

# Green Files

March 2019



INTERNATIONAL CENTRE FOR ENVIRONMENT  
AUDIT AND SUSTAINABLE DEVELOPMENT  
JAIPUR



## GREEN FILES

*(Newsletter on Environment Audit and Sustainable Development issues)*

### EDITORIAL

Green Files, a quarterly newsletter published by iCED features glimpses of recent environment news, persons and environment projects in focus. Emerging trends in innovation, initiatives and efforts of different environment organizations to protect the environment find occasional reflection in this newsletter. Court judgements on environment issues as well as recent national and international audit reports on environment and sustainable development, are also included in this issue.

During the quarter January-March 2019, iCED organized an International Workshop on Audit of Waste issues, with an objective to provide a platform to various SAIs for contributing and sharing their valuable knowledge and experience in the field of 'Audit of Waste Issues'. This Workshop was aimed at interaction on issues relating to waste management, hazardous waste management, clean technologies and waste recycling, waste and sanitation. Stalwarts in waste sector visited iCED on this occasion.

Development of partnerships occupies a paramount place in India's foreign policy. These include a wide range of capacity building programmes including Indian Technical and Economic Cooperation programme (ITEC). Ministry of External Affairs is the nodal ministry for such programmes. iCED hosted its first training course on Environment Audit under this programme during February 2019.

A four member delegation headed by H E Mr Nasser Hamood Salim Al Rawahi, Vice – Chairman SAI, Oman visited iCED on 05 March, 2019.

During the quarter iCED also conducted National Training Programmes on 'Environmental Management in workshops and manufacturing units of PSEs', 'Audit of conservation and sustainable use of the oceans, seas and marine resources' and 'Environmental Impact Assessments and Audit of Infrastructure Projects'. This newsletter also features an article on the State of Goa.

We at iCED, look forward to your suggestions 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](mailto:iced@cag.gov.in)

With regards,

**Manish Kumar**  
**Director General, iCED**

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## I. iCED News

During the first quarter of the year 2019, iCED conducted important International Training Programmes and Workshops as well as National Training Programmes on auditing environment issues. Besides iCED hosted two days workshop on Natural Resource Accounting and delegation from Oman, for the first time a Training Programme on 'Environment Audit' under Indian Technical and Economic Cooperation (ITEC) programme of Ministry of External Affairs (MEA), GoI was conducted from 11 February to 08 March, 2019 at iCED. This training Programme was attended by 36 participants from 23 countries across the world viz. Bangladesh, Botswana, Chile, Egypt, Fiji, Georgia, India, Kazakhstan, Kenya, Malawi, Mauritius, Russia, South Sudan, Sri Lanka, Swaziland, Syria, Tanzania, Thailand, Togo, Uzbekistan, Vietnam, Zambia, Zimbabwe. The course included a field visit to Dravyavati River Project, Jaipur. It is a river rejuvenation project through a series of measures



*ITEC Participants with Shri Nand Kishore, Former Dy. C&AG*

including installation of Sewage Treatment Plants. Mr. Colin Batchelor, Project Director,



*ITEC Participants with Director General, iCED*

discussed benefits of project with the participants. As part of Study Tour, participants visited, TERI GRAM, Yamuna Biodiversity Park and some Monuments at Delhi, Taj Mahal at Agra, Keoladeo National Park at Bharatpur and Sariska National Park at Alwar. Shri Nand Kishore, Former Dy. Comptroller & Auditor General chaired the valediction and distributed course completion certificates to the participants.

As a Global Training Facility of INTOSAI WGEA and as per Action point 2.3 (c) under Goal 3 of INTOSAI WGEA Work Plan 2017 – 19, iCED conducted five day International 'Workshop on Audit of Waste Management' from 25 February to 01 March 2019. Twenty participants from 13 countries viz. Bhutan, Botswana, European Court of Auditors (ECA), El-Salvador, India, Malaysia, Nepal, Oman, Sri Lanka, Sudan, Tanzania, Vanuatu and

Vietnam attended the workshop. In addition to presentations by experts participants also



*Workshop Participants with Director General, iCED*

shared their experience on audit of waste management. All the participants expressed appreciation to iCED for conducting workshop which provided a unique learning environment and platform to share knowledge on audit of waste between the SAIs.

A delegation from State Audit Institution of



*Director General, iCED briefing the delegation from SAI, Oman*

Oman headed by H E Mr Nasser Hamood Salim Al Rawahy, Deputy Chairman, SAI, Oman also visited iCED on 05<sup>th</sup> March, 2019

to know about the best practices adopted by premiere training facilities in SAI, India. Shri Sunil Dadhe, Director General, iCED made a detailed presentation before the delegation about functioning of iCED, training methodology, training need assessment and training conducted by iCED.

iCED also conducted following National Training Programmes (NTPs) during January – March 2019:

- i. Environmental Management in Workshops and Manufacturing units of PSEs, from 07<sup>th</sup> January to 11<sup>th</sup> January 2019.
- ii. Audit of conservation and sustainable use of the oceans, seas and marine resources from 28<sup>th</sup> January to 01<sup>st</sup> February, 2019.
- iii. Environmental Impact Assessments and Audit of Infrastructure Projects from 04<sup>th</sup> February to 08<sup>th</sup> February, 2019.

From 17 – 18 January, 2019 as per Government Accounting Standards Advisory Board (GASAB) iCED hosted a 2 day Workshop on Natural Resource Accounting. Senior officers from the department including Shri K. K. Srivastava, ADAI (GASAB); Ms. Divya Malhotra, DG (GOVT. A/CS) & Member Secretary (GASAB); Principal Accountants General/ Accountants General from 9



*Shri K. K. Srivastava, ADAI (GASAB) with participants of Workshop on Natural Resource Accounting*

Accounts & Entitlement and 3 Audit Offices participated in the workshop. During 02 day workshop the participants deliberated on issues such as Valuation of Ecosystem Services, Government's approach to Economic/Statistical Accounting of Natural Resources and Use of Technology in Accounting of Natural Resources, etc.

