

Compilation of the Solid Waste Accounts

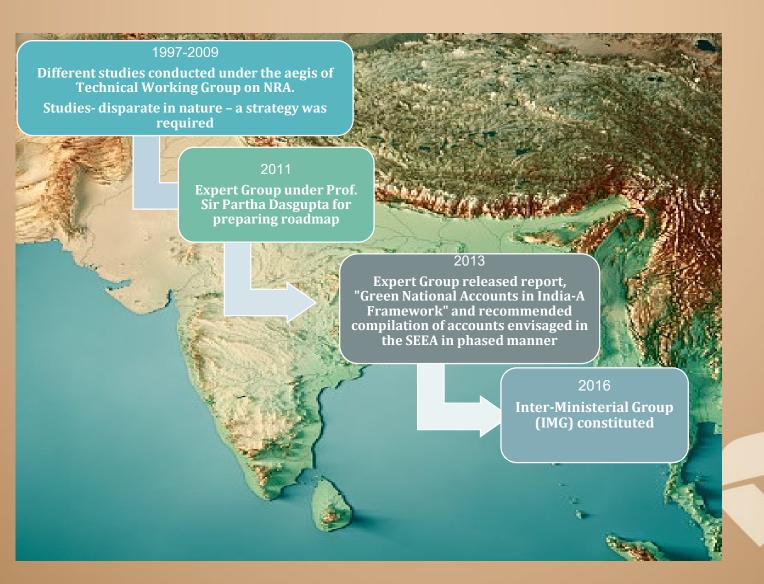


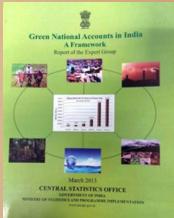




Social Statistics Division NSO, MoSPI 3rd July, 2023

Environment Accounts in India- Background





Environment Accounts- Coverage Till Date

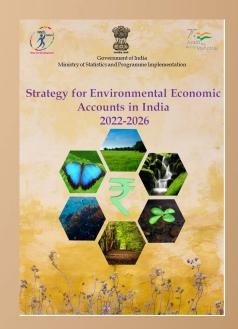
India adopted SEEA in 2018 and has been regularly compiling Environmental Accounts



fppt.com

Strategy for Environment Economic Accounting: 2022:2026

- NSO, India released the Strategy for Environmental Economic Accounting.
- To provide a road-map for development of Environmental Economic Accounting in India.
- NSO India- trying to explore other areas :
 - ✓ Material Flow Accounts
 - ✓ Ocean Accounting
 - ✓ Energy Accounts
 - ✓ Thematic accounts for Biodiversity and Urban Areas
- Residual Accounts is a part of the Material Flow Accounts.

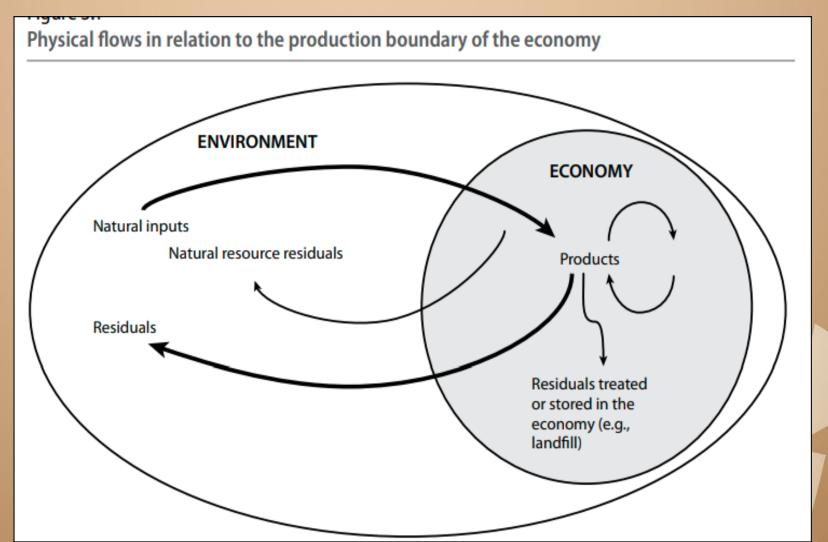




What is Residuals?

