

EnviStats India - Facilitating Environmental Governance in India

Introduction

1. India covers a land area of 3.28 million hectares that is only 2.4 percent of the total land area in the world; yet it is home to about 17 percent of the world population. India exhibits immense diversity, not only in terms of its climate, physio-geography and ecological regime but also its people and culture. India is rightly called as a “land of diversity” as it has immense biodiversity wealth in terms of not just the number of floral and faunal species but also a diverse range of ecological landscapes like mountains, plains, plateaus, coast, islands and deserts represented in as many as ten unique biogeographic zones. Four of the 34 global biodiversity hotspots are in India, replete with a diversity of endemic species. With the Tropic of Cancer passing through the center of India, the climate varies from tropical monsoon in south to temperate in north. But owing to a vast range in altitudes and topographies and the national borders traversing through mountainous and coastal territory, a variety of climate contexts are experienced throughout the country. This also translates into a multitude of agro-ecological systems and the intertwined evolution of ecological contexts. The country has an abundance of natural resources and biodiversity wealth that is also closely interlinked with the lives and livelihoods of the people. This linkage has made environmental governance integral to the sustainable livelihood development.

2. It is, therefore, not surprising that the systems for environmental governance and regulation in India can be traced back to the Ancient India, around 1700–500 BC, with the Upanishads and Vedas linking the flourishing of civilization to living in harmony with nature. These guidelines were aptly followed by the Indian Emperors, the examples of which can be found in the Indian History. For instance, Emperor Chandragupta Maurya is said to have appointed a special officer to protect the forests and to allow the use of forests only for specific purposes, viz. religious study, forest produce, grazing of royal elephants and hunting, while Emperor Ashoka promoted tree plantation along roads and the cultivation of medicinal plants. These practices were re-energized by the notification of the National Forest Act in 1878, which later gave way to the Indian Forest Act, 1927. These environmental concerns were supplemented by the Directive Principles of State Policy, an integral and significant element of Constitution of India, which reflect the commitment of the State to protect the environment with regard to forests and wildlife and which enjoin upon the citizens of India the responsibility to protect and improve the environment.

2. Matters related to governance of natural resources is allocated to different Ministries of the Government of India, details of which are given in its Allocation of Business Rules. The Ministry of Environment, Forest and Climate Change (MoEF&CC) has been designated as the nodal agency in the Government of India for overseeing the implementation of India’s

environment and forest policies and programmes relating to conservation of the country's natural resources, its biodiversity, forests and wildlife and for ensuring the welfare of animals and prevention and abatement of pollution.

3. The objectives of the MoEF&CC are well supported by a set of legislative and regulatory measures, aimed at the preservation, conservation and protection of the environment. Besides the legislative measures, a National Conservation Strategy and Policy Statement on Environment and Development, 1992, National Forest Policy, 1988, a Policy Statement on Abatement of Pollution, 1992 and a National Environment Policy, 2006 also guide the Ministry's work. On the resource side, as per the Demand for Grants of the Ministry for the year 2019-20, the Ministry had an outlay of Rs. 2954.72 crore and a sanctioned manpower of 5113 persons for the year.

4. The main challenge for the Government in the environmental sector is to apply its competence in a visionary manner by not only prioritizing the protection of ecosystems and minimizing the environmental impacts of economic activities, but also ensuring that the national priorities are not compromised. This necessitates effectively implementing an integrated approach covering the different domains. The multi-pronged activities of the Government of India, therefore, cover an entire spectrum of environmental governance, ranging from operation of the licensing systems to ensuring sustainability of resources, from increasing information and awareness through education to participating in the global efforts on environment protection and preparing for extreme events. Some of the important aspects of these activities are outlined in the following paragraphs.

