off-grid / grid-distributed and decentralized renewable power, investment in corporations and autonomous bodies etc.

g) **Government launches 'Segregation of Municipal Waste at Source Initiative for NCR':-** On the occasion of World Environment Day government launched a campaign on source segregation of municipal waste for National Capital Region (NCR).

The incorrect disposal and burning of solid waste results in emission of climate change causing Greenhouse gases like Methane and Carbon Dioxide to the tune of 12.69 million tonnes of Carbon Dioxide in the country per year. A recent study has revealed 15 diseases, such as Hepatitis, Cholera and Malaria, caused due to the improper solid waste management.

Number of policy interventions have been introduced by the Government to encourage processing of municipal solid waste to compost and energy. To promote conversion of 'Waste to Energy', purchase of electricity so generated has been made mandatory by DISCOMs and to promote 'Waste to Compost', a subsidy of Rs 1,500 per ton will be provided by the Government.

h) **Chitale Committee recommends several measures for Desiltation of Ganga:-** The committee constituted in July 2016 by the Ministry of Water Resources, River Development and Ganga Rejuvenation to prepare guidelines for desiltation of river Ganga from Bhimgauda (Uttarakhand) to Farakka (West Bengal) under chairmanship of Shri Madhav Chitale (Expert Member, NGRBA) on Desiltation of Ganga has recommended a slew of measures which include study of reach wise sediment transport processes along with establishing annual sediment budgets to guide de-silting activities, Preparation of annual reports (Sand registry) describing the previous de-silting/ dredging activity and a technical institute may be entrusted to conduct the sediment budget, morphological and flood routing studies that would examine and confirm the necessity of the de-silting of the reach under consideration.

i) **India Shows the Way to the World in Fight Against Climate Change through Launch of 'UJALA – UK' in London:-** World's largest efficient lighting programme, UJALA – UK (UK Joins Affordable LEDs for All) by Energy Efficiency Services Ltd. (EESL) was launched in London, United Kingdom.

Even in the Developed countries like the US and Europe, there is a great potential for incorporating energy efficiency measures like the EESL LED programme, especially looking at the climate change scenario in the present context. India's share in the Global LED market has increased from a mere 0.1% a few years back to around 16 per cent today.

As India moves towards becoming a 100 per cent LED Nation, the potential savings would be around 112 billion units, in other terms reducing carbon dioxide emissions by nearly 79 million tonnes every year. Consequently, India's peak load will reduce by about 20 GW and our consumers will save around $6.5 billion worth in electricity bills annually.

j) **Air pollutants on solar panels reduce power generation by 17 per cent :-** Particulate matter — dust, black carbon and organic carbon from biomass burning and fossil fuel — deposited on solar panels and present in the ambient air is responsible for about 17 per cent reduction in solar power generation in India.

This translates to the reduction of about 2 Gigawatts (GW) in solar power production for about 12 GW installed solar power capacity. The Centre has set an ambitious renewable energy target of 175 GW by 2022.

Source:http://www.thehindu.com/sci-tech/energy-and-environment/air-pollutants-on-solar-panels-reduce-power-generation-by-17/article19165729.ece

➢ **Pankaj Saini**

IV. DEVELOPMENTS AT THE CONVENTION ON BIOLOGICAL DIVERSITY (THIRTEENTH MEETING) FROM 4 – 17 DECEMBER 2017 AT CANCUN, MEXICO

The Convention on Biological Diversity is an international treaty for the conservation of biodiversity, the sustainable use of the components of biodiversity and the equitable sharing of the benefits derived from the use of genetic resources. With 196 Parties so far, the Convention has near universal participation among countries. The Cartagena Protocol on Biosafety and the Nagoya Protocol on Access and Benefit Sharing are supplementary agreements to the Convention.

The Cartagena Protocol on Biosafety to the Convention on Biological Diversity is an international agreement which aims to ensure the safe handling, transport and use of living modified organisms (LMOs) resulting from modern biotechnology that may have adverse effects on biological diversity, taking also into account risks to human health. It was adopted on 29 January 2000 and entered into force on 11 September 2003.

The Nagoya Protocol aims at sharing the benefits arising from the utilization of genetic resources in a fair and equitable way, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies. It entered into force on 12 October 2014 and to date has been ratified by 93 Parties.

The convention on Biological Diversity (Thirteenth Meeting), the Cartagena Protocol on biosafety (Eighth meeting) and Nagoya Protocol on access to genetic resources and the fair and equitable sharing of benefits arising from their utilization(second meeting) took place from 4 to 17 December 2017 at Cancun, Mexico.

The UN Biodiversity Conference resulted in significant commitments for action on Biodiversity. Agreements were reached on actions to integrate biodiversity in forestry, fisheries, agriculture, tourism sectors, achieve the 2030 Agenda on Sustainable Development, implementation of the Aichi Biodiversity Targets, including mainstreaming capacity-development and mobilization of financial resources as well as actions on specific themes including protected areas, ecosystem restoration, Sustainable wildlife management and others.

Parties agreed to advance mainstreaming biodiversity, the main theme of the meeting proposed by the Government of Mexico and use an integrated approach that would promote not only cross-sectoral linkages, but also linkages between efforts to implement national biodiversity strategies and action plans and Sustainable Development Goal strategies and plans.

Capacity-building

The Parties agreed on an action plan (2017-2020) that will enhance and support capacity-building for the implementation of the Convention and its Protocols based on the needs of Parties with a focus on strengthening the implementation of the Strategic Plan for Biodiversity 2011-2020 and its Aichi Biodiversity Targets. For the Protocols, emphasis will be on supporting the implementation of the Strategic Plan for the Cartagena Protocol on Biosafety, and promoting the universal ratification of the Nagoya Protocol and the development of measures to ensure that it is fully operational, consistent with national legislation (Aichi Target 16).

The Parties also welcomed the Bio bridge Initiative established at COP-12 by the Government of the Republic of Korea to contribute to the implementation of the Strategic Plan for Biodiversity 2011-2020 and achievement of the Aichi Biodiversity Targets.

Pollinators

The COP encouraged Parties, other Governments, relevant United Nations and other organizations, as well as multilateral environment agreements, and stakeholders to use the assessment, to help guide efforts to improve conservation and management of pollinators, address drivers of pollinator declines, and work towards sustainable food production systems and agriculture.

Protected Areas

A Group of Like Minded Megadiverse Countries pledged to achieve Aichi target 11. Mexico, announced the establishment of a marine protected area that would contribute in achieving 23 per cent of marine areas within national jurisdiction under protection, which is more than double than that of global target of 10 per cent.

The COP welcomed the progress towards achievement of Aichi Biodiversity Target 11 and recognized how this will contribute to the implementation of other Aichi Biodiversity Targets, the Sendai Framework for Disaster Risk Reduction 2015-2030, relevant targets of the Sustainable Development Goals, and Articles 5,7and 8 of the Paris Agreement.

Restoration

COP-13 adopted a short term plan of action on ecosystem restoration, as a contribution to reversing the loss of biodiversity, recovering connectivity, improving ecosystem resilience, enhancing the provision of ecosystem services, mitigating and adapting to the effects of climate change, combating desertification and land degradation, and improving human well-being while reducing environmental risks and scarcities.

The Secretariat also reported on advancements under the Forest Ecosystem Restoration Initiative launched by the Republic of Korea at COP-12.

Marine Agenda

A new set of areas described as ecologically or biologically significant marine areas (EBSAs) in the Seas of East Asia, the North-West Indian Ocean and the North- East Indian Ocean was discussed. The means to enhance scientific methodologies and approaches to the description of EBSAs was discussed. Parties adopted a voluntary specific work plan to maintain and enhance the resilience of ecosystems in cold water areas within the jurisdictional scope of the Convention. Parties took note of voluntary practical guidance on preventing and mitigating the impacts of marine debris on marine and coastal biodiversity and habitats.

Biodiversity and climate change

COP-13 adopted a decision that welcomes the Paris Agreement and encourages Parties and other Governments, to fully take into account the importance of ensuring the integrity of all ecosystems and to take biodiversity into consideration when undertaking climate change mitigation, adaptation and disaster risk reduction measures.