- ➤ <u>Residuals</u>: Flows of solid, liquid and gaseous materials that are discarded, discharged or emitted by establishments and households through processes of production, consumption or accumulation.
- > Categories: Solid Waste, Effluent and Air Emissions.
- ➤ <u>Residual Account</u>: organized information on the generation of residuals and its management.
- > SEEA-CF prescribes the compilation of the PSUT and MSUT.
- MoSPI started with Physical Supply and Use Tables for Solid Waste

Physical Flow-Illustration



Linkages with the SDGs

Target

Global SDG Indicators

Target 11.6: By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management

Target 12.4: By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment

Target 12.5: By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse

Indicator 11.6.1: Proportion of municipal solid waste collected and managed in controlled facilities out of total municipal waste generated, by cities

Indicator 12.4.1: Number of parties to international multilateral environmental agreements on hazardous waste, and other chemicals that meet their commitments and obligations in transmitting information as required by each relevant agreement

Indicator 12.4.2: (a) Hazardous waste generated per capita; and (b) proportion of hazardous waste treated, by type of treatment

Indicator 12.5.1: National recycling rate, tons of material recycled



Demand for Data on Residuals

61.5% solid waste processed in Karnataka, CPCB tells NGT

Of the total solid waste generated in the state, total 1,250 tonnes per day is put in landfills



Ajith Athrady, DHNS, New Delhi, JAN 23 2022, 20:05 IST | UPDATED: JAN 23 2022, 20:14 IST



Representative image. Credit: DH file photo

Approximately 11,085 tonnes of solid waste is generated per day in Karnataka, of which 6,817 tonnes per day which accounts for 61.5% is being processed, the Central Pollution Control Board informed the Southern Zone of the NGT.

Government of India India Stories

Data: Gujarat accounts for about 28% of the Hazardous Waste generated in India

BY BHARATH KANCHARLA ON DECEMBER 14, 2021







In response to a question in the Lok Sabha, the government recently shared data related to the generation of various types of waste in the last few years. Generation of all types of waste increased over the years in varying degrees. Gujarat accounted for about 28% of the hazardous waste generated in the country in 2019-20.

As per World Bank data, 2.01 billion tonnes of solid waste is generated annually around the world. As per conservative estimates, at least 33% of this waste is not managed in an environmentally safe manner. High-income countries account for 34% of the global waste while accounting for only 16% of the population. However, they are far ahead in waste collection rates with 96%, while in the case of Low-middle income and Low-income countries it is 51% and 39% respectively. Apart from waste collection, waste disposal is also an important issue. Around 37% of the global waste is disposed of in some form of landfill and 19% is recovered for recycling or composting. It is estimated that global waste will grow to 3.4 billion tonnes by 2050.

WASTE MANAGEMENT

Solid Waste Management In India: The Challenge Of Growing Mountains Of Garbage - Landfills

By 2050, India will need 88 square kilometres of land for waste disposal, said a joint report by Assocha

Written By: Aastha Ahuja | Edited By: Sonia Bhaskar | July 25, 2022 हिन्दी में पढ़े



Swachh Bharat Mission: 341 landfills are in operation in India

India generates 3.6 lakh million tonnes plastic waste, 50% of it is recycled

5 min read • 09 Aug 2022, 03:17 PM IST

The minister also said that the number of registered plastic waste processors under Plastic Waste Management Rules is 1,419.

All developed and developing countries are individually taking actions to manage



Single-use plastic items whose manufacturing, import, stocking, distribution, and sale will be prohibited with effect from the 1st July, 2022. (Bloomberg)

Around 34.7 lakh tonnes per annum (TPA) of plastic wastes was generated by India during 2019-20, Minister of State in the Ministry of Environment, Forest and Climate Change, Ashwini Kumar Choubey told the Lok Sabha.

Residual Accounts

- Material Flow Accounts broadly comprises of :
- (i) Domestic Extractions
- (ii) Exports/Imports
- (iii) Residuals.
- Residuals consists of:
 - Solid waste Accounts
 - Effluent Accounts
 - Air emission Accounts
- MoSPI attempted for the first time compilation of the Solid Waste Accounts for Delhi on a pilot basis for the year 2020-2021
- Data Source: CPCB, Delhi PCB

Solid Waste Accounts

- Management of Solid Wastes are regulated by "Solid Waste Management Rules, 2016"
- In India Solid Wastes are broadly categorized in 6 components
 - Municipal Solid Waste
 - 2. Bio-Medical waste
 - 3. Hazardous Waste
 - 4. Construction & Demolition Waste
 - 5. E-Waste
 - 6. Plastic Waste
- Management of each type of waste is governed by different laws

Salient Features of **SOLID WASTE MANAGEMENT RULES, 2016**

The Government has revamped the Municipal Solid Wastes (Management and Handling) Rules 2000 and notified the new Solid Waste Management Rules, 2016 on April 8, 2016. The salient features of the SWM Rules, 2016 are as under;

- 1. Areas Cover: These rules are applicable to;
- Every urban local body (Mega city to Panchayat level),
- outgrowths in urban agglomerations,
- census towns as declared by the Registrar General and Census
- notified areas,
- notified industrial townships, areas under the control of Indian Railways,
- airports/ airbases
- Ports and harbours. defence establishments
- special economic zones,
- State and Central government organisations.
- religious and historical importance as may be notified by respective State government from time to time and
- every domestic, institutional, commercial and any other non residential solid waste generator situated in the areas.