➤ **Vijendra Tanwar**

## II. ASOSAI/ INTOSAI News

### **Raising awareness for important role of SAIs<sup>1</sup>**

INTOSAI Secretary General, and the Steering Committee INTOSAI-Donor Cooperation Chair and Vice-Chair, met on 13 February 2019 the Interim President of the World Bank, Kristalina Georgieva, in Washington to raise awareness of the World Bank and the Donor Community in general for the important role SAIs play in promoting the

efficiency, accountability, effectiveness and transparency of public administration – factors which are also conducive to the achievement of the UN Sustainable Development Goals (SDGs).

The INTOSAI representatives underlined that only independent SAIs at the national level are in the position to strengthen transparency and accountability, and thereby also provide the basis for the implementation of the SDGs.

They presented, among other things, a folder explaining the work of SAIs and why independent SAIs are essential and valuable, citing some of the main challenges to SAI independence as well as the INTOSAI initiatives already taken to foster SAI independence.

The World Bank expressed its support to foster independent SAIs worldwide in the international development agenda of the Donor Community.

### **INTOSAI Chair and INTOSAI Secretary General visit UNODC**

On 23 January 2019 the INTOSAI Secretary General, and the INTOSAI Chair and President of the State Audit Institution of the United Arab Emirates, Harib Al Amimi, paid an inaugural visit to John Brandolino, Director of the Division for Treaty Affairs, at the UN

<sup>1</sup> <http://www.intosai.org/news/180219-worldbank-intosai-donorcooperation.html>

Office on Drugs and Crime (UNODC) headquartered in Vienna.

The meet focused on possibilities to conclude a Memorandum of Understanding (MoU) between INTOSAI and the UNODC to fight against corruption.

The priority areas defined at this meeting were implementation of the 2030 Agenda and the Sustainable Development Goal 16, with particular focus on the fight against corruption. It also focused on supporting the States Parties of the UN Convention against Corruption (UNCAC) and the members of INTOSAI in effectively implementing the UNCAC.

The envisaged MoU is to be signed on the occasion of the 72nd Governing Board meeting in Moscow, Russian Federation, in September 2019.

➤ **Manoj Kumar**

### III. State in Focus: Goa<sup>2</sup>

After the discovery of the sea route to India by Vasco-da-Gama in 1498, many Portuguese expeditions came to India. In 1510, Alfonso de Albuquerque attacked and captured Goa. Even after India's independence, Goa continued to be in the hands of the Portuguese. On 19 December 1961, Goa was

liberated and made a composite union territory with Daman and Diu. On 30 May 1987 Goa was conferred statehood.

Goa is situated on the western coast of the Indian Peninsula. On its north runs the Terekhol River which separates Goa from Maharashtra and on the south lies North Canara district of Karnataka. On the east lie the Western Ghats and on the west the Arabian Sea. Panaji, Margao, Vasco, Mapusa and Ponda are the main towns of Goa.

As per Census 2011, Goa had population of 14.59 Lakhs of which male and female are 739,140 and 719,405 respectively. The population of Goa formed 0.12 percent of India in 2011. In 2001, the figure was 0.13 percent.

The density of population per sq km in Goa is 394 in 2011 as compared to 364 in 2001. The national average is 382. Literacy rate is 87.40 per cent and 92.81 per cent of the male and 81.84 per cent of the female population are literate. Goa has two districts: North Goa and South Goa. Each district is governed by a District Collector and an Administrator.

#### **Water Resources**

Tillari Irrigation Project, an ambitious joint venture major and medium irrigation project aimed at creating an irrigation potential of

<sup>2</sup> <http://knowindia.gov.in/states-uts/goa.php>  
<https://www.goa.gov.in/know-go/about-go/>  
<https://www.census2011.co.in/census/state/goa.html>

21,056 hectares and 117.03 MCM of water for domestic and industrial use was expected to be completed in the financial year 2011-12. However the project is still incomplete. The Water Resources Department apart from supplying raw water for irrigation has also augmented with 25 MLD raw water from Chapora river at Sal and 10 MLD from Amthane tank. A total 6 Bandharas (small dams) have been built across Assonora river to augment raw water supply during the lean season. Opa Water Works has been augmented with a 50 MLD raw water fed from SIP canal to Kalay river. 35 MLD raw water is fed from Medei river at Gunjem to Khandepur river. A total 19 Bandharas have been built across Kalay and the Khandepar river to augment raw water during lean season.

### **Forest and Biodiversity<sup>3</sup>**

Total recorded forest area in the state is 1225 sq. km. (Reserved forest-253 sq. km and unclassified forest- 972 sq. km.); constituting 33.09% of the geographical area of the state and 0.16% of India's forest area (Forest Survey Report 2015). The reason for increase in forest cover is mainly due to increase in mangrove areas. The state is also part of one of the Biodiversity Hotspots of the world namely the Western Ghats lies in Goa.

State animal is the Gaur (Indian bison) and state bird is the Ruby Throated Yellow Bulbul (aka Black Crested Bulbul). The state tree of Goa is Matti (*Terminalia eliptica*). Goa has one National Park namely Molem National park and six Wildlife Sanctuaries which include Bondla Wildlife Sanctuary, Mahaveer Wildlife Sanctuary, Cotigao Wildlife Sanctuary, Mhadei Wildlife Sanctuary, Netravali Wildlife Sanctuary, one bird Sanctuary namely the Salim Ali Bird Sanctuary located on the island of Chorao.

### **Water Pollution<sup>4</sup>:**

In Goa water sources (i.e. perennial water sources), which are being monitored by the Goa State Pollution Control Board (GSPCB) have been categorized based on the guidelines stipulated by the CPCB into –

1. Saline water bodies – Class SW-II
2. Freshwater bodies – Class C
3. Groundwater (i.e. borewells) – Class A

The GSPCB monitors water quality at 50 locations in the State.