I. Environmental Licensing Systems in India

Implemented with an objective of preventing, reducing or compensating for the environmental impacts of human activities, environmental licensing is key to integrating the considerations of environmental protection into the development process so as to achieve sustainability. The three main systems of environmental licensing in India that ensure compliance with environmental standards are that of environment impact assessment, forest clearance and wildlife clearance. These clearances have been codified under the Environment Impact Assessment (EIA) Notification, 2006, Coastal Regulation Zone (CRZ) Notification, 2011, Forest (Conservation) Rules, 2003 and the Wildlife (Protection) Act, 1972, respectively.

Since 2018, all the three clearances are provided through a web based, role based workflow application, PARIVESH, which has been developed for online submission and monitoring of the proposals submitted by the proponents for seeking Environment, Forest, Wildlife and CRZ Clearances from Central, State and district level authorities. It has automated the entire process and facilitates tracking the status of the proposal at

each stage of the workflow. More details on the process as also the number of applications received and disposed are available at <https://parivesh.nic.in/>.

II. Ensuring sustainability of resources

One of the prime concerns in environmental regulation is to promote activities and practices that can ensure the availability of adequate natural resources for the future generations. For instance, fish stocks can be maintained sustainably with management practices such as:

1. controlling the activities of fishermen operating where fish stocks are being depleted so as to allow fish to reach breeding age and maintain or increase their populations.
2. setting quotas for fishing to manage fish stocks and help protect species that are becoming endangered through overfishing.

Apart from MoEF&CC, measures are being taken by other government agencies also for ensuring sustainable biological resource extraction. For example, the Fishery Survey of India (FSI) surveys Demersal, Pelagic and other resources to assess their occurrence status and to establish sustainable fisheries practices, which are the popularized among fishermen in accordance with Code of Conduct for Responsible Fisheries (CCRF). Baseline data on biodiversity of fin fishes, crustaceans and cephalopods resources in Indian EEZ have been collected by FSI to guide sustainable fisheries. Central Marine Fisheries Research Institute (CMFRI), on the other hand, helps States in designing guidelines for minimum legal size (MLS) to ensure sustainable produce of commercially important fish stocks.

A significant intervention in the matter is the imposition of a uniform ban on fishing by all fishing vessels in the Indian Exclusive Economic Zone (EEZ) beyond territorial waters on the East Coast including Andaman & Nicobar Islands and West Coast including Lakshadweep Islands for a period of 61 days for conservation and effective management of fishery resources and also for sea safety reasons. The traditional non-motorized units are exempted from this uniform fishing ban imposed in the Indian EEZ beyond territorial waters. The closed season corresponds to the breeding/ spawning season so as to allow for generation of larvae and for the juveniles to grow. Such closed seasons are being demanded and enforced by fishermen themselves.

III. Increasing information and awareness through education

Environmental topics have always found a place in the curriculum in the schools, colleges, universities and other institutions of India but the present status of Environmental Education (EE) in schools had its genesis in the National Policy of Education (NPE) 1986 (modified in 1992), in which 'Protection of the Environment' is stated as a common core around which a National Curriculum Framework (NCF) would be woven.

The National Policy on Education 1986 emphasized the need to create awareness of environmental concerns by integrating it in the educational process at all stages of education and for all sections of society. Accordingly, the National Curriculum for Elementary and Secondary Education: A Framework- 1988 presented the view of National Council of Educational Research and Training (NCERT): "The school curriculum should highlight the measures for protection and care of the environment, prevention of pollution and conservation of energy". Understanding of the environment in its totality, both natural and social, and their interactive processes, the environmental problems and the ways and means to preserve the environment was one of the General Objectives of Education as per National Curriculum Framework, 2000 and later reinforced in the National Curriculum Framework, 2005.

Following these guidelines, topics related to environment have been suitably infused with different science and social science subjects at all school stages. Environment Education, now a compulsory part of the syllabus in schools throughout the country, aims at providing children with knowledge, attitudes and skills so that they are equipped to contribute meaningfully towards the betterment of the environment and accomplish the goal of sustainable development.