Climate-related geoengineering

The Conference of the Parties reiterated the importance of the precautionary approach in relation to climate-related geoengineering, the importance of reducing anthropogenic emissions by sources and by increasing removals by sinks of greenhouse gases under the United Nations Framework Convention on Climate Change, and the need for more research and knowledge-sharing in order to better understand the impacts of climate-related geoengineering.

Article 8 (j)

COP-13 took considerable steps to ensure that traditional knowledge relevant for conservation and sustainable use is protected and its use is encouraged with the consent of indigenous peoples and local communities.

Guidelines for the repatriation of traditional knowledge were adopted for traditional knowledge that will assist Governments in developing mechanisms at the national level to guard against the unlawful appropriation of traditional knowledge.

Financial Mechanism

The COP adopted strategic guidance for the next 4-year replenishment period of its financial mechanism, the Global Environment Facility. The four-year framework of programme priorities adopted by the COP guides the GEF in its development of its biodiversity strategy and the associated funding priorities for the 2018-2022 period.

Resource Mobilization

The COP urged Parties to increase their efforts to achieve the targets, including the doubling of total biodiversity-related international financial resource flows to developing countries.

Cartagena Protocol on Biosafety COP-MOP 8 adopted operational definitions of unintentional transboundary movements and illegal transboundary movements under the Cartagena Protocol. It was agreed to prioritize, operational objectives on biosafety legislation, risk assessment, risk management, detection and identification of LMOs, and public awareness, education and training to implementation the Cartagena Protocol. They also agreed to extend the Online Forum on Risk Assessment and Risk Management of LMOs.

COP-MOP 8 also agreed-

- to make available information in the Biosafety Clearing-House (BCH) with regards to transit and contained use of LMOs.
- to extend the Programme of Work on public awareness, education and participation until 2020 with priority areas/activities.
- to migrate the BCH to a new platform to integrate the clearing-houses of the Convention and its Protocols; Extend the mandate of the expert group(AHTEG) on socio-economic considerations;
- to establish expert groups, as appropriate, to provide advice on one or more scientific and technical issues.

Nagoya Protocol on Access and Benefit-Sharing

The conference on Nagoya Protocol was also held from 4 to 17 December 2016 at Cancun, Mexico. It adopted 14 decisions wherein the Governments agreed to a series of actions to further bolster the implementation of the Nagoya Protocol on Access and Benefit-sharing, which entered into force in 2014.

During their second meeting held as part of the UN Biodiversity Conference, Parties considered progress made thus far, as well as the next steps to be taken to support the implementation of the Protocol. Among the decisions adopted at this meeting are progress made towards Aichi Biodiversity Target 16, the Access and Benefit-sharing Clearing-House, measures to assist in capacity-building and cooperation with other international organizations or initiatives.

The Parties to the CBD (COP13) and the Parties to the Protocol (COP-MOP 2) addressed the issue of digital sequence information on genetic resources and decided to consider, at their next respective meetings, any potential implications of the use of this information for the objectives of the CBD and the Protocol, respectively.

Decisions were also taken on Synthetic Biology, Invasive Alien Species, Sustainable Wildlife Management and others topics under the Convention and its Protocols.

Conclusion and post Cancun expectations

As per Conservation International the host country of Mexico did an excellent job in highlighting sectors that depend on biodiversity to remain productive, including in their ministerial-level Cancun Declaration. Despite these efforts it remains uncertain whether Parties will take notable steps to increase integration in these sectors, particularly in the face of limited resources. Conservation International feels that countries still have the opportunity to increase their ambitions to achieve the Aichi Targets in next four years. Current levels of effort will not be sufficient to achieve all the Targets, so monitoring and supporting country efforts toward the integration discussed during COP 13 will be crucial to ensure this level of effort is raised. In part, success will depend on finding effective ways to align biodiversity goals with goals under the Paris Climate Agreement and Sustainable Development Goals, allowing for these aims to be achieved together.

Details are available on the website of the Convention at: https://bch.cbd.int/protocol/background/

www.cbd.int/cop2016

https://www.cbd.int/abs/about/

http://www.conservation.org/publications/Documents/CI_COP-13-Cancun-Analysis.pdf

➢ **Manoj Kumar**

V. Democratic Youth Federation of India Vs Union of India and Others (2011)

(1) Background

The Democratic Youth Federation of India (DYFI), the youth wing of Communist Party of India (Marxist), in 2011, had filed a writ petition in the Supreme Court, highlighting the plight of victims of Endosulfan in northern part of Kerala.

(2) Judgement dated 13-05-2011

The Supreme Court moved this Writ Petition in public interest highlighting the harmful effects caused by the continued use of Endosulfan on human beings and on the environment. Endosulfan was being used as a pesticide for the production of crops like paddy, sugarcane, cotton, mango, cashew etc. Few studies had been conducted in this area and its adverse effects on human health and environment had been reported. Some of the studies also indicated that Endosulfan is significantly associated with Neuro-behavioral disorders, Cognitive disorders, Hydrocephalus, Mental Retardation, Cortical blindness, Seizure disorders, Parkinson's disease etc.

The Court banned the manufacture, sale, use and export of Endosulfan throughout the country, citing its harmful health effects.

The ban was to remain effective till the time the joint committee formed under the aegis of the Indian Council of Medical Research (ICMR) and the Agriculture Commissioner, submits its report to the court about the harmful effect of the widely used pesticide. The report was expected to be filed within eight weeks.

Apart from conducting a pan-India study of the health impacts of Endosulfan, the court also ordered the government to come up with safer and cheaper alternatives of the pesticide and decide on how existing stocks had to be destroyed. A decision to lift the ban was to be taken if Endosulfan comes clean in the ICMR study.

The Union government agreed with the need of a blanket ban but suggested waiting till the ICMR report comes. To this, chief justice Kapadia said, "I cannot allow the use of Endosulfan for even seven weeks. Effect on one child's health is also crucial and I can't have that on my head." The DYFI had supported their petition with three reports indicting Endosulfan: the 2002 report on the

health impact of Endosulfan on Padre village prepared by the National Institute of Occupational Health (NIOH), the 2003 Kerala government report on the health hazards of aerial spraying of Endosulfan, and the latest report prepared by the Government Medical College in Calicut.

Gopal Subramaniam, the Solicitor General representing the Union government, expressed concern on the impact an immediate ban would have on the production of kharif crops, especially paddy and cotton. In response, the bench wanted to know about the alternatives of Endosulfan. The government ceded it does not have adequate information on the alternatives but knows that Endosulfan is cost effective. The bench countered saying, money can't be the only yardstick to decide this matter and if Kerala's kharif crops could do without Endosulfan so can the rest of the country's.

The counsel for the Endosulfan manufacturers present in the courtroom cited examples of Endosulfan being sprayed across the world. Justice Swatantar Kumar brushed aside the statement and said it did not matter what was being done across the world. The Endosulfan manufacturers persuaded further that Endosulfan is a registered pesticide, they have a license to sell it and it is being used for the last 40 years. The Endosulfan manufacturers added that none of the farmers had ever complained, to which the chief justice assured that farmers never complain and it the right of the Supreme Court to take this up under the precautionary principle. He added that just because a blind eye was turned towards the impact of Endosulfan for the last 40 years does not mean that the trend has to continue. The chief justice also chided the Endosulfan manufacturers for lacking Corporate Social Responsibility and ignoring the impact on human health.

The pesticide manufacturers and the Union government took refuge in a 2003 report by the O. P. Dubey committee that was mandated to look into Kerala's Endosulfan tragedy and the findings of the NIOH report. In an expose by Down To Earth, the O P Dubey committee report incidentally was found to be manipulated, facts distorted and dissent voices suppressed [1] . Nevertheless, the pesticide manufacturers cited from the Dubey committee report that had taken data from different state agricultural universities and concluded that there were no health impacts of Endosulfan except in Kasaragod where the pesticide was aerially sprayed. They added that one NIOH study could not be the basis for a countrywide ban.

The bench overruled, stating that just as the NIOH study cannot be a basis for a country wide ban, the Dubey committee report could not be the basis for allowing Endosulfan throughout the country. They further added that an all India study cannot be based on data from agricultural universities and it had to be a field study.