Almost all the rivers in the state are polluted and water availability is increasingly being threatened due to rampant pollution from untreated domestic sewage and industrial effluents flowing into the rivers making the water unfit for drinking or any other purpose,

<sup>3</sup> [https://gsbb.goa.gov.in/?page\\_id=2](https://gsbb.goa.gov.in/?page_id=2)

<sup>4</sup> <http://www.navhindtimes.in/pollution-killing-major-go-a-rivers/>  
<http://www.goaspcb.gov.in/Media/Default/uploads/NWMP%20-%20General%20Introduction.pdf>

according to a study in 2017 by the Goa State Pollution Control Board (GSPCB).

The pollution of rivers has been caused because of the presence of faecal coliform bacteria on account of the disposal of untreated/partially treated domestic sewage and open defecation.

Among the 14 municipal bodies, Margao, Mapusa, Bicholim, Mormugao, Ponda, Valpoi, Canacona, Sankhali and Quepem were leading with sizeable number of open defecation areas.

#### **Municipal Solid Waste management<sup>5</sup>**

As per the Municipal Solid Waste Annual Report (2014-2015) of Goa State Pollution Control Board (GSPCB) not a single town had adhered completely (100%) to the Municipal Solid Waste (Management and Handling) Rules of 2000, with only 12 municipal bodies having 'partially complied'. The report however states that Panaji, Pernem, icholim, Valpoi, Ponda, Mapusa, Quepem and Cuncolim have been able to set up good initiatives in different areas of waste management, but a lot needs to be done to save the beautiful state, and the faster actions the better it will be.

<sup>5</sup> <http://goaspcb.gov.in/municipal-solid-waste-annual-report>

<sup>6</sup> <https://www.itsgoa.com/goas-poor-air-quality-breathless/Annual-Report-2017-18>

#### **Air Pollution<sup>6</sup>**

The pollution in Goa's air is almost visible to the naked eye. Particularly while driving over the Mandovi bridge into Panjim.

GSPCB report on air quality for 2017-18 shows that the air quality in Goa's towns and cities is deteriorating. Out of all of Goa's major towns, Vasco appears to be the most polluted followed by Ponda, Panaji, Mapusa, and Margao. All this is happening due to construction work, increase in the number of vehicles and waste burning. Most monitoring stations recorded an Air Quality Index (AQI) above 100 and 201-classified 'moderate'. A few other locations recorded the air quality as 'poor'.

➤ **Virendra Jakhar**

#### **IV. Environmental News**

##### **National Green Tribunal asks to consider banning campaign material made of Plastic<sup>7</sup>**

The National Green Tribunal has directed the Election Commission, the Centre and the Central Pollution Control Board to convene a meeting to consider whether to ban the use of campaigning material made of plastic during elections while hearing petition seeking to prohibit the use of short-life PVC

<sup>7</sup>[https://www.google.com/search?q=moef&rlz=1C1CHZL\\_enIN742IN742&source=Inms&tbn=nws&sa=X&ved=0ahUKEwjGhP](https://www.google.com/search?q=moef&rlz=1C1CHZL_enIN742IN742&source=Inms&tbn=nws&sa=X&ved=0ahUKEwjGhP)

(polyvinyl chloride), synthetic plastic polymer and chlorinated plastic which includes banners, hoarding, etc. for promotion and advertising during the poll campaign.

The petition, moved by Mr W Edwin Wilson through advocate Mr Sanjay Upadhyay, claimed that campaigning material made of plastic are used during election and later discarded as waste, which was detrimental to the environment.

### **Pollution in Ganga harming riverbed sediments too, says study<sup>8</sup>**

The excessive amounts of human waste and toxic effluents that find their way into the Ganga river are not only polluting the water but also causing deficit of dissolved oxygen in the riverbeds in some of the most polluted stretches of the river, a new study has found.

Researchers measured sediment oxygen demand that includes the biological as well as chemical oxygen demanding processes occurring in the riverbed sediment.

The study was conducted between Kanpur and Varanasi, which is considered to be the most polluted region. They also looked at downstream regions of two drains, Wazidpur drain in Kanpur that flushes 54 million liters per day (MLD) of industrial waste and Assi drain at Varanasi that releases more than 66 MLD of sewage waste into the river.

Also, the sediment oxygen demand in the riverbed sediment was associated with a high level of oxygen-demanding chemicals rather than organic matter alone. The research team included Ms Deepa Jaiswal and Mr Jitendra Pandey at Institute of Science, Banaras Hindu University, Varanasi.

### **Principal Scientific Adviser details nine new science and technology missions for the country<sup>9</sup>**

In a press interaction held at Vignan Bhavan, New Delhi, on the 6th of March, 2019, the Principal Scientific Adviser to the Government of India, Prof. K. VijayRaghavan, shared details of the nine new science and technology missions with a focus on 'Science for People and People for Science'. These missions, guided by the Prime Minister's Science, Technology & Innovation Advisory Council (PM-STIAC), aims to promote research for the benefit of the society. The nine national missions include Natural Language Translation, Quantum Frontier, Artificial Intelligence, National Biodiversity Mission, Electric Vehicles, Bioscience for Human Health, Waste to Wealth, Deep Ocean Exploration and AGNIi (Accelerating Growth for New India's Innovations).

<sup>8</sup> [https://www.google.com/search?q=ganga+rejuvenation&rlz=1C1CHZL\\_enIN742IN742&tbn=nws&ei=tOuAXL75FJGWv](https://www.google.com/search?q=ganga+rejuvenation&rlz=1C1CHZL_enIN742IN742&tbn=nws&ei=tOuAXL75FJGWv)

<sup>9</sup> [https://www.google.com/search?q=science+and+technology+news&rlz=1C1CHZL\\_enIN742IN742&source=lnm](https://www.google.com/search?q=science+and+technology+news&rlz=1C1CHZL_enIN742IN742&source=lnm)

These nine missions aim to understand and conserve our biodiversity and develop sustainable agriculture processes, leverage precision health for personal wellbeing, recover wealth from waste, develop and use artificial intelligence, quantum computing, connected mobility solutions and other technologies to address frontier scientific questions and our challenges, thereby enabling sustainable development for India and, indeed, the planet. The mission on 'Natural Language Translation' is aimed at breaking the language barrier and making scientific information accessible for all by providing teaching and researching material in native Indian languages. The 'National Biodiversity Mission' would work for a comprehensive assessment of the distribution and conservation status, monitoring and management of biodiversity.