In addition, MoEF&CC embarked upon a major initiative for creating environmental awareness among children by formulating National Green Corps (NGC) in 2001-02. There are around 1,00,000 Ecoclubs across the country under the aegis of NGC. Financial assistance is provided under this programme to schools and colleges for undertaking activities such as raising awareness on solid waste management, celebration of important environmental days in schools such as World Environment Day, World Wetland Day, Earth Day, etc. and for conducting plantation and cleanliness drives in and around the school campuses.

IV. India's participation in the global efforts on environmental protection

Multilateral environmental agreements guide global, regional and national action on environmental issues and are a result of multilateral processes, which make them key elements of environmental, legal and governance regimes. Scholars and practitioners also refer to them as "soft laws" to indicate the nature of the instruments and compliance issues related to them. Some of the important Multilateral Environmental Agreements ratified by India are given in Table 1.

Table 1

MEAs and other global environmental conventions endorsed by India

S. No.	Name of the Multilateral Environment Agreements (MEAs)
	Nature Conservation
1.	Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)

S. No.	Name of the Multilateral Environment Agreements (MEAs)
2.	The Wildlife Trade Monitoring Network (TRAFFIC)
3.	Convention on the Conservation of Migratory Species of Wild Animals
4.	Coalition Against Wildlife Trafficking (CAWT)
5.	Convention on Biological Diversity (CBD)
6.	International Tropical Timber Organisation (ITTC)
7.	United Nation Forum on Forests (UNFF)
8.	The International Treaty on Plant Genetic Resources for Food and Agriculture
9.	Convention on Wetlands (popularly known as the Ramsar Convention)
10.	World Heritage Convention (WHC)
11.	International Plant Protection Convention (IPCC)
12.	International Whaling Commission (IWC)
13.	The Nagoya Protocol on Access to Genetic Resources & Fair and Equitable Sharing on Benefit Arising from their Utilization to the CBD
14.	The Cartagena Protocol on Biosafety
15.	International Union for Conservation of Nature (IUCN)
16.	Global Tiger Forum (GTF)
17.	International Whaling Commission (IWC)
	Hazardous Material
18.	Minamata Convention on Mercury
19.	Strategic Approach to International Chemicals Management (SAICM)
20.	Stockholm Convention on Persistent Organic Pollutants (POPs)
21.	Basel Convention on the Control of Trans-boundary Movement of Hazardous Waste and Their Disposal
22.	Rotterdam Convention on Prior Informed Consent (PIC) for certain Hazardous Chemical and Pesticides in International Trade
	Atmospheric Emissions
23.	United Nations Framework Convention on Climate Change (UNFCCC)
24.	Kyoto Protocol under UNFCCC
25.	United Nations Convention to Combat Desertification (UNCCD)
26.	Montreal Protocol (on Ozone Depleting Substances)
27.	Paris Agreement under UNFCCC

V. Preparing for extreme events

In India, Disaster Management Act, 2005 (DM Act 2005) lays down the institutional mechanism for effective Disaster Management (DM) at the national, state, district and local levels. The institutional arrangements have been set up consistent with the paradigm shift from the relief-centric approach of the past to a proactive, holistic and

integrated approach for Disaster Risk Reduction (DRR) by way of strengthening disaster preparedness, mitigation and emergency response.

The National Disaster Management Plan (NDMP) of the Government of India incorporates the PM's Ten Point Agenda for DRR articulating contemporary national priorities as well as India's national commitments in the domain of DRR associated with the three major post 2015 global frameworks namely (i) Sendai Framework for Disaster Risk Reduction (SFDRR); (ii) Sustainable Development Goals (2015-2030); and (iii) Paris Agreement on Climate Change, under the United Nations Framework Convention on Climate Change.

NDMP 2019 provides a framework and direction to the government agencies for all phases of disaster management cycle. Recognizing the need to minimize, if not eliminate, any ambiguity in the responsibility framework, NDMP specifies who is responsible for what at different stages of managing disasters. The Plan addresses all phases of disaster management: a) Mitigation (prevention and risk reduction), b) Preparedness, c) Response and d) Recovery (immediate restoration and build-back better) and elucidates on five thematic areas of action, viz., understanding risks, inter-agency coordination, investing in DRR in the form of structural and non-structural measures and capacity development.