The pesticide manufacturers did try to sneak out permission for exports but were unable to submit export orders to the bench and so it was ruled that exports too will have to be banned. Deepak Prakash, advocate for the DYFI, said after the victory that it was a smooth sailing for the petitioners as the bench prima facie supported the all India ban.

(3) Advice of the expert committee to review the use of pesticides

In February 2016, a committee, set up under the chairmanship of Anupam Verma, Former Professor, Indian Agriculture Research Institute (IARI), to review the continued use of 66 pesticides that have been barred / restricted for use in farming in other countries, recommended a ban on 13 'extremely hazardous' pesticides, phasing out of six 'moderately hazardous' ones by 2020, and review of 27 pesticides in 2018. The six pesticides suggested for phasing out by 2020 were: alachor, dichorvos, phorate,

[1] 'What Dubey did', Down To Earth, August 1631, 2005.

phosphamidon, triazophos and trichlorfon. The Verma panel did not review the use of Endosulfan, as it was being examined by the Supreme Court. The Government registers pesticides after a detailed evaluation of efficacy of the product and safety to human, animal and environmental health. Technical reviews are carried out from time to time to assess the safety of pesticides. The Committee further recommended continuation of ban on 1 pesticide and did not offer any assessment of Endosulfan which was sub-judice. The Verma Committte recommended continued use of 18 pesticides.

Following the panel recommendations, the Registration Committee (RC) of the Central Insecticides Board, at a special meeting held on December 22, 2015, suggested that "each pesticide should be reviewed in 10 year intervals after registration".

The committee, headed by J. S. Sandhu, Deputy Director General (Crops Science), also recommended certain deadlines, failing which registration of pesticides could be cancelled, according to the minutes of the meeting uploaded on the insecticide board's website.

"All the deemed to be registered pesticides (DRP) need to be re-evaluated for their bio-efficacy and residue data against major target pests as per approved label claims, and baseline toxicity data may be generated by the registrants by December 2017; otherwise the Certificate of Registration will be treated as deem(ed) cancelled w. e. f. 1st January 2018," it said.

Welcoming the development in a Facebook post, the Alliance for Sustainable and Holistic Agriculture, an umbrella of 400 organisations from over 22 states that is pitching for organic farming, said: "This is good. But we certainly want more. We know farming can be done without pesticides. Why register so many chemicals in the first instance?" In Parliament, the Centre was asked whether it was aware that chlorpyrifos, phorate, monocrotophos and neonicotinoid were still being imported for use in the agriculture sector. These insecticides are banned or restricted in their countries of origin as they endanger human health, soil, livestock and the environment.

Ministry response

In a written reply to the Lok Sabha question on December 8, 2015, Agriculture Minister had said that the percentage of spice samples above the maximum residue level of pesticides had decreased in the last years, whereas, for the same period, the percentage of vegetable samples above the maximum residue level had remained stagnant. The Minister added that the percentage of samples of fruits above maximum residue level had increased from 1.2 per cent in 2012-13 to 1.8 per cent in 2014-15.

(4) Steps to Tackle Banned Pesticides

Information given by the Minister of State for Agriculture and Farmers Welfare on 19-07-2016 in a written reply to a Lok Sabha question:-

The Ministry of Agriculture and Farmers Welfare is implementing a program for "Monitoring of Pesticide Residues at National Level" (MPRNL) under which samples of agriculture commodities are collected and analyzed for the presence of pesticide residues. In the previous year , 2.9 per cent of all samples of commodities contained pesticide residues above the Maximum Residues Limits (MRLs) fixed by the Food Safety and Standards Authority of India. No residues of banned pesticides have been detected in commodities monitored under this program.

Central Integrated Pest Management Centres (CIPMCs) under the Department of Agriculture, Cooperation and Farmers Welfare conduct Farmers Field Schools to sensitize farmers regarding safe and judicious use of pesticides, use of bio-pesticides etc. A 'Grow Safe Food' campaign has also been initiated carrying the message of safe and judicious use

of pesticides to farmers and other stakeholders. Package of practices for control of pests and diseases in 79 crops have been revised to include techniques to reduce dependence on chemical pesticides and encourage use of bio-pesticides and other alternative plant protection measures. Under Soil Health Management Scheme, financial assistance is provided to States for imparting training and demonstration to farmers on balanced use of fertilizers.

Further, the Government is encouraging establishment of Bio-fertilizer units by providing financial assistance to State Government up to a maximum limit of Rs 160.00 lakh per unit. Financial assistance is also provided to farmers / Individual / Private agencies @ 25 per cent of total financial outlay or Rs. 40 lakh, whichever is less under Capital Investment Subsidy Scheme (CISS) through National Bank for Agriculture and Rural Development.

(5) Recent Judgement in the case

Vide order dated 10-01-2017, the Supreme Court has directed the Kerala government to release Rs.5 lakh each as compensation to all Endosulfan victims, within three months. The bench headed by Chief Justice J. S. Khehar also observed that it shall be open to the state government to recover the compensation amount either from the concerned industry or from the Government of India. The court also directed the state government to take into consideration the feasibility of providing medical facilities / treatment for life-long health issues, arising out of the effects of Endosulfan, keeping in mind that there seems to be a large number of such affected persons.

Significance:

Perusal of the residue data on pesticides in samples of fruits, vegetables, cereals, pulses, grains, wheat flour, oils, eggs, meat, fish, poultry, bovine milk, butter and cheese in India indicates their presence in sizable amounts.

The Food Safety and Standards Act (FSSA), 2006 and regulations below it viz. Food Safety and Standards Regulations, 2010 authorizes the Food Safety and Standards Authority of India (FSSAI) to "specify the limits for use of food additives, crop contaminants, pesticide residues, residues of veterinary drugs, heavy metals, processing aids, mycotoxins, antibiotics and pharmacological active substances and irradiation of food."

The manufacture, sale, import, export and use of pesticides are regulated by Ministry of Agriculture through the Insecticides Act, 1968 and the Insecticides Rules, 1971.

Unlike in other countries where registered pesticides automatically come up for periodic reviews for their efficacy and safety (as in the case of some Scandinavian countries) or unlike in countries like Syria where a pesticide is automatically banned in the country if it is prohibited in two other countries, India goes through long processes of review and prohibition, usually through committees set up for the purpose.

The recent judgement of Supreme Court regarding compensation for the victims and the previous developments during ban of Endosulfan is a good case study in understanding the risks associated with use of agrochemicals and pesticides in India. However, with the implementation of new laws, initiate to review the continuation of pesticides in India otherwise banned in other countries of the world and increased public awareness should help avoid any such disasters in future.

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➢ **P. S. Nathawat**

VI. Discussion on Environmental Impact Assessment Notification 2006 and recent amendments

Background Article 48 A of the Constitution of India brings out that the State shall endeavor to protect and improve the environment and to safeguard the forests and wildlife in the country. The impact of efforts to achieve rapid economic growth and development and continuing pressures of demand generated by those sections of society who are economically more advanced and impose great strain on the supply of natural resources, has been recognized as one of the environmental problems in India. In recognition of the need for environmental protection, the Ministry of Environment, Forests and Climate Change (the Ministry) has taken various regulatory and promotional measures.

Environment Impact Assessment (EIA) is a process used to identify the environmental impacts of a project prior to its approval. EIA systematically examines both beneficial and adverse consequences of the proposed project and ensures that the environmental impact and the mitigation measures are taken into account during the project design. There are many benefits of considering environmental effects and mitigation early in the project planning cycle, such as protection of the environment, optimum utilization of resources and saving overall time and cost of the project. Properly conducted EIA also lessens conflicts by promoting community participation, informs decision-makers, and helps lay the base for environmentally sound projects. The Ministry made EIA and Environmental Clearance (EC) mandatory for certain development projects through its notification of Environmental Clearance and Post Clearance Monitoring 2 January 1994 under the Environment (Protection) Act, 1986. Subsequently, keeping in view the experience gained in EC process over a period of one decade, the Ministry brought out EIA Notification in September 2006. EIA exercise is to be carried out before any project is undertaken. The process of granting EC for the projects has been defined in EIA Notification 2006. This comprises of four stages namely Screening, Scoping, Public Consultation and Appraisal, all of which may not apply in each cases.