The 'Electric Vehicles' mission aims to make these vehicles energy efficient, economically viable and scalable, thus reducing fossil fuel consumption and pollution. The mission on 'Bioscience for Human Health' would promote genomic studies of populations to identify the genetic basis of rare and inherited diseases. The 'Waste to Wealth' mission focuses on treating waste to generate energy, recycle

materials and promote a clean and green environment. Two new missions, the "Deep Ocean Exploration", which covers the development of underwater vehicles and robotics, technologies for sustainable use of marine resources and renewable energy generation, and AGNIi that aims to connect grassroots innovators to the market and promote commercialisation of innovative solutions, were also announced.

Each of these missions will be led by a lead Ministry and will engage national and international institutional partners, scientists and industry. It is hoped that the new missions would strengthen research in different domains, connect science with the society, and promote innovations and economy.

### **Cabinet apprised of pact with Tajikistan for cooperation in renewable energy<sup>10</sup>**

The Union Cabinet chaired by Prime Minister Shri Narendra Modi has been apprised of the memorandum of understanding (MoU) between India and Tajikistan on Cooperation in the field of Renewable Energy signed on 8th October, 2018.

<sup>10</sup><https://energy.economicstimes.indiatimes.com/news/renewable/cabinet-apprised-of-pact-with-tajikistan-for>

The MoU will enable establishment of a basis for a cooperative institutional relationship between India and Tajikistan to encourage and promote bilateral technical cooperation in new and renewable energy on the basis of mutual benefit, equality and reciprocity, according to the statement. It will focus on development and deployment of new and renewable energy, and storage technologies. It will further enhance cooperation between the two countries through exchange and training of scientific and technical personnel, exchange of scientific and technological information and data, transfer of equipment, know-how, and technology on non-commercial basis, among others, as may be decided by the two countries.

➤ **Gaurav Jain/Satpal**

**V. Fourth UN Environment Assembly took place in Nairobi, Kenya from 11 to 15 March 2019.**

The fourth United Nations Environment Assembly took place in Nairobi, Kenya from 11 to 15 March 2019.

It is the world's highest-level environmental forum, attended by heads of state, environment ministers, CEOs of multinational companies, NGOs, environmental activists, and more, to discuss and make global commitments to environmental protection.

The two themes were innovative solutions for environmental challenges and sustainable consumption and production, aiming to inspire nations, companies and individuals to #SolveDifferent and take a critical look at how they produce and consume.

It established a committee of the whole to consider the draft resolutions and draft decisions prepared by the Committee of Permanent Representatives under agenda items 6 and 10.

More than 4,700 delegates, including environment ministers, scientists, academics, business leaders and civil society representatives, met in Nairobi for the Assembly, the world's top environmental body whose decisions will set the global agenda, notably ahead of the UN Climate Action Summit in September.

After five days of talks at the Fourth UN Environment Assembly in Nairobi, ministers from more than 170 United Nations Member States delivered a bold blueprint for change, saying the world needed to speed up moves towards a new model of development in order to respect the vision laid out in the Sustainable Development Goals for 2030.

Noting that they were deeply concerned by mounting evidence that the planet is increasingly polluted, rapidly warming and

dangerously depleted, the ministers pledged to address environmental challenges through advancing innovative solutions and adopting sustainable consumption and production patterns. The delegates pledged to promote sustainable food systems by encouraging resilient agricultural practices, tackle poverty through sustainable management of natural resources, and promote the use and sharing of environmental data, ministers said they would significantly reduce single-use plastic products. To address critical knowledge gaps, ministers promised to work towards producing comparable international environmental data while improving national monitoring systems and technologies. They also expressed support for UN Environment's efforts to develop a global environmental data strategy by 2025.

The Assembly, adopted a series of non-binding resolutions, covering the logistics of shifting to a business-unusual model of development. These included a recognition that a more circular global economy, in which goods can be reused or repurposed and kept in circulation for as long as possible, can significantly contribute to sustainable consumption and production.

Other resolutions would transform the economies, through sustainable public procurement and urged countries to support

measures to address food waste and develop and share best practices on energy-efficient and safe cold chain solutions. Resolutions also addressed using incentives, including financial measures, to promote sustainable consumption while encouraging Member States to end incentives for unsustainable consumption and production where appropriate.

A key focus of the meeting was the need to protect oceans and fragile ecosystems. Resolutions were adopted on marine plastic litter and microplastics, including a commitment to establish a multi-stakeholder platform within UN Environment to take immediate action towards the long-term elimination of litter and microplastics. Another resolution called on Member States and other actors to address the problem of marine litter by looking at the full life-cycle of products and increasing resource-efficiency.

During the summit, Antigua and Barbuda, Paraguay and Trinidad and Tobago joined UN Environment's Clean Seas campaign, bringing the number of countries now involved in the world's largest alliance for combatting marine plastic pollution to 60, including 20 from Latin America and the Caribbean. Publication of a series of comprehensive reports such as one on the changing Arctic, emphasized that even if the world were to cut emissions in line with

the Paris Agreement, winter temperatures in the Arctic would rise 3-5°C by 2050 and 5-9°C by 2080, devastating the region and unleashing sea level rises worldwide.

Global Linkages - A graphic look at the changing Arctic has warned that rapidly thawing permafrost could even accelerate climate change further and derail efforts to meet the Paris Agreement's long-term goal of limiting the rise in global temperature to 2°C.