In accordance with the NDMP, the Government of India has designated specific agencies to monitor the onset of different natural disasters, set up adequate Early Warning Systems (EWS) and disseminate necessary warnings/ alerts regarding any impending hazard, for all those hazards where early warning and monitoring is possible. The details of Central Agencies Designated for Natural Hazard-Specific Early Warnings are mentioned in Table 2 below.

Table 2
Agencies designated for early warnings for important natural hazards

S. No.	Hazard	Ministry	Agency
1	Avalanches	Ministry of Defence	Snow and Avalanche Study Establishment (SASE)
2	Cold Wave	Ministry of Earth Sciences (MOES)	India Meteorological Department (IMD)
3	Earthquake		
4	Heat Wave		
5	Cyclone	Ministry of Earth Sciences	India Meteorological Department (IMD)
			Regional Specialized Meteorological Centre (RSMC)
			Tropical Cyclone Warning Centres (TCWC) for different regions

S. No.	Hazard	Ministry	Agency
6	Drought	Ministry of Agriculture & Farmer Welfare	Central Drought Relief Commissioner (CDRC) and Crop Weather Watch Group (CWWG)
7	Epidemics	Ministry of Health and Family Welfare	Ministry of Health and Family Welfare (MHFW)
8	Floods	Ministry of Jal Shakti	Central Water Commission (CWC)
9	Landslides	Ministry of Mines	Geological Survey of India (GSI)
10	Tsunami	Ministry of Earth Sciences (MOES)	India National Centre for Oceanic Information Services (INCOIS)

Need for Environment Statistics

5. All the above-cited activities of the Government of India require statistics and coordination efforts between the different public institutions that produce relevant data, which, in turn, should seek to align their working methodologies to create compatible, well-structured and unified databases. Any deficit in terms of production and capacities for the management of data and statistical and disaggregated information may impede, in varying degrees, the integrated approaches in decision making. It is also important to understand which datasets would be required to populate this integrated/unified database, or in other words, its scope, so as to maximize its usefulness.

Scope of Environment Statistics

6. The scope of environment statistics covers biophysical aspects of the environment and those aspects of the socio-economic system that directly influence and interact with the environment, and consequently, it is not easy to draw a clear line dividing the environment, social and economic statistics. Apart from social and economic statistics that describe processes or activities with a direct impact on, or direct interaction with, the environment, other relevant social and economic statistics are also required to place environmental issues in context and facilitate the integrated analysis of environmental, social and economic processes.

7. Environmental information includes quantitative and qualitative facts describing the state of the environment and its changes. Quantitative environmental information is generally produced in the form of data, statistics and indicators, and is generally disseminated through databases, spreadsheets, compendia and yearbooks. Qualitative environmental information consists of descriptions (e.g., textual or pictorial) of the environment or its constituent parts that cannot be adequately represented by accurate quantitative descriptors.

Sources of environment statistics

8. Environment statistics synthesize data originating from various types of sources. Thus, the data used to produce environment statistics are not only compiled by many different collection techniques, but also by many different institutions. Types of sources include:

- i. statistical surveys (e.g., censuses or sample surveys of population, housing, agriculture, enterprises, households, employment and different aspects of environment management);
- ii. administrative records of government and non-government agencies responsible for natural resources, as well as other ministries and authorities;
- iii. remote sensing and thematic mapping (e.g., satellite imaging and mapping of land use and land cover, water bodies or forest cover);
- iv. monitoring systems (e.g., field-monitoring stations for water quality, air pollution or climate);
- v. scientific research and special projects undertaken to fulfil domestic or international demand.