The EIA Notification 2006 has classified projects under two Categories - A and B, based on the spatial extent of potential impacts and potential impacts on human health and natural and manmade resources, as given in the Schedule of the EIA Notification. New projects or activities and expansion and modernization of existing projects or activities, listed in the Schedule to EIA Notification 2006, require prior EC from the concerned regulatory authority, which is MoEF&CC for projects falling under Category 'A' in the Schedule and at State level, the State Environment Impact Assessment Authority (SEIAA) for projects falling under Category 'B' in the said Schedule. The Ministry grants EC on the recommendations of sector specific Expert Appraisal Committees (EACs). The various specialized EAC constituted by the Ministry are

(a) Coal Mining;

(b) Industrial Projects;

(c) Infrastructure and Miscellaneous Projects and Coastal Regulation Zone (CRZ);

(d) Mining Projects;

(e) New Construction Projects and Industrial Estates;

(f) Nuclear Projects;

(g) River Valley and Hydroelectric Projects; and

(h) Thermal Projects.

The SEIAA makes its decision on the recommendations of a State or Union Territory Level Expert Appraisal Committee (SEAC). The SEAC at the State or the Union Territory level is constituted by the Central Government in consultation with the concerned State Government or the Union Territory Administration, with identical composition. In the absence of a duly constituted SEIAA or SEAC, a Category 'B' project is appraised at Centre as Category 'B' project. These Committees are constituted by the Central Government and consist of professionals and experts in the field of Environment Quality, Sectoral Experts in Project Management, EIA Process Experts, Risk Assessment Experts, Life Science Experts in Floral and Faunal Management, Forestry and Wildlife Experts and Environmental Economics Experts with experience in project appraisal, fulfilling the eligibility criteria laid down in the EIA Notification.

The EIA Notification 2006 was issued by the Ministry under the provisions of Section 3 of Environment (Protection) Act 1986. The changes in the notification was a legal process which also require opinion of the stakeholders and Gazette notification. The Ministry issues Office Memoranda (OMs) from time to time to explain the office procedure or to define processes where there was no express provision or clarity in the EIA notification. The Ministry had issued 181 OMs till October 2014 relating to EIA notification.

The Ministry vide its OMs dated 12 December 2012 and 27 June 2013, had provided for considering the applications of the project where construction had been done / started without prior EC. The purpose of EIA is to identify, examine, assess and evaluate the likely and probable impacts of a proposed project on the environment and thereby, to work out remedial action plans to minimize these adverse impacts on the environment. All this is required to be done at a stage before the commencement of the project. The EIA notification does not visualize such examination post-commencement and upon completion of the project, in relation to the covered projects and activities. The OM issued by the Ministry was challenged and was quashed by National Green Tribunal in July 2015, with the observation that these OMs were ultra vires the provisions of the Act of 1986 and the Notification of 2006 and suffered from the infirmity of lack of inherent jurisdiction and authority. It was stated that no procedure could be laid through OMs for post environment clearance. It was cited that O.M. cannot amend a notification, which is a subordinate legislation. High Court of Jharkhand also had passed an order dated the 28 November, 2014, declaring some of the provisions of said OM dated 12.12.2012 void and had further held that action for alleged violation would be an independent and separate activity.

The Ministry in modification to its previous OMs issued new notification S.O 804 (E) dated 14.03.2017 which has provided a six months window, as a onetime opportunity to the units, which have not obtained prior environmental clearance to apply for the same. The Ministry and State Environment Impact Assessment Authorities (SEIAAs) have been receiving proposals under the Environmental Impact Assessment (EIA) Notification, 2006 for grant of Terms of Reference (ToR) & Environmental Clearance (EC) for projects which have started the work on site, expanded the production beyond the limit of environmental clearance or changed the product mix without obtaining prior EC.

This new OM intends to bring such projects and activities in compliance with the

environmental laws at the earliest point of time, rather than leaving them unregulated and unchecked. As such units are more polluting if they are not brought under the environment compliance regime, but the process for such violators has to be stringent and punitive. The salient features of notification are as follows:

- This is a one-time opportunity for six months to apply for environmental clearance to units which are in violation on date of the notification i.e. 14.03.2017.
- The States / SPCBs will take action under Section 19 of the E (P) Act, 1986 for violation.
- All the cases of violation, irrespective of category, will be appraised as category "A" projects by respective sector Expert Appraisal Committee (EAC) at Central level. So, violation cases can only be appraised at the level of Ministry.
- The EAC will first examine the proposal with an angle that the project or activity is a permissible activity at the site on which it has come up. If it is not then the recommendation of EAC will be for closure.
- Respective EAC will prescribe the specific ToR for assessment of ecological damage, Remediation Plan and Natural and Community Resource Augmentation Plan (NCRAP) in addition to general ToR required under EIA Notification, 2006 for undertaking EIA/EMP.
- The idea is to take away the economic benefit (if any) derived by the company due to violation and pay for the remediation of damage caused due to violation.
- The plan shall be prepared as an independent chapter in the EIA report by the accredited consultants. The collection and analysis of data for assessment of ecological damage shall be done by an environmental laboratory duly notified under E (P) Act, 1986 / accredited by NABL/CSIR.
- The EAC shall stipulate the implementation of EMP, comprising remediation plan and NCRAP corresponding to the ecological damage assessed and economic benefit derived due to violation as a specific condition of EC.
- The project proponent will also be required to submit a bank guarantee equivalent to the amount of remediation plan and NCRAP with the SPCB.
- No consent to operate or occupancy certificate will be issued till the project is granted the EC.

Besides the issue of regularizing projects that have violated laws and that operate without environmental safeguards, the notifications is also being criticized[2] for the process of regularization laid out in the notification shields them from public consultation procedures and denies a hearing to those who have suffered public harms on account of these violating units. The Ministry has so far not put out any list of violating projects that could apply under this scheme which has following areas of concerns:

Notification: The cases of violating units will be brought to the Expert Appraisal Committee (EAC) at the central level (irrespective of whether the project is Category A or B). The EAC will check if the project violates any legal siting norms (like forest areas and CRZ – Coastal Regulation Zone) or if the expansion can run sustainably with compliance of environmental conditions and safeguards. If the EAC finds these two aspects to be negative, then they can recommend closure.

Comment: This principle goes against the rule of law because violating units are given a chance for a back door entry. At this stage the EAC does not have enough information about the project expansion to decide whether it can run sustainably or if the siting is without

[2] http://www.cprindia.org/news/industrial-units-and-other-projects-operating-without-environmental-clearances-be-legalised

ecological and social impacts as it has no studies or information related to impacts to go by. Such information will only be provided after the decision on the project is taken by the EAC.

Notification: If the EAC decides that the project can be allowed to continue, then the project needs to undertake an Environmental Impact Assessment (EIA) based on a Terms of Reference and Environment Management Plan (EMP), and conduct an assessment of ecological damage; prepare a remediation plan; and a natural and community resource augmentation plan as an independent chapter of the EIA report. This is to be done by a National Accreditation Board for Education and Training (NABET)–Quality Council of India (QCI) certified consultant and a lab authorized by the Council of Scientific and Industrial Research (CSIR).

Comment: As per the process set up in the Notification, this EIA and EMP related steps will not have any influence on the decision of the project as the decision to legalize the project would be taken by the EAC before the EIA is drafted, as mentioned in the previous point. In this Notification, the EIA is only to determine mitigation and compensatory measures. There is no scope of a public hearing either after the EIA report is drafted as is the usual norm in the process of grant of environment clearance. So the government is offering a 'simplified' EIA process to the violator.

Notification: The EAC has to determine that these plans take into account the damage to the environment and the economic benefits gained by violating the law. This is to be done by adding conditions in the Environment Clearance (EC) letter issued to the project.

Comment: This is a form of regularizing the violation as the shortened EIA process comes after the decision to regularize the project and the EIA's only function is to provide knowledge about what kinds of conditions and safeguards need to be added to the project's EC letter. In effect, this would only offset the damage caused by the violation as opposed to putting a stop to it. Going by the track record of compliance to conditions, these new sets of conditions may also end up being only on paper. Even though there is a mention that the natural and community resource augmentation plan will be prepared, there is no process in this to speak to affected people and find out what impacts they have faced, which need remedies.