Another report, the sixth Global Environmental Outlook, which is seen as the most comprehensive and rigorous assessment on the state of the planet, warned that millions of people could die prematurely from water and air pollution by 2050 unless urgent action is taken. Produced by 250 scientists and experts from more than 70 countries, the report said the world has the science, technology and finance it needs to move towards a more sustainable development path, but politicians, business people and the public must back the change.

➤ **Manoj Kumar**

**VI. NGT order: Assam Government to file Action Taken Report on CAG Report on Kaziranga and Release Funds to the Reserve**

National Green Tribunal (NGT) in *Rohit Choudhary Vs. Union of India & Ors.* (Original Application No. 174 of 2013) on 22 April 2015 took a serious note of issue regarding the existence of NH – 37 passing through Kaziranga National Park from Jakhlabandha to Bokakhat in contravention of condition stipulated in Environmental Clearance dated 31st May, 1991. Diversion of NH – 37 was a condition precedent for construction of petroleum refinery at Numaligarh was stipulated in the said Environmental Clearance and of course for grave reasons in relation to environment. Learned counsel appearing for State submitted that State has already place the short term measures, long term measures such as construction of flyover, under passes, tunnels for facilitating the wildlife movement across the Kaziranga during normal time as well in critical conditions like floods will take considerable time. Despite release of the funds by MoEF&CC (GoI), the State of Assam had delayed its utilization and/or completely neglected its release to tiger reserves.

The attention was drawn to the Report of the Comptroller Auditor General of India published by the Government of Assam. Learned counsel appearing for Applicant

submitted with reference to paragraph 14.2.3 at page no. 67 and 14.2.11 at page no. 71 of the Report No. 3 of 2014 - Performance Audit of Kaziranga National Park that the area along and around the NH – 37 is illegally exploited for commercial purposes and there is inaction on the part of the State of Assam. The recommendations in that regard appeared at page No. 72 of the Report.

#### **Following are the recommendations:-**

- In view of the Government of India directive of July 2013, a default area of 10 km from the park boundary may be declared as the eco-sensitive zone
- Construction of resorts/hotels without permission, change in the land use pattern of two Resorts need to be investigated upon.
- The entire stretch of NH 37 from Burapahar to Bokakhat need to be freed from illegal encroachments and the dhabas, clearing parking of trucks

The tribunal directed the State of Assam to take positive action in respect of the recommendations made vide Report 3 of 2014- Performance Audit of Kaziranga National Park and place before it the action taken report within three weeks. Notices were issued to the encroachers named in the annexure (G) to the report to show cause why they should not be made to pay

compensation for damaging the environment. State of Assam was also instructed to release the funds to the tiger reserves within two weeks.

➤ **Manoj Kumar**

### **VII. Forest Fire Prevention and Management Scheme**

The report, 'Strengthening Forest Fire Management in India', jointly prepared by the Ministry of Environment, Forest and Climate Change (MoEFCC) and the World Bank has been released in 2017.

Repeated fires in short succession are reducing diversity of species and harming natural regeneration, while posing a risk to over 92 million in India who live in areas of forest cover.

The objective of this assessment is to strengthen knowledge on forest fires by documenting current management systems, identifying gaps in implementation, and making recommendations on how these systems can be improved.

Further, the report seeks to understand how forest fires are deterring India's efforts to meet its climate change goals.

Globally, forest fires release billions of tons of CO<sub>2</sub> into the atmosphere, while hundreds of thousands of people are believed to die due to illnesses caused by exposure to smoke from forest fires and other landscape fires.

Tackling forest fires is significant for India as it has set ambitious policy goals for improving the sustainability of its forests. As part of the National Mission for Green India under India's National Action Plan on Climate Change, the government has committed to increase forest and tree cover.

Further, under its Nationally Determined Contribution, India has committed to bringing 33 percent of its geographical area under forest cover and to create additional sinks of 2.5 billion to 3 billion tons worth of CO<sub>2</sub> stored in its forests by 2030.

So, prevention and management of forest fires is important to achieve these goals.

### **Key Findings**

At least 60 percent of districts in India are affected by forest fires each year. While states in the Northeast account for the greatest share of fire detections, the largest area affected by fire is in the Central region. Fire potential and behaviour is shaped by a combination of natural and social factors. India's monsoons are largely responsible for the seasonal nature of forest fires in the country. Forest fires peak during the dry months of March or April before the arrival of the monsoon. Nearly all forest fires in India, as in other parts of the world, are caused by people as important goods and services obtained from forests (such as fodder for their livestock) are generated or gathered

through the aid of fire. Shifting societal and cultural practices also play a role, as with the use of fire in traditional shifting cultivation (*jhum*).

A vacuum exists at the level of national policy. A cohesive policy framework such as Forest Fire Prevention and Management (FFPM) which is absent at the policy level.

Though MoEF&CC had issued national guidelines on FFPM in 2000, they are no longer being implemented.

India has developed robust detection systems for forest fires. Using satellite data, Madhya Pradesh was the first state to develop an SMS-based system to alert field staff of active fires burning in their area. Since then, Forest Survey of India (FSI) has rolled out a nationwide system. Satellite-based detection has helped fill a gap left by under-resourced ground detection. Post-fire management is not being treated as part of the FFPM process. Lack of standard protocols for collecting and reporting information on fires, including their causes, has made it impossible to aggregate data across states.

### **Policy**

A national policy is required to consolidate existing guidelines and to issue comprehensive guidelines for FFPM which should be aligned with the climate change policies.

The policy should also define the respective roles and responsibilities of the MoEF&CC, state forest departments, and disaster agencies, and establish a mechanism for the provision of regular funding for FFPM to the states.