These multiple types of sources are usually used in combination. For instance, in estimating certain types of emissions to the air, statistical surveys are used in combination with scientific research. While statistical surveys and administrative records are commonly used in all areas of statistics (economic, social and environment) and the use of remote sensing data has become widespread, the use of data from monitoring networks, scientific research and special projects are mostly specific to the production of environment statistics.

9. The table below, Table 3, shows the main characteristics of each type of sources from which environment statistics are usually derived. It provides examples of these statistics and the general advantages and disadvantages of each type of source.

Table 3
Types of sources of environment statistics and their main characteristics

Type of source	Strength	Weakness	Statements in this publication from this source
Statistical surveys (i) Censuses	More representative of the universe of informants	Low periodicity Expensive	Statements regarding human population, livestock population & marine fisheries resources

Type of source	Strength	Weakness	Statements in this publication from this source
(ii) Sample surveys	Greater periodicity	Sampling and representativeness of sample may be a concern in the case of surveys designed for other than environmental purposes	Statements regarding basic household characteristics and access to basic facilities
Administrative records	High production periodicity	Terms and definitions may differ from those used in statistics; access to microdata may be limited; metadata may be missing	Statements on agricultural and fish production, consumption of agricultural inputs, production, export & import of minerals, petroleum products, transport statistics, crime statistics and losses due to disasters
Remote sensing and thematic mapping	Very accurate	Lack of adequate number of geomatics specialists in the relevant organisations.	Statements regarding soil characteristics, land use land cover classes, degraded and wastelands
Monitoring systems	In general, good to excellent quality and more accurate data and microdata	High cost of installing and maintaining monitoring systems; Point specific measurements usually do not allow for aggregation over space unless the network is dense enough.	Statements regarding weather conditions, Ambient air quality, Water quality, Installed Power generating capacity and occurrence of extreme natural events
Scientific research and special projects	Low cost; May be used to fill in data gaps; Useful for developing coefficients	Terms and definitions may differ from those used in statistics; Often have limited scope and often produced on a one-time basis	Statements on status of ecosystem, coral reefs, Marine faunal diversity, rare and threatened species in vertebrates, Carbon Stock in different forest carbon pools, Coastal Water Quality, water resource availability

Framework for the Development of Environment Statistics

10. In order to standardize the environment statistics being compiled by different countries, the United Nations Statistical Division (UNSD) developed and published in 1984,

'A Framework for the Development of Environment Statistics (FDES)'. The FDES sets out the scope of environment statistics by relating the components of the environment to information categories that are based on the recognition that environmental problems are the result of human activities and natural events reflecting a sequence of action, impact and reaction. The contents of the FDES are "statistical topics"; they are those aspects of environmental concerns that can be subjected to statistical description and analysis. It is a flexible framework for developing and organizing environmental and related socio-economic information.

11. Since the publication of FDES in 1984, there have been a number of scientific, political, technological, statistical and experience-based developments which necessitated the revision of FDES. The UN Statistical Commission at its 44th Session held in 2013 endorsed the revised framework, referred to as FDES 2013, and the final official edited version of FDES 2013 was released by United Nations Statistics Division (UNSD) in June 2016.

12. The FDES 2013 addresses the issues related to the multidisciplinary nature of environment statistics by marking out the scope of environment statistics and providing a conceptually based organizing structure that brings together the necessary biophysical data originating from different sources, as well as the relevant social and economic statistics needed to describe the activities affecting environmental conditions and to estimate their environmental impact, that are required for policy analysis and decision making.

13. The FDES uses a multi-level approach. The first level of the structure defines the *six fundamental components*. Each individual FDES component is further broken down into its respective sub-components (second level) and statistical topics (third level). The statistical topics represent the measurable aspects of the components of the FDES. The components, sub-components, statistical topics and individual statistics of the FDES provide an organizing structure for synthesizing and presenting the information in a comprehensive, consistent and coherent manner.