Notification: The violator has to submit a bank guarantee to the State Pollution Control Board (SPCB). The amount should be equal to the amount of the cost of the various plans (management, remediation and augmentation). The costing will be determined by the EAC. The Bank guarantee should be deposited before the EC is granted and returned after the successful implementation of the plans.

Comment: The government cannot singly determine what 'successful implementation' is. The Vapi case is a good example, where even though pollution on the ground has not reduced, and the Vapi Action Plan has not been fully implemented, the government has removed its 'critically polluted' tag, allowing for more projects to be set up there. There is no mechanism here which indicates how the SPCB and EAC will coordinate to supervise this.

Notification: The SPCB will not grant Consent to Operate or occupancy to these violating projects until the EC process is completed.

Comment: The notification says that once the violating project is identified, the state/SPCB will take action under Section 19 of the Environment (Protection) Act. This section bars the courts from taking notice of the violation until it is brought to them by the central government or a designated authority or by any person (who has given a 60 day notice to the government or designated authority).

This one-time amnesty through the latest notification has been offered by the government for units that have violated the EIA notification and set up operations without ECs until the date of this notification. Units have to apply for ECs within six months from the date of this notification. The notification does not state what will be done to violating units that do not apply for EC within this period. It also does not state if this is only a one-time amnesty or whether there will be more such opportunities and also about what will be done with units that violate EIA norms after this notification date.

Following are some other recent amendments to this notification have also been criticized on the grounds of concern for environment.

- Irrigation projects with cultural command area up to 2,000 hectares exempted from clearance
- Distance from protected areas reduced to 5 km from 10 km for projects to be treated as category A projects
- Public hearing exempted for coal-mines seeking onetime expansion up to 16 MTPA
- Project proponents are now allowed to start EIAs based on standard ToRs without waiting for grant of project-specific ToRs.
- Validity of clearances extended to seven years from 5, including those project that were already cleared Decentralization of clearance: several projects now treated as category B, to be decided by State level committees. Mining of mineral up to 5 ha to be appraised by District Level Committee.
- Several activities exempted from clearance, including dredging and de-silting activities in dams, canals etc., for maintenance purposes, construction activities involving educational institutes, industrial sheds, etc.

The Audit Report (39 of 2016) of CAG of India about Environmental Clearance and Post-Clearance Monitoring also has pointed out certain s**hortcomings** with regard to public consultation**, as mentioned below, in the EIA notification of 2006:**

a. For the commitments made in the public hearing, there was no provision that the PP would fulfil the commitments in a time bound manner.

b. There was no provision to ensure that the concerns of the local people were addressed in the final EIA report / EC letter.

c. There was no monitoring as to whether the PP fulfilled the commitments made during public hearing.

d. As per the EIA Notification of 1994, all persons including bona fide residents, environmental groups and others located at the project site/sites of displacement / sites likely to be affected can participate in the public hearing. Though, as per EIA Notification of 2006, there is no such condition but it is mentioned that there shall be no quorum required for attendance for starting the proceedings. However, to encourage participation of project affected families so as to take into consideration their views and concerns, a quorum for their participation may be necessary.

The CAG of India has recommended that the Ministry may evaluate the entire process of EIA by involving all stakeholders, following legal processes and make suitable amendments in EIA Notification 2006 rather than resorting to Office Memorandums. In the audit report there were many observations which needed improvement in implementation viz. delay of EIA processes, inconsistencies in database of Environmental Clearances, adherence with the timelines of EIA process, delay in grant of ToR, delay in scrutiny of Final EIA Report, delay in appraisal of the application by the EAC, delay in placing recommendations of EAC before the Competent Authority, delay in

conveying the EC to the applicants, delay in grant of EC, lack of cumulative impact assessment, accreditation of consultants for preparing EIA reports, Public Consultation, Non-fulfilment of the commitments made during the Public Consultation and annual Environmental Audit Report / Environmental Statement.

Significance:

The environmental assessments are an important tool for ensuring the sustainable development and is thus very crucial in environmental governance of the country. The law is still evolving but considering the concerns of stakeholders and observations of CAG it seems that the journey of environmental assessments should continue in a progressive manner so that the process becomes an assurance towards to environmental conservation and protection when we accelerate the process of rapid economic development.

- **S. Prabhakar Rao and Manoj Kumar**

VII. Performance Audit on 'Implementation of Environmental Rules and Laws by Uttar Pradesh Pollution Control Board.' (Report No. 01 of 2017)

Introduction:

Uttar Pradesh Pollution Control Board (UPPCB) set up in the year 1975 is the nodal agency of the State Government for planning, coordination, prevention and control of pollution and also protection of environment in accordance with environmental regulations. UPPCB is also entrusted with the responsibility of enforcement of the Air (Prevention & Control of Pollution) Act, 1981 and the Environment Protection (EP) Act, 1986. The Environment Acts provide UPPCB a predominant role in monitoring of compliance with the provisions of these Acts by industrial units, municipal bodies, hospitals, etc. To enable it to discharge the mandated functions effectively, UPPCB is vested with powers to obtain information from the persons in charge of any establishment; inspect and collect samples of effluents/emissions; grant/reject/withdraw consent to establish/ consent to operate of any industry, operation or process, etc.

Audit Objectives: The objectives of this Performance Audit were to assess whether:

- Proper planning has been done by the UPPCB to ensure compliance of environmental Laws and Acts;

- Financial management by UPPCB is efficient to secure optimum utilization and that mechanism for internal control was in place and functioning effectively;

- Mechanisms have been put in place by the UPPCB for effective implementation of the Water, Air, EP Acts and various Rules framed thereunder for prevention, control and abatement of pollution; and

- There is adequate mechanism for monitoring the various provisions of Air, Water, EP Acts and various Rules framed there under and as per norms of Central Pollution Control Board.

Audit Criteria: The audit criteria for achievement of audit objectives were derived from the following sources:

- The Water (Prevention and Control of Pollution) Act, 1974 as amended in 1978 (Water Act);

- The Water (Prevention and Control of Pollution) Cess Act, 1977 (Water Cess Act);

- The Air (Prevention and Control of Pollution) Act, 1981 as amended in 1987 (Air Act);

- The Environment (Protection) Act, 1986 (EP Act) and various Rules1 under EP Act;

- Directions and notifications issued by the Central/State Government, Central Pollution Control Board (CPCB) and UPPCB.

- General Financial Rules, 2005 (GFR) as amended.

- Environmental Standards evolved by CPCB.

Scope and Methodology of Audit: Performance Audit on the "Implementation of Environmental Rules and Laws by Uttar Pradesh Pollution Control Board" was conducted between February 2016 and July 2016 covering the period from 2011-12 to 2015-16. The focus areas of audit were to examine implementation of environmental rules and laws to address environmental pollution, adequacy of measures adopted and the efficiency with which they have been executed and to assess the effectiveness in funds management and internal control in respect of programmes relating to pollution and compliance with relevant statutes. Audit

also assessed whether the measures adopted in addressing pollution had the desired impact in abatement or control of pollution in the State. Here audit went ahead of earlier reports conducted in other states and looked into effectiveness of measures adopted by UPPCB. The audit methodology comprised examination of reports and records, analysis of documents at UPPCB headquarter office, selected circle offices and regional offices. Besides, records of various waste treatment facilities and four rivers were also selected for examination.

Audit also conducted beneficiary survey in five cities viz. Bareilly, Ghaziabad, Greater Noida, Kanpur and Lucknow in November 2016 to get the views of public about the pollution and role of UPPCB in prevention, control of pollution and protection of environment. The written opinion of a total 256 people in five cities was taken through a questionnaire regarding pollution of Water, Air, Municipal Solid Waste, Bio-Medical Waste and E-waste. The result of the survey has been suitably incorporated in the report. This was probably first time when audit also incorporated beneficiary survey to take into account public view on effectiveness of UPPCB measures in prevention, control of pollution and protection of environment.