2. The Waste Generators

- · Every household
- Event organizers
- Street Vendors
- RWAs & Market Associations
- Gated Community having more than area 5000 sq.m.
- Hotels & restaurants, etc.



fppt.com

Various Rules w.r.t Solid Wastes

Solid Waste Management Rules, 2016

Municipal Solid Waste Rules.

Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016

Plastic Waste Management (Amendment) Rules, 2018 Bio Medical Waste Management Rules, 2016

E-Waste Management Rules, 2016 Construction and Demolition Waste Management Rules, 2016

Form III Rule 19(6), 24(1) -Annual Report submitted by Operator of Facility to Local Body: On or before 30th April Form 4 Rule 6(5), 13(8), 16(6) and 20(2) -Annual Returns submitted by Occupier handling and Operator of disposal facility to SPCB on or before 30th June

Form V Rule 17(2) - Annual Report submitted by Local Authority to SPCB on or before 30th Form IV Rule
13(1) - Annual
Returns
submitted by
Occupier of HCF
or Operator of
treatment facility
to CPCB on or
before 30th June

Form 3 Rule
18(1) - Annual
Returns by
producer or
manufacturer
or refurbisher
or dismantler
SPCB on or
before 30th
June

Form III Rule 8(2) -Annual Report submitted by Local Authority to SPCB on or before 30th June

Format-Supply Table

Physical Supply Table									
State:									
Year:					Unit: Tonnes				
	Generation of Solid Waste during the year								
Sr. No.	Waste Category	Households	Industry	Hotels/Shops/Restaurants	Imports	From the Environment	Others*	Stock of last year solid waste	
1	Municipal Solid Waste								
2	Bio Medical Waste								
3	Hazardous Waste								
4	E-Waste					V			
5	Plastic Waste								
6	Construction and Demolition Waste						K		

Format-Use table

Physical	al Use Table												
State:													
Year:					Unit: Tonn	es							
	Disposal and Treatment of Solid Waste												
Sr. No.	Waste Category	Landfill/Dumsite											
		Sanitary Landfill	Dumpsite	Incineration	Recycling	Reuse	Composting	Vermi-Composting	Biomethanation	Waste to Energy	Export	To the Environement	Others*
1	Municipal Solid Waste												
2	Bio Medical Waste									7.00			
3	Hazardous Waste							1-1-					
4	E-Waste			Table 1									
5	Plastic Waste												
	Construction and Demolition Waste										▼	Z	

Use of a PSUT

- Compilation of PSUT would help:
 - ❖ To identify sector-wise sources of waste.
 - To identify utilization of waste (recycle, landfill etc.) and the remaining waste entering the environment which needs to be controlled.
 - ❖ To minimize the waste generation at source and maximise reuse of products.
 - ❖ At local level, policy can be prepared on whether landfill/ recycling unit/ incineration is required on the basis of the type of waste generated.
 - ❖ Estimation of different type of waste, at local level, will be helpful in taking policy decision on waste management like establishment of Recycling

Format-Survey

State:-		Unit (Tonnes)									
	MSW Data Collection Format										
				lock I							
	District										
			District 1	District 2	District n	Total					
One time		Population	District	District 2		District II	i Otai				
	nation	No of Households									
_	→	No of commercial units									
			В	Block II							
ation	Day 1	From Households/ Residential Area									
ed (in Tonnes		From Commercial units (Shops/Restaurants etc.)									
Collected 15 Days i	Day 2	From Households/ Residential Area									
Waste C		From Commercial units (Shops/Restaurants etc.)									
Solid	Day 3	From Households/ Residential Area									
Quantity of Solid Waste Collected (in Tonnes 15 Days information		From Commercial units (Shops/Restaurants etc.)									
ਰੱ		From Households/ Residential Area									
	Day 4	From Commercial units					fppt.com				

Challenges and way forward

- Availability of disaggregated data for compilation of PSUT is a challenge
- Generation of Solid Waste category wise is mostly not available
- Use of solid waste category-wise is available for few type of solid wastes.
- Segregation of wastes into different types of waste is not available
- An effective data-capturing mechanism may be developed so that data flow is smoothened.
- Cooperation and support from the CPCB and State PCB is required.
- Regular meetings with the stakeholders is needed.

THANK YOU!