14. The complete list of statistics, referred to as the Basic Set of Environment Statistics, follows a progression of three tiers:

- (a) Tier 1 is the Core Set of Environment Statistics with 100 indicators, which are of high priority and relevance to most countries and have a sound methodological foundation.
- (b) Tier 2 includes environment statistics that are of priority and relevance to most countries but need more investment in time, resources or methodological development.
- (c) Tier 3 includes environment statistics which are either of less priority or require significant methodological development.

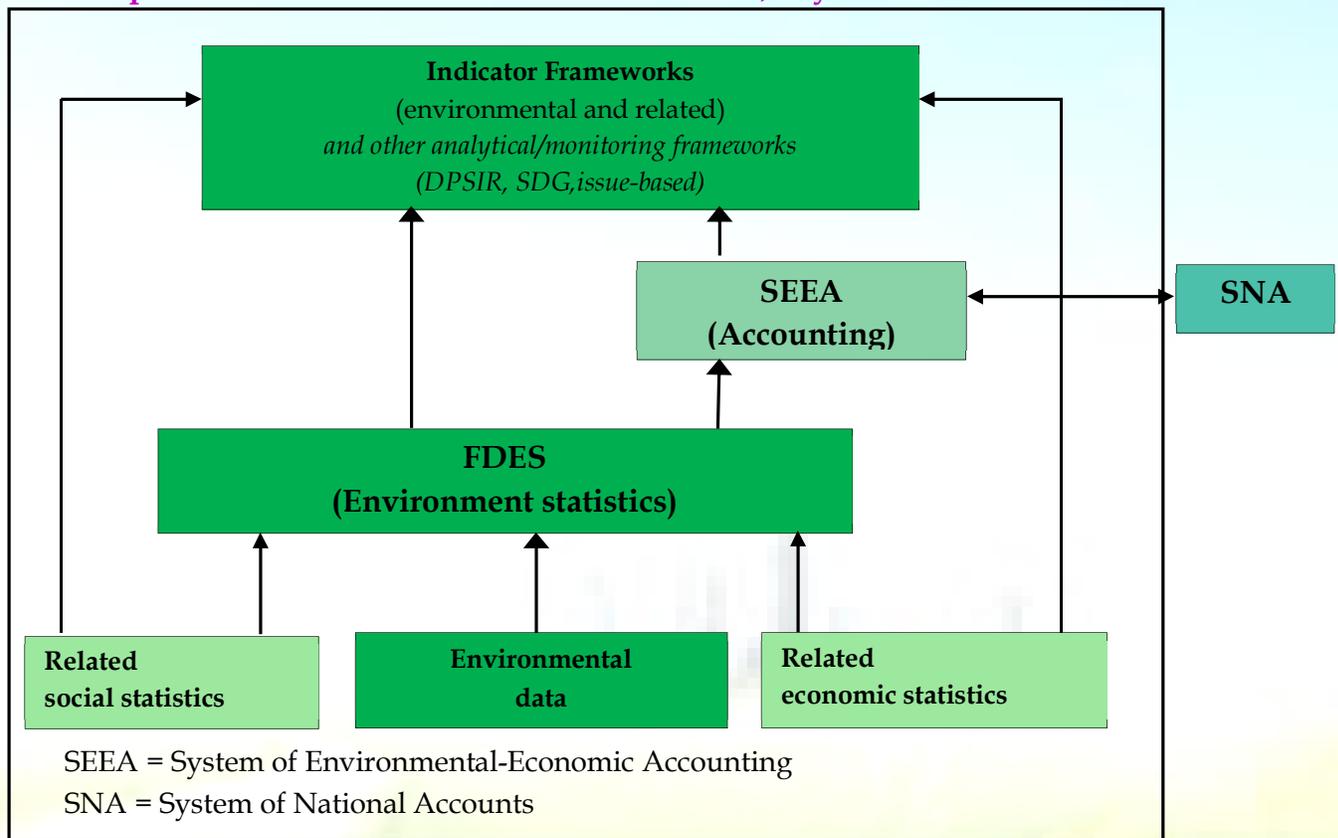
15. The Core Set of Environment Statistics (i.e., Tier 1) represents a broad consensus of opinion; as such, it is intended to foster collection, coordination and harmonization of environment statistics at the national, regional and global levels in the short-term. Consequently, depending on their priorities and resources, countries are encouraged to consider producing Tier 2 and Tier 3 statistics in the medium and in the long-term respectively.