Major Audit Findings that emerged during audit are detailed below:

Inventory of polluting sources not prepared - UPPCB did not have comprehensive and complete inventory of existing industrial units. In absence of inventory, polluting sources and the type and quantity of pollutants discharged into environment could not be identified.

Water Cess - As per section 8 of the Water Cess Act, water cess is collected by the UPPCB and deposited with the Government of India (GoI). 80 per cent of the amount realized and deposited by UPPCB is reimbursed back to it by the GoI. UPPCB could not receive its share of water cess from Government of India amounting to Rs.193.32 crore as it failed to utilize the water cess received earlier. UPPCB failed to assess and raise water cess bills of the municipal authorities on a regular basis and even failed to realize an amount of Rs. 146.43 crore being the amount of bills raised during 2005-2014. Moreover, unrecovered Water Cess from industries also increased from Rs. 384.75 crore as on March 2012 to Rs. 1,050.13 crore as on March 2016.

Inadequate analysis of quality of water - UPPCB did not monitor six out of nine core parameters for assessment of quality of water in rivers and other water bodies due to insufficient testing facilities in the laboratories.

High pollution in rivers/water bodies in the State - The water quality of all 12 major rivers and six water bodies in the State including river Ganga and Gomati was not as per prescribed standard. BOD level and Total Coliform content was above the prescribed standard of equal or below 3 mg/l and equal or below 500 Most Probable Number/100 milliliter (MPN/100 ml) respectively. The main reason was the inadequate sewage / industrial effluent treatment facilities and malfunctioning of existing treatment facilities. UPPCB failed to take appropriate action against the defaulter's i.e. municipal authorities and industries.

Inadequate monitoring of air pollutants - UPPCB was monitoring only three parameters of the air quality against prescribed 12 parameters notified by Central Pollution Control Board due to insufficient testing facilities.

Emission of Particulate Matter in excess of standard - Annual average level of PM10 in six major cities i.e. Allahabad, Ghaziabad, Kanpur, Lucknow, Noida and Varanasi was generally very high ranging from 87 to 347 microgram per cubic meter as compared to the standard of 60 microgram per cubic meter. UPPCB failed to take adequate measures in this regard. It could not monitor and ensure 100 per cent utilization of fly ash generated at

Thermal Power Plants at Aligarh, Raerbareilly and Sonbhadra. It did not record any reason for not monitoring the same.

Partial treatment of Municipal Solid Waste (MSW) - The MSW generation in the State was approximately 15,403 Metric Tonne (MT) per day. Out of this, only 1,521 MT per day was being treated as 620 municipal authorities did not have MSW treatment facility. UPPCB failed to take any action against defaulters under Environment (Protection) Act, 1986.

Contrast in pollution level in Varanasi and Lucknow - Audit studied the pollution levels in two important cities of the State i.e. Varanasi and Lucknow in regard to water, air and Municipal Solid Waste during 2011 to 2015. Studies revealed that though population density in Varanasi was more than that of Lucknow, the water pollution in river Ganga near Varanasi was lesser than water pollution in river Gomati at Lucknow. Air pollution was also lesser in Varanasi than in Lucknow. Vehicular population in Lucknow was more than double that of Varanasi which contributed to enhanced air pollutant levels in Lucknow. As regards MSW management, treatment facility in Varanasi has been started whereas in Lucknow it is still under trial run.

Inadequate facility of bio-medical waste (BMW) treatment - There were 8,366 Health Care Establishments (HCEs) out of which 3,362 HCEs were operating without authorization. Total BMW generated in the State was 37,498 kg/day out of which only 35,816 kg/day was treated and disposed off. BMW of 1,682 kg/day was being disposed-off untreated due to inadequate treatment facility. But UPPCB failed to monitor unauthorized operation and untreated disposal of BMW and did not take any action against the defaulters.

Illegal dump sites of Hazardous Waste - There were five illegal dump sites (four at Kanpur and one at Deva Road, Barabanki) in the State where hazardous waste of approx. 1,41,432 MT had been found dumped since many years but no effective action has been taken by UPPCB so far, resulting in contamination of ground water and air quality.

E-waste - Out of 27 E-waste recycling / collection / generation units in the State (total capacity of 89,886 Metric Tonne per Annum), 11 units (42,840 MTA comprising 48 per cent of total capacity) were operating without authorization. However, UPPCB did not initiate any action against them.

Inadequate inspection of industrial units - The mechanism of inspection of industries by UPPCB was deficient as the selection of the industries for inspection of Red (highly polluting), Orange (moderately polluting) and Green (least polluting) categorization of industries was done in arbitrary manner and against norms. Moreover, there was shortfall in fixation of target of inspection against the norms prescribed by the Ministry of Environment and Forest, GoI and its achievement.

Recommendations are as detailed below:

- UPPCB should prepare complete and comprehensive inventory of polluting sources. It should ensure to achieve the targets of its action plan and upgrade its laboratories to have latest testing equipment and facilities for proper monitoring and get it accredited.

- UPPCB should prepare the financial statement up to date and get it audited, reconcile bank accounts, ensure proper assessment and recover the water cess from industries / local bodies and its utilization for pollution control measures.

- UPPCB should make a plan to improve the quality of water and maintain an up to date data base of industrial units operating without sewage treatment plants and those operating with not functioning / partly functioning sewage treatment plants so that action can be taken against them under Water Act. Penalties on defaulting agencies should be levied for strict enforcement of laws.

- UPPCB should take necessary measures to improve the quality of the air, install Continuous Ambient Air Quality Monitoring Stations, continuous emission and effluent monitoring mechanism and monitor full utilization of fly ash as directed by CPCB / MoEF.

- UPPCB should issue directions to the municipal bodies and other establishments for compliance of the rules regarding handling and management of municipal solid waste and also take action against defaulters under the provisions of EP Act.

- UPPCB should issue directions to the health care establishments for compliance of the BMW Rules regarding handling and management of Bio-Medical Waste and also take action against defaulters under the provisions of EP Act.

- UPPCB should issue directions to the concerned establishments for compliance of the rules regarding handling and management of Hazardous / E-waste and also take action against defaulters under the provisions of EP Act.

- UPPCB should strengthen consent administration system and take action against the industries operating without consent.

- UPPCB should regularly inspect the industries as per norms and penal action should be initiated against defaulting industries.

- UPPCB should have a separate internal audit wing which is liable to report directly to the top management.

- UPPCB should expedite the process of recruitment for effective discharge of its functions under the Environmental Acts and Rules.

Significance: Uttar Pradesh is the largest state and the environmental governance is very important from materiality point of view. The state has largest stretch of river Ganga and its large tributaries. The role of SPCB becomes very crucial in these circumstances. The audit of SPCB also becomes very important for the same reasons. In addition to the conventional issues which are generally seen in audit of SPCBs this Audit Report has included results of surveys conducted in some of the cities of the state which is a novel idea. It has to be noted that majority of 256 persons felt that steps taken by UPPCB / GoUP for pollution control and waste management were insufficient.

➢ **Vijendra Tanwar**

VIII. Commentary on Performance Audit Reef Trust—Design and Implementation Department of the Environment and Energy, Australian National Audit Office (ANAO) [ANAO Report No.27 2016–17]

BACKGROUND

Australia's Great Barrier Reef is the world's largest coral reef system and is considered to be one of the world's premier natural resources. In response to identified threats to the reef's health and outlook, such as the decline in marine water quality, governments have funded a range of reef conservation initiatives. As an outcome of Government policy a Reef Trust was formed and commenced functioning from 1 July 2014 with the objective of providing cost-effective, strategic investment to address key threats to the Great Barrier Reef and catchments for the long-term protection and conservation of the outstanding universal value of the Great Barrier Reef. The Reef Trust is administered by the Australian Government Department of the Environment and Energy (Environment).

To assess the effectiveness of the Department of the Environment and Energy's design and implementation of the Reef Trust ANAO has undertaken an independent performance audit in the Department of the Environment and Energy titled Reef Trust—**Design and Implementation.** The audit was conducted in

accordance with the authority contained in the Auditor-General Act 1997 and presented before the Honourable the President of the Senate and the Honourable the Speaker of the House of Representatives, Parliament House on 24 November 2016.