Ground-based detection will continue to be essential along with the introduction of new remote sensing technologies. So, training should be provided to field officers, seasonal firewatchers, and community volunteers involved in firefighting. Stronger collaboration between the State Forest Departments (SFDs), the disaster management authorities and research entities would enable states to innovate new science-based management approaches for preventing fires and rehabilitating fire-affected areas. Digitization of management boundaries by the state forest departments should be completed so that FSI can more accurately determine which fires to report and to whom. Fire alert systems can also be improved by integrating ground-based detection with the satellite-based alert systems. Sensitization of communities should be done to ensure that fire is used responsibly in a way that promotes forest health, while seeking to avoid damaging and out-of-control fires. Provision of training should extend beyond state-managed forests to community institutions in regions such as the Northeast,

where communities are responsible for managing most of the forest estate.

➤ Pawan Meena

### **VIII. Performance audit of Solid Waste Management in Urban Local Bodies (Report No. 4 of 2018, Karnataka)**

#### **1. Introduction**

Municipal Solid Waste Management (MSWM) in urban areas has emerged as one of the biggest challenges that our country faces today. The situation is aggravated by rapid urbanisation. Inadequate management of waste has significant negative externalities in terms of public health and environmental outcomes. Besides, it has an adverse impact on the aesthetic appearance of the surroundings.

#### **2. Audit objectives**

The objectives of the Performance audit were to ascertain whether:

- strategy and planning envisioned for SWM by the ULBs were in accordance with the extant provisions and supported by an adequate institutional mechanism;
- management of municipal solid waste and Special waste (segregation, collection, transportation, processing and disposal) was effective, efficient, and carried out economically and scientifically; and
- risks to environment posed by waste were identified and minimized.

### 3. Audit criteria

The criteria were derived mainly from:

- The Municipal Solid Waste (Management and Handling) Rules, 2000
- Biomedical Waste Management Rules, 2016;
- Plastic Waste Management Rules, 2016;
- E-waste Management Rules, 2016;
- The Construction and Demolition Waste Management Rules, 2016;
- The State Policy on Integrated Solid Waste Management, 2004; and

### 4. Audit scope

The performance audit on 'Solid Waste Management in Urban Local Bodies' covered the period from April 2012 to March 2017 and examination of the records relating to SWM in the Directorate of Municipal Administration, District Urban Development Cells (DUDC), KSPCB and its Regional Offices and 35 ULBs across all the four strata in 19 districts.

### 5. Audit findings

#### A) Planning and institutional mechanism

Test-checked ULBs had not conducted any survey during the period 2010-16 but had adopted per capita estimates that had low level of reliability adopted were also not realistic. Action plans and strategy documents envisaged in the State policy formulated in 2004 were not prepared and

State policy and strategy in accordance with the SWM Rules, 2016 was yet to be formulated. ULBs neither prepared short term nor long-term plans. Detailed Project Reports (DPRs) prepared during 2016 were deficient. The State Government did not operationalise any waste minimisation strategy during the review period and ULBs did not take up initiatives to promote waste minimisation activity exclusively other than Town Municipal Council, Kumta.

Though requisite committees were formed at the State level, the District and ULB level Committees were not formed in any of the test-checked districts leading to poor support for effective implementation of SWM plans. Dedicated SWM Cell was absent at ULB level. There was shortage of manpower in all cadres viz. Environment Engineer (32 per cent); Health Inspectors (70 per cent) and Pourakarmikas (65 per cent).

#### B) Financial management

None of the test-checked ULBs assessed the requirement of capital and revenue funds for SWM activities until the preparation of DPRs and hence, they were unaware of the resource deficit.

ULBs did not utilise the funds provided for creation of capital assets. In comparison, the funds allocated for revenue expenditure were utilised in full by the ULBs. The expenditure

on SWM was not commensurate with the funds available, resulting in accumulation of balances to the tune of ₹ 93.19 crore at the end of March 2017. The test-checked ULBs were not collecting cess from places of public worship, occupiers of buildings/shops owned by ULBs and Government buildings as these properties were either exempt from payment of property tax or service charges. ULBs also did not levy cess on vacant lands despite the enabling provisions. Consequently, the ULBs lost revenue of ₹ 3.07 crore during the period 2012-13 to 2016-17. There was short accounting of cess of ₹ 5.41 crore in six ULBs and Hubballi-Dharwad Municipal Corporation alone short accounted to the extent of ₹ 5.11 crore.

Ten ULBs diverted funds of ₹ 3.81 crore for works and purchase of equipment/machinery/vehicles related to underground drainage purposes and other activities not connected with SWM.

### **C) Information, Education & Communication activities**

The State/District/ULBs did not notify the classification of items as domestic hazardous waste and therefore, the need to segregate them separately was not publicised. Consequently, segregation of domestic hazardous waste was not done. Similarly, sanitary waste was not collected separately.

Hence, mixed waste was transported to landfills.

Occupational waste (cut beedi leaves and ash) was mixed with regular MSW during collection. Shortage of primary collection vehicles was to the extent of 57 per cent.

### **D) Segregation, Collection and Transportation of waste**

Open vehicles and vehicles without necessary partition were used for transportation of waste. Absence of functional global positioning system (GPS) and tracking systems resulted in unauthorised dumping of waste near the bank of River Kabini in City Municipal Council, Nanjangud.

The test-checked ULBs were able to process only 26 per cent of waste collected during the review period. This was because of non-creation of required infrastructure and under-utilisation of infrastructure created. Eleven ULBs processed waste through composting and only three ULBs adopted bio-methanation technology.

The ULBs were operating disposal facilities without valid authorisation from KSPCB and necessary environmental clearance. The required buffer zone round the landfill sites were not maintained. Activities that do not conform to the provisions of MSW/SWM Rules were taken up in the landfill sites. Many of the landfills test-checked lacked basic

infrastructure such as waste inspection facilities, weighbridge, fire-fighting equipment, toilet, etc. There was evidence of unscientific dumping and burning of mixed waste in the landfills.

The absence of proper segregation of waste led to mixing of MSW with plastic waste, bio-medical waste, e-waste and waste generated by slaughterhouses.

Health care institutions were functioning without authorisation and resorting to unauthorised disposal of bio-medical waste. Test-checked ULBs did not collect and channelise e-waste to authorised dismantlers/recyclers and e-waste was found mixed with MSW.