Relationship of the FDES with other frameworks

16. As a multi-purpose statistical tool for the development of environment statistics, the FDES is closely related to and supports other systems and frameworks that are frequently used at the national and international levels. Figure 1 provides a simplified illustration of the relationship between environmental data, the FDES, the SEEA and the different analytical and indicator frameworks. The FDES can well be used as a tool to produce statistical series and indicators organized according to different analytical or policy frameworks.

Figure 1

Relationship of the FDES to other frameworks, systems and indicator sets



17. Table 4 summarizes key attributes of the six components of the FDES, including a general description, main sources and partners of the statistics in India and conceptual

relationships between each component and other systems and frameworks like the SDGs, SEEA and DPSIR.

Table 4
Main attributes of the components of the FDES

Component	Description	Main Sources and Institutions in India	Relation to SDG, DPSIR and the SEEA
Component 1: Environmental Conditions and Quality	Meteorological, hydrographical, geological, geographical, biological, physical and chemical conditions and characteristics of the environment that determine quality	Survey of India, NRSC, ISRO, Ministry of Agriculture and Farmers' Welfare, IMD, BSI, CZA, NTCA, FSI, ZSI, CPCB, CMFRI, CGWB, CWC, Department of Land Resources	SDG (9, 11, 14, 15) State and Impact element in DPSIR Experimental ecosystem accounts of the SEEA
Component 2: Environmental Resources and their Use	Quantities of environmental resources and their changes and statistics on activities related to their use and management	Ministry of Agriculture and Farmers' Welfare, Department of Chemicals & Petrochemicals, Coal Controller's Organization, FSI, Ministry of Animal Husbandry, Dairying and Fisheries, Office of Registrar General of India, CGWB, CWC, IBM, CEA, Ministry of New and Renewable Energy, Ministry of Petroleum and Natural Gas, Ministry of Shipping	SDG (1, 2, 6, 7, 15) Driving force, Pressure and State elements in DPSIR Asset and physical flow accounts of the SEEA-CF
Component 3: Residuals	Generation, management and discharge of residuals to air, water and soil	CPCB and Ozone Cell of MoEF&CC and International Energy Agency	SDG (6, 9) Pressure and Response elements in DPSIR Physical flow accounts of the SEEA-CF
Component 4: Extreme Events and Disasters	Occurrence and impact of natural extreme events and disasters,	IMD, Ministry of Agriculture and Farmers' Welfare, Disaster Management Division,	SDG (1, 11) Pressure, Impact and Response elements in DPSIR

Component	Description	Main Sources and Institutions in India	Relation to SDG, DPSIR and the SEEA
	and technological disasters	MHA & National Crime Record Bureau	Asset accounts of the SEEA-CF
Component 5: Human Settlements and Environmental Health	The built environment in which humans live, particularly with regard to population, housing, living conditions, basic services and environmental health	Directorate General of Civil Aviation, CBHI, DGHS, Office of Registrar General of India, CPCB, NITI Aayog, Ministry of Railway, Ministry of Road Transport & Highways, Ministry of Shipping.	SDG (1, 3, 6, 9, 11) Driving force, Pressure and Impact elements in DPSIR
Component 6: Environmental Protection, Management and Engagement	Environmental protection expenditure, environmental regulation, both direct and via market instruments, disaster preparedness, awareness and engagement of the society	Integrated Nutrient Management Division and NBPGR, Ministry of Finance, IBM, CPCB, Ministry of New and Renewable Energy.	SDG (2, 11, 13, 14, 15) Response element in DPSIR Environmental activity accounts and related flows of the SEEA-CF

Contents of the publication

18. The statements of the publication 'EnviStats-India; Vol. I - Environment Statistics' have been categorised into six chapters, each corresponding to one of the components of FDES 2013. The tables relating to the topics under the component have been put together, for the ease of comprehension and use. This publication is the third in the series. The first issue, released in March 2018, provided information on 84 of the 100 indicators in the Core Set and 44 and 6 of the Tier 2 and Tier 3 indicators respectively. These were subsequently updated in the subsequent issue of EnviStats India released in March 2019.