The objectives of the Audit by ANAO

- Did the design of the Reef Trust support the achievement of the Government's policy objectives?
- Did Environment establish sound implementation arrangements?
- Did Environment establish robust performance measurement and reporting arrangements?

Audit approach

Objective, criteria and methodology

The objective of the audit was to assess the effectiveness of the Department of the Environment and Energy's design and implementation of the Reef Trust. To form a conclusion against this objective, the ANAO adopted the following high level audit criteria:

- State of Queensland, Queensland Audit Office Report No.20: 2014–15, Managing water quality in Great Barrier Reef catchments.
- Recommendations of the Queensland Government's Great Barrier Reef Water Science Taskforce Reef Trust—Design and Implementation.
- The ANAO examined departmental records and interviewed departmental officers, 27 stakeholders from peak industry bodies, non-government organisations, scientific organisations, and Australian and Queensland governments to contribute to the audit.

Scope of Audit

The audit primarily focused on the design, implementation and measurement of outcomes of the Reef Trust. The audit did not include a detailed examination of the department's administration of individual projects funded under the Reef Trust.

The audit primarily focused on review and evaluation of performance of Reef Trust, its Program Design and Implementation, delivery models and various options, offset arrangements, actions on views of relevant stakeholders, action on lessons learned from previous programs considered during the design of the Reef Trust. Whether the Reef Trust designed to build on and align with existing arrangements? Risks to program duplication through alignment of Reef Trust funded projects with other funded projects, delivery appropriately identified and treatments developed, Performance monitoring and reporting.

Audit findings

Program design

Environment considered alternative delivery models for the Reef Trust, with input into the selection of a delivery model sought from a wide range of stakeholders. Environment also provided generally sound advice to government on delivery models and more detailed design options for the Reef Trust. The inclusion of more detailed information on the cost and benefits of alternative delivery models would have further strengthened the advice provided to government.

Environment's stakeholder consultation has been extensive, including through overarching cross-government committees and public consultation. Stakeholder views have been considered by Environment both during program design and implementation stages. The stakeholder feedback that the ANAO received in relation to Environment's consultation activities was largely positive.

Environment incorporated lessons learned from previous reef programs during the design of the Reef Trust. Environment also conducted trial projects to test the appropriateness of

Reef Trust delivery approaches, with processes adjusted based on lessons learned.

The Reef Trust was designed to build on and align with existing arrangements—a key consideration being the delivery of reef conservation activities that would not have been delivered under existing arrangements. Environment has conducted detailed prioritisation processes for Phases II to IV of the Reef Trust, with the committees that oversee the delivery of reef-related programs also responsible for identifying potential duplication across programs.

Program implementation

Environment has appropriately planned for the implementation of the Reef Trust through a project plan and detailed milestone plans for significant additional activities. There would be benefit in Environment including additional information in planning documents, such as task commencement dates, to increase the value of the plans for monitoring purposes.

Environment has undertaken a range of risk assessment activities for the Reef Trust, with risk treatments developed for all identified risks. There is further scope for Environment to improve its processes for the review and approval of risk plans.

Arrangements to align Reef Trust funded projects and to minimise the potential for duplication with other funded projects have been established. These arrangements include reef-related committees that have cross-jurisdictional membership with responsibility for identifying potential duplication across reef conservation programs.

Value for money, effectiveness and priority were generally considered when selecting areas of project coverage and specific projects to fund. At the program-level, processes established to determine those areas of project coverage that were to be included in each new phase involved appropriate cost-effectiveness and priority considerations, with stakeholders consulted and scientific advice obtained. In relation to the selection of individual reef conservation projects for funding, Environment had no evidence to indicate that proposed projects represented a proper use of public resources in relation to two of the six non-competitive rounds examined by the ANAO.

Performance monitoring and reporting

A Reef Trust Monitoring and Reporting Plan has been established that sets out a framework for performance monitoring and reporting towards the achievement of the Reef Trust objective and outcomes. The plan differentiates between performance monitoring (achievement of project objectives) and impact monitoring (environmental outcomes). Further, the plan sets out how Reef Trust achievements are to contribute to meeting both the Reef Water Quality Protection Plan and the Reef 2050 Plan targets, with interlinked monitoring and reporting arrangements for reef-related programs and activities. There would be benefit in Environment more clearly outlining how the 'cost-effective, strategic and above and beyond' elements of the objective will be monitored.

Environment is collecting detailed project-level data to inform monitoring and reporting activities for the Reef Trust. Environment's approach to collecting data from funded projects through its Monitoring Evaluation Reporting and Improvement Tool (MERIT) provides a sound basis to monitor aspects of program delivery.

Reporting arrangements have been established that provide external stakeholders with information on reef conservation initiatives, but reported information is predominantly at the activity level and does not provide information on program achievements or impact. As such, it is difficult for stakeholders to determine the extent to which the Reef Trust objective and outcomes are on track to be achieved.

Environment plans to conduct an interim program evaluation of the Reef Trust in 2018–19, which is intended to assess achievements against the Reef Trust's objective, outcomes, key performance indicators, and principles. In preparation for the interim evaluation, Environment has identified key evaluation questions and incorporated them into the Reef Trust Monitoring and Reporting Plan. In the interim, Environment informed the ANAO that it was exploring options to measure and report on the impact of the Reef Trust.

Conclusion

The Department of the Environment and Energy has been largely effective in designing and implementing the Reef Trust. The design of the Reef Trust is aligned to the Australian Government's broad policy objectives outlined in its original election commitment. Environment provided generally sound advice to government in relation to design options for the Reef Trust, with the advice to government informed by extensive stakeholder consultation processes. Stakeholder feedback received by the ANAO was largely positive about Environment's consultation activities.

Overall, Environment's performance in implementing the Reef Trust has been sound, with planning undertaken for initial and ongoing implementation and risk assessment activities conducted at multiple levels. In relation to the selection of individual reef conservation projects for funding, Environment had generally considered value for money, effectiveness and priority when selecting areas of project coverage.

Environment has established a framework against which it intends to measure the performance and environmental impact of the Reef Trust and its approach to collecting detailed project-level data provides a sound basis to inform monitoring and reporting activities. Environment has also established reporting arrangements that provide external stakeholders with information on reef conservation initiatives, but is yet to report on program-level achievements. An interim program evaluation, planned for 2018–19, is intended to assess program-level achievements against the Reef Trust's objective and outcomes. In the interim, Environment has indicated that it is exploring options to measure and report on the impact of the Reef Trust.

Auditee response to the ANAO report.

The Department of the Environment and Energy responding to the report stated that the Monitoring and Reporting Plan has established the framework for monitoring and reporting on the Reef Trust's achievements and is within the early stages of implementation. That the Department is drawing on a number of processes identified in the Monitoring and Reporting Plan, including the on-line monitoring and reporting tool MERIT and the Paddock to Reef Monitoring and Modelling program, to inform progress of the investments under the Reef Trust. In addition, by December 2017 the Integrated Monitoring and Reporting Program framework will provide a further framework to inform progress against the seven themes of the Reef 2050 Plan.

The Department agreeing with the audit recommendation to strengthen the Reef Trust Monitoring and Reporting Plan to clearly indicate how the impact of the Reef Trust will be assessed stated that to address this recommendation the Department is examining ways to revise and strengthen the Plan to ensure that all elements of the Reef Trust are being appropriately monitored and reported upon.

The Department also noted ANAO's suggestions for improved practices related to project planning, risk management, and one-off grant assessment. Processes to update, review and better integrate these elements have been commenced and will be incorporated into section planning.

Conclusion / Significance:

The ANAO has taken up the Audit of the Reef Trust to assess the effectiveness of the Department of the Environment and Energy's 'design and implementation'. The audit was extensive and incisive. It covered entire ambit of activities from inception, design, execution and implementation. The revelations by audit were balanced and contributing to the improvised Reef Trust functioning. Audit could elicit Reef Trust management's commitment for drawing on a number of processes identified in the Monitoring and Reporting Plan, including the on-line monitoring and reporting tool MERIT and the Paddock to Reef Monitoring and Modelling program, to inform progress of the investments under the Reef Trust. The recommendations of ANAO have also gone well with the Trust Management and they have accepted the recommendations for improved practices related to project planning, risk management, and one-off grant assessment.