Slaughterhouses in the test checked ULBs were functioning without authorisation and slaughterhouse waste was not managed properly. Thirty-two of the 35 test-checked ULBs were yet to identify sites for disposal of construction and demolition waste. Consequently, construction debris was dumped on roadsides, near water bodies and low-lying areas. Inefficient management of special waste would lead to environment degradation, pollution and health hazards besides affecting the aesthetics of the cities/towns.

## 6. Recommendations

1. Expediting preparation of State policy incorporating strategies for waste minimisation and management.
2. Better information systems to assist ULBs in preparation of action plans
3. Pro-active and continuous engagement of non-government sector in waste management.
4. Time-bound plan for ULBs to achieve the highest/preferred level of reliability of Service Level Benchmark (SLB) data.
5. Constitution of the required District/ULB level Committees for effective institutional mechanism and implementation of SWM plans.
6. Mandatory modules for training all personnel involved in SWM
7. A system for need-based allocation of funds and accord greater flexibility to ULBs in their utilisation to bridge the resource-expenditure gap.
8. A realistic assessment of the Operation & Maintenance cost involved in SWM and levy and collect SWM cess accordingly with a view to achieving SLBs.
9. According required priority to IEC and ensure that IEC activities are appropriate and create awareness about the harmful

effects of ineffective SWM management on health and environment.

➤ **Sandeep Pawar**

## **IX. International Audit Report on Norway's International Climate and Forest Initiative (NICFI)**

### **Background:**

The capture and storage of carbon in forests is seen as essential for achieving climate goals. Norway has actively contributed to the international initiative for this, called REDD+ "reducing emissions from deforestation and forest degradation in developing countries, and the role of conservation, sustainable management of forests, and enhancement of forest carbon stocks in developing countries", with funding and negotiations.

From 2008–2017, the Storting (Norwegian Legislature) allocated NOK23.5 billion (USD 2.72 billion) to the initiative, which is Norway's largest international climate initiative.

### **Objectives and Issues**

The aim of the investigation was to assess Norway's efforts to establish an effective instrument for reducing greenhouse gas emissions from deforestation and forest degradation in developing countries. The investigation covers analyses of progress and results achieved to date in REDD+ countries

which have been supported by Norway's International Climate and Forest Initiative.

The issues covered by the investigation were as follows:

1. What are the results in developing countries?
2. How has initiative contributed to attainment of the Storting's objectives for the initiative?

Issue 1 what framework has been adopted as regards how REDD+ is to be implemented, as well as experience and results obtained from initial attempts to facilitate and implement REDD+ in developing countries.

Issue 2 looks at whether the Ministry has facilitated good management, follow-up and learning as regards Norway's contribution, and how the Ministry has managed the risk of fraud.

### **Methodology and implementation**

The issues were examined through an analysis of documents, statistics and data obtained in interviews with the Norwegian administration and implementing partners includes a case study with data acquisition in Ethiopia and Brazil covering the period 2008–2017.

## Findings

### **i. The results of REDD+ are delayed and uncertain**

- Conflicts of interest and changing political priorities in partner countries hinder and delay actions.
- In five of the eight bilateral partnerships, payment for emission reductions has been delayed.
- The risk of logging being relocated still remains, partly as a result of challenges linked to the implementation of REDD+ nationally and in countries with extensive forested areas.

### **ii. Norway's contributions to REDD+ have not triggered sufficient financing from other donors**

Compared with other large donors, the United Kingdom and Germany, Norway represented 51 per cent of the contributions from 2008–2016.

### **iii. Monitoring of the implementation and results of REDD+ is unsatisfactory**

There is inadequate follow-up of social and environmental safeguards recipient countries have little reporting.

### **iv. The Ministry of Climate and Environment is not sufficiently systematic in its acquisition and**

### **use of data concerning the results of Norway's International Climate and Forest Initiative**

Though Ministry has developed a framework for measuring progress towards milestones and goals, relative lack of a systematic approach to the acquisition and analysis of data reduces the ministry's basis for management and learning from the testing of REDD+.

### **v. The ministries' follow-up of the risk of fraud is insufficient**

The investigation points to instances in which the Ministry of Foreign Affairs and the Ministry of Climate and Environment did not take sufficient action to prevent, follow up and manage the risk of fraud involving key recipients of Norwegian funds.

### **Ministry's reply**

The Minister stated that in order to develop initiatives to achieve lasting results, the Ministry would systematically further strengthen public-private collaboration, the civil society programme and the work to promote global transparency and combat forest crime.

## Office of the Auditor General's Norway closing remarks

The Office of the Auditor General noted that the dilemma that the Ministry is facing as regards the considerable risk of fraud in Norway's International Climate and Forest Initiative. The investigation indicates that more thorough investigations could have been carried out concerning the risks prior to payment. The Office of the Auditor General wishes to stress the need for responsible and active follow-up of the risk, and the use of immediate responses in the event of non-conformities and reports of suspected fraud. The administration must have zero tolerance for corruption and the follow-up must be in proportion to the risk.

➤ Gaurav Jain

### X. Revisiting Audit Report on AIBP and National Projects: An environmental perspective

Irrigation is a critical factor affecting agricultural productivity and assuring food security as evident from the Plan document<sup>11</sup>, scheme guidelines and programmes launched by Government of India (GoI) chiefly through Major<sup>12</sup>, Medium<sup>13</sup> Irrigation projects (MMI).

<sup>11</sup> Eleventh Plan Document emphasized that the supply side performance of agriculture is affected by a large number of factors such as rainfall, technology, irrigation infrastructure and the economic environment and institutions several of which interact among each other.

<sup>12</sup>Projects with Irrigation Potential (IP) greater than 10,000 ha of Culturable Command Area (CCA).