19. The extant publication has an improved coverage of the indicators prescribed by FDES, with information provided on 217 indicators, of which 88 belong to the Core Set or Tier I, 106 to the Tier II and 23 to the Tier III.

20. Some of the additional indicators covered in this issue are qualitative in nature - like that on the main environmental authority, its budget and manpower, systems of environmental clearance, description of programmes for environment awareness in schools, description of the disaster management plan, systems for early warning, etc. the qualitative indicators that have been added as part of the following statements:

1. 1.61: Status of Critically Polluted industrial clusters;
2. 1.40: Status of Invasive alien flora and fauna species in India;
3. 1.60: Status of Ambient Noise Level in Metropolitan Cities;
4. 2.61: Water Sharing Treaties with Neighbouring Countries;
5. 3.12: State-wise amount of waste generated by waste category;
6. 3.13: State-wise status of management of hazardous waste;
7. 3.14: State-wise status of Hazardous Waste Generation & its Management;
8. 3.15: State-Wise status of Hazardous waste treatment and disposal facilities;
9. 3.16: State-Wise status of Bio-medical Waste Generation and its Management;
10. 3.17: State-wise status on Imports & Exports of Hazardous Waste;
11. 3.18: State-wise status of Industrial Waste Water Treatment Plants;
12. 4.10: Government Expenditure on account of Natural Calamities;
13. 6.02, 6.03: Government and Corporate Expenditure on environment protection;
14. 6.09: Environment-related Subsidies under Indian Budget;
15. 6.10: Carbon credits issued to Indian Projects;
16. 6.11: Voluntary/Non-Governmental Organisations working in pro-environmental sector;
17. 6.16: Number of Eco-clubs in Schools; and
18. 6.17: Number of students pursuing environment-related higher education.

Data Quality Statement for EnviStats India

20. The role of the National Statistical Office is not just to coordinate with the different agencies of the national statistical system, for the benefit of both the data users and the data providers, but also to assure the quality of statistics being used for informed decision-making in government and business, for research and education, and for informed discussion and debate in the media. The dimension of 'quality' can be assessed through various aspects - methodological soundness, relevance, timeliness and punctuality, accessibility and clarity, coherence and comparability.

21. In terms of timeliness, it may be noted that of the 203 statements of the publication, 158 give information for the years 2017 or later. As regards punctuality, since the first release, the publication has been made available on the last working day of March, which is the targeted date of release.

22. Coverage of the publication and its adherence to standards can be assessed with reference to the indicators prescribed by FDES 2013. The following table, Table 5, gives Component-wise, Tier-wise coverage of EnviStats-India vis-à-vis FDES 2013.

Table 5
Component-wise summary of indicators

Tier	Component 1	Component 2	Component 3	Component 4	Component 5	Component 6	All
I	28	27	14	4	12	3	88
II	32	27	23	3	12	9	106
III	9	5	0	0	4	5	23
Total	69	59	37	7	28	17	217

23. In line with the motto of the National Statistical Office to provide easy access to “Data for Development”, all tables of EnviStats India are available for free downloading from the website of MOSPI.

24. The National Statistical Office recognises the fact that choices made today influence health of our future. But even with the data revolution being experienced presently, it is quite possible that the quality of those data insights and human judgements will be reduced if seen in silos much like the tale of five blind men who touch the same elephant, yet reach different conclusions about the experience. The effort of bringing together these multitude of datasets, in the form of extant publication, EnviStats India, is a step by the NSO towards ensuring a “better environment, better tomorrow”.