- **S. Prabhakar Rao**

IX. Women empowerment and sustainable development

Empowerment can be defined as a "multi-dimensional social process that helps people gain control over their own lives. It is a process that enables them to act in their lives and their society on issues that they think significant". This entails the idea of women's continued disadvantage compared to men which is apparent in different economic, socio-cultural and political spheres. Therefore,

women's empowerment can also be seen as an important process in reaching gender equality, which is understood to mean that the "rights, responsibilities and opportunities of individuals will not depend on whether they are born male or female".

According to the UN Population Fund[1], an empowered woman has a sense of self-worth.

She can determine her own choices, and has access to opportunities and resources providing her with an array of options she can pursue. She has control over her own life, both within and outside the home and she has the ability to influence the direction of social change to create a more just social and economic order, both nationally and internationally.

According to UN World Survey on the Role of Women in Development 2014[2], there are proven synergies between women's empowerment and economic, social and environmental sustainability. Women's active participation in decision-making facilitates the allocation of public resources to investments in human development priorities, including education, health, nutrition, employment and social protection. For example, as female education levels rise, infant and child mortality rates fall and family health improves. Education also increases women's participation in the labour force and their contributions to household and national income. Women's increased earning capacity, in turn, has a positive effect on children's nutrition, health and educational prospects.

Established on 21 June 1946, the UN Commission on the Status of Women (CSW) is the principal global intergovernmental body exclusively dedicated to the promotion of gender equality and the empowerment of women. As one of the functional commissions of the Economic and Social Council, it is also responsible for monitoring and reviewing the implementation of the Beijing Declaration and Platform for Action, and for mainstreaming a gender perspective in UN activities.

Each year, CSW holds a two-week session where representatives of UN Member States, civil society organizations and UN entities gather to discuss the annual priority. In 2017, the priority theme will be "women's economic empowerment in changing world of work", and the review theme will be "challenges and achievement in the implementation of MDGs for women and girls"[4].

Studies on benefits of economic empowerment of women[3]

- When more women work, economies grow: If women's paid employment rates were raised to the same level as men's, the USA gross domestic product would be approximately 9 % higher. In 15 major developing economies, per capita income would rise by 14 % by 2020, and by 20 % by 2030.
- Evidence from a range of countries shows that increasing the share of household income controlled by women, either through their own earnings or cash transfers, changes spending in ways that benefit children.
- In the majority of countries, women's wages represent between 70 % and 90 % of men's, with even lower ratios in some Asian and Latin American countries.
- If women had the same access as men to productive assets, agricultural output in 34 developing countries would rise by an estimated average of up to 4 %. This could reduce the number of

Sustainable development has been defined by World Commission on Environment and Development as development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains two key concepts:

1. The concept of "needs", in particular the essential needs of the world's poor, to which overriding priority should be given; and

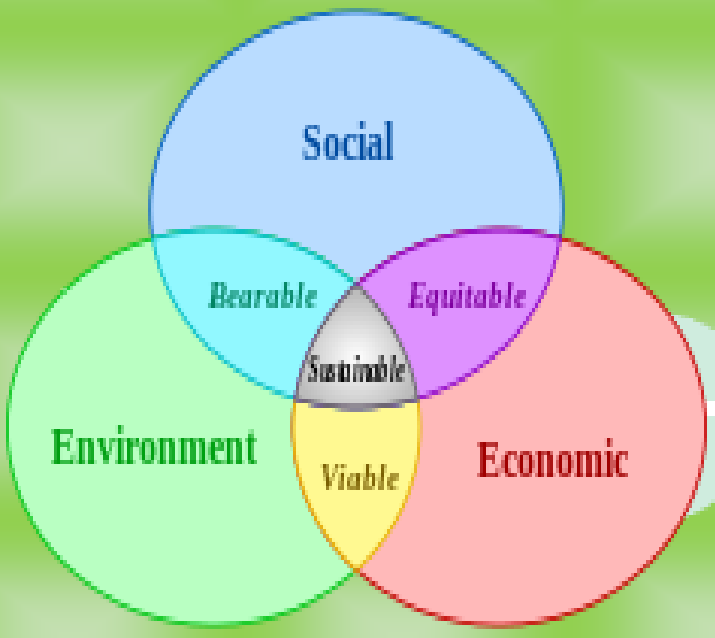
2. The idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs[5].

There are three core elements that need to be harmonized in order to achieve sustainable development: economic growth, social inclusion and environmental protection.

Sustainable development aims at eradicating poverty through, in particular, creating greater opportunities for all, reducing inequalities, raising basic standards of living and fostering equitable social development and inclusion.

Figure: Sustainable development

Source : wikipedia



The UN General Assembly adopted in New York on 25 September 2015 the resolution on the post-2015 development agenda entitled "Transforming our world: the 2030 Agenda for Sustainable Development"6. The 2030 Agenda for Sustainable Development ("the 2030 Agenda") entails 17 Sustainable Development Goals (SDGs) and 169 targets which came into force on the 1st of January 2016. The specific targets of each SDG are to be achieved by 2030. The 2030 Agenda goes hand in hand with the so-called Addis Ababa Action Agenda, an agreement reached by the 193 UN Member States attending the UN Third International Conference on Financing for Development in Addis Ababa, Ethiopia on 27 July 2015. The SDGs are built on the Millennium Development Goals (MDGs). However, contrarily to the MDGs that were intended for action in developing countries only, the SDGs apply to all countries. They cover the three above mentioned dimensions of sustainable development: economic growth, social inclusion and environmental protection. UN has also put forward the idea of six essential elements that help frame and reinforce the universal integrated and transformative nature of the Sustainable Development Agenda

Six essential elements for delivering the SDGs

Source: "The Road to Dignity by 2030 – Synthesis report of the Secretary General on the post-2015 Agenda", UN, 4 December 2014

Countries are expected to establish their own sustainable development strategies, supported by integrated national financing frameworks policies. There is a strong focus on implementation through mobilizing financial resources, capacity-building and

technology. Resources need to be mobilized from domestic and international sources, as well as from the public and private sectors. The UN Member States have recognized the importance to align private investment with sustainable development, along with public policies and regulatory frameworks to set the right incentives. All stakeholders, including governments, civil society and the private sector, are expected to contribute to the implementation of the SDGs.

SDG 5: Achieve gender equality and empower all women and girls[7]

SDG 5 includes the following targets:

5.1 End all forms of discrimination against all women and girls everywhere;

5.2 Eliminate all forms of violence against all women and girls in the public and private spheres, including trafficking and sexual and other types of exploitation;

5.3 Eliminate all harmful practices, such as child, early and forced marriage and female genital mutilation;

5.4 Recognize and value unpaid care and domestic work through the provision of public services, infrastructure and social protection policies and the promotion of shared responsibility within the household and the family as nationally appropriate;

5.5 Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life;

5.6 Ensure universal access to sexual and reproductive health and reproductive rights as agreed in accordance with the programme of Action of the International Conference on Population and Development and the Beijing Platform for Action and the outcome documents of their review conferences;

5.a Undertake reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance and natural resources, in accordance with national laws;

5.b Enhance the use of enabling technology, in particular information and communications technology, to promote the empowerment of women;

5.c Adopt and strengthen sound policies and enforceable legislation for the promotion of gender equality and the empowerment of all women and girls at all levels.

Gender equality and women's empowerment figure prominently in the 2030 Agenda. They are reflected in an integrated manner throughout the Agenda, and also considered critical for its achievement: in the Resolution on the Agenda, the General Assembly declares that "realizing gender equality and the empowerment of women and girls will make a crucial contribution to progress across all the goals and targets". The role of women's empowerment in the 2030 Agenda can be further concretized by looking at the SDG 5 "Achieve gender equality and empower all women and girls" and its targets. Not only the targets of SDG 5 but also many targets of other SDGs are linked to women's empowerment: there are targets on gender dimensions of poverty, health, education, employment and security, for example. In fact, gender equality and the empowerment of women are essential across all SDGs and their targets. Therefore, it is crucial to take a holistic view of gender equality throughout the entire framework.

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