These projects have relatively longer gestation period say 4-5 years, involve considerable public outlays and also include other benefits in terms of power generation, drinking water supply, reservoir capacity etc. However, there are serious environmental consequences of MMIs in so far as these projects affect the inter-relationship among and between land, water, human beings, other living creatures, plants, micro-organisms and property<sup>14</sup>.

Irrigation is a State subject and the role of the Government of India (GoI) in this sector primarily focuses on overall planning, policy formulation, co-ordination and guidance. With a view to augment irrigation infrastructure in the country, GoI accorded priority to this sector and approved AIBP as a centrally sponsored scheme, included irrigation as one of the six components of *Bharat Nirman* programme, launched National Projects and *Pradhan Mantri Krishi Sinchayee Yojana* (PMKSY). The overall objective of PMKSY is to ensure access to some means of protective irrigation to all agricultural farms in the country, to produce 'per drop more crop' and bring rural prosperity. Therefore, schemes and

<sup>13</sup>Projects with IP of 2,000 ha to 10,000 ha of CCA.

<sup>14</sup>As per Environment (Protection) Act, 1986 environment comprises land, water and air and the inter-relationship among and between water, air and land and human beings, other living creatures, plants, micro-organism and property.

programmes for MMIs have been at the forefront of evaluation studies, audit reports and public debate especially in terms of benefits realized from these projects and their associated costs. Report No. 15 of 2004 (Union Government-Performance Appraisal) and Report No.4 of 2010-11 (Performance Audit) on Accelerated Irrigation Benefits Programme examined the irrigation projects at All India levels. Similarly Parliamentary Committees, Planning Commission, Indian Institute of Management etc also conducted evaluation studies of irrigation projects and schemes.

Recently, Performance Audit Report of the Comptroller and Auditor General of India on Accelerated Irrigation Benefits Programme (No. 22 of 2018) and National Projects (No. 06 of 2018) MoWR, RD&GR highlighted several issues affecting implementation of 134 MMIs pertaining to the period 2008-17<sup>15</sup>. The broad findings of these reports are discussed in following paragraphs:

Audit of 118 (sanctioned cost of ₹ 1,80,145.79 crore) and 16 (estimated cost of ₹ 1,42,681.78 crore) MMIs with targeted IP of 85.41 and 35.58 lakh ha under AIBP and National Project respectively showed that

three were deferred and 11 were under different stage of approval process.

Out of total 120 projects, 30 were completed. Even under completed projects, works were pending and IPC was less than 90 *per cent* of the targeted IP in 40 *per cent* projects. Total 110 projects including 23 completed projects suffered from time overrun ranging up to 18 years. Further, 20 out of 23 MMI Priority I projects<sup>16</sup> missed the deadline of December 2017. Slow pace of project implementation including the priority projects under PMKSY were attributable to several deficiencies in the planning, financial management, implementation and monitoring of the programme despite repeated modifications in the programme guidelines and revisions in terms of funding to focus on Special Category, Hilly States, Special Areas and agricultural distressed districts. The delays in implementation were also attributed to shortfall in land acquisition, obtaining clearances, changes in design and scope of work and deficiencies in works management such as delays in award of work, splitting of works, incorrect phasing of project implementation, execution of sub-standard work, undue benefits to contractors, etc

<sup>15</sup> There were 201 MMIs Under AIBP having sanctioned cost of ₹ 2,22,799.98 crore and 16 under National Projects out of which 5 were under implementation having estimated cost of 86,172.23 crore.

<sup>16</sup> With a view to ensure expeditious completion of AIBP projects, 99 projects were identified as priority projects in 2015 to be completed in a mission mode in phases up to December 2019.

Delay in competition and time over run led to increase in the cost of projects.

Cost revisions were 295 and 2341 *per cent* in 84 AIBP and five National projects respectively of their original aggregate cost. Further, expenditure had exceeded the sanctioned costs though cost revision was not sanctioned in 11 AIBP projects and 13 projects having time overrun up to 12 years carried risk of future cost escalation. Cost escalations were mainly attributable to increase in cost of land acquisition, R&R costs, changes in scope of work, changes in Schedule of Rates (SoR), variation in quantities, change in designs etc.

Despite total cost overrun of ₹ 1,20,772.05 crore and ₹ 82642.23 crore, IP creation was only 68 and 57 per cent of targeted<sup>17</sup> IP under AIBP and National Projects respectively. The main reasons for shortfall in IPC were delayed execution of work, subsequent changes in the scope and design, commencement of work without ensuring fulfilment of essential pre-requisites such as land acquisition, delay in obtaining of clearances and non/delay in provision of R&R measures.

Of the IP created, IP utilization was merely 65 and 37 per cent under AIBP and National Projects. Low utilization was due to variation

in the planned Command Area, incorrect phasing of project implementation, main/branch canals non-completion of minors and distributaries, defects in canals, insufficient water availability, poor operation and maintenance (O&M) and slow *pari-passu* implementation of Command Area Development work for creation of final distributaries to ensure supply of water in the fields.

Delays in completion of projects, escalation in their costs and shortfall in IP creation and utilisation undermined the overall objective of the Programme reflecting lack of a synchronized approach. There were gaps between envisaged IP, IP created and IP utilized. Increase in the cost without proportionate increase in the benefits adversely affects the economic viability of these projects measured by Benefit Cost Ratio (BCR). It also tends to affect issue of sustainability and ecology. Delays in completion of irrigation projects coupled with other factors such as variation in rainfall, water intensive cropping, electrical subsidy, technological options etc. have propensity to promote intensive exploitation of Ground water resources. Proper understanding of implications of aspects such as alteration in water flow, flora, fauna, etc. gets prolonged

<sup>17</sup> Target relating to 118 AIBP and five National Projects under implementation.

thereby intensifying the risk of irreversible consequences for ecology and environment with increasing lapse of time.

Thus, timeliness in completion of irrigation projects is a *sine qua non* for addressing the associated environmental concerns besides their socio-economic considerations and reinforcing public accountability as well as promoting good governance.

➤ **Pushkar Kumar**  
Director (T&R) iCED

