



SEEA Ecosystem Extent & Services

National Statistical Office, India

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Accounts in India**

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far**

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Brief History of Environment Accounts in India

Mandate: 'Development of Environment Statistics, development of methodology, concepts and preparation of National Resource Accounts for India.'

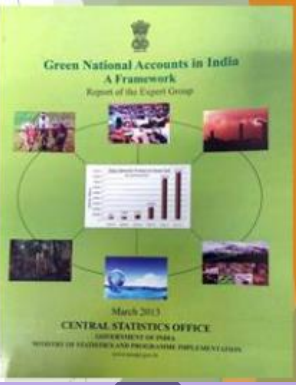
1997-
2009

2011

2013

2016 and
2017

- ❖ Different studies conducted under the aegis of Technical Working Group on NRA.
- ❖ Studies- disparate in nature – a strategy was required
- ❖ Expert Group under Prof. Sir Partha Dasgupta constituted for preparing roadmap
- ❖ Expert Group released report, "Green National Accounts in India- A Framework" and recommended compilation of the SEEA accounts in phased manner
- ❖ Inter-Ministerial Group (IMG) constituted
- ❖ NCAVES Project launched and piloted




**ECOSYSTEM
ACCOUNTS FOR
INDIA**
Report of the NCAVES Project



Coverage till date

India has been regularly compiling Environmental Accounts following SEEA since 2018

Extent	Condition	Services	Thematic	Individual
<ul style="list-style-type: none">• Land• Change Matrix of LULC• Wetland• Forests	<ul style="list-style-type: none">• Soil Nutrient Index• Water Quality Accounts• Condition of Forests• Condition of Croplands• Condition of Wetland	<ul style="list-style-type: none">• Crop Provisioning Services• Timber and NTFP Provisioning Services• Carbon Retention Services of Forest• Fish Provisioning Services• Soil Erosion Prevention Services• Nature based Tourism Services	<ul style="list-style-type: none">• Biodiversity – Extent of Protected Areas• Species Richness of IUCN Red List Species• Taxonomic Diversity	<ul style="list-style-type: none">• Growing stock of Timber and Carbon• Minerals• Energy (Asset & PSUT)• Solid Waste Accounts (PSUT)• Material Flow Accounts (Core)
				 

Ecosystem Extent Accounts



- Size of an ecosystem asset.
- Mostly measured in spatial area.
- Information on composition of and changes in, ecosystem types within an area.
- Demonstrates in an accessible and readily interpreted way
- Supports derivation of coherent indicators

Ecosystem Extent-Examples



Forest Extent Accounts

Change Matrix for Land Use Land Cover (LULC)

LULC-CLASSES		INDIA								Grand Total
		2011-12								
		FL	1.1.4	1.2	1.3	1.4	1.5	1.6	1.7	
2005-06	Farmland (FL)	1565.43	28.97	1.56	3.20	3.32	0.06		4.05	1606.60
	1.1.4 Fallow	65.10	130.34	0.55	1.11	0.01			1.13	198.24
	1.2: Barren/unculturable/Wastelands	9.98	1.69	374.30	1.08	0.57	0.17	1.89	1.06	390.73
	1.3: Built-up				102.09	0.01			0.01	102.11
	1.4: Forest	3.61	0.01	0.92	0.24	728.29	0.18	0.16	0.50	733.91
	1.5: Grass / Grazing	0.35	0.21	0.29	0.13	0.38	33.27	0.60	0.57	35.79
	1.6: Snow and Glacier			17.88		4.11	0.82	61.29	0.01	84.11
	1.7: Wet lands / Water bodies	2.37	0.14	0.91	0.11	0.17	0.97		131.09	135.77
Grand Total		1646.85	161.36	396.40	107.96	736.86	35.46	63.95	138.42	3287.26

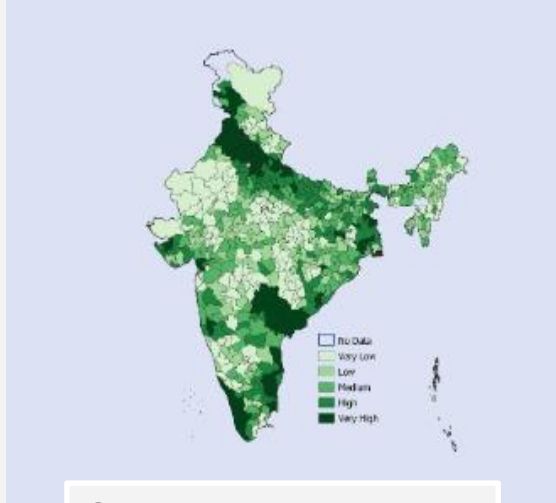
Note: Farmland includes Cropland, Current Shifting Cultivation and Plantation

2019-20				
(Area in sq. km)				
Type of Forest	Opening	Addition	Reduction	Closing
Very Dense Forest	99,278	2,009	1,508	99,779
Moderately Dense Forest	3,08,472	4,674	6,256	3,06,890
Open Forest	3,04,499	12,920	10,299	3,07,120
Scrub	46,297	5,562	5,320	46,539
Non-Forest	25,28,923	9,267	11,049	25,27,141
2017-18				
Type of Forest	Opening	Addition	Reduction	Closing
Very Dense Forest	98,158	1,969	849	99,278
Moderately Dense Forest	3,08,318	4,691	4,537	3,08,472
Open Forest	3,01,797	15,141	12,439	3,04,499
Scrub	45,979	4,466	4,148	46,297
Non-Forest	25,33,217	13,510	17,804	25,28,923
2015-16				
Type of Forest	Opening	Addition	Reduction	Closing
Very Dense Forest	88,633	13,673	4,148	98,158
Moderately Dense Forest	3,12,739	25,282	29,703	3,08,318
Open Forest	3,00,123	37,975	36,301	3,01,797
Scrub	42,302	14,542	10,865	45,979
Non-Forest	25,43,672	25,559	36,014	25,33,217

Provisioning Services

Ecosystem Services: Contributions of ecosystems to benefits used in economic and other human activities.

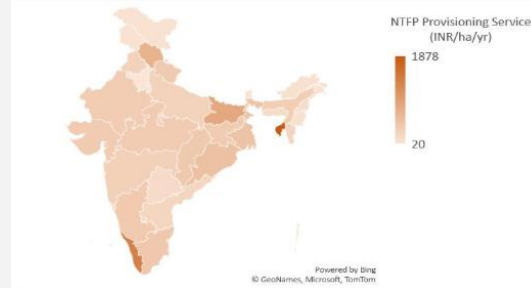
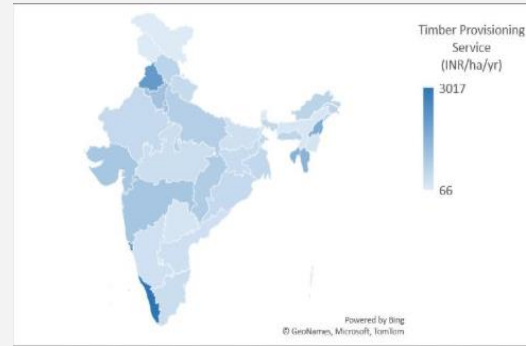
Crop Provisioning Services



Services provided by the Croplands for the generation of the food and non-food crops.

Using Data from M/o Agriculture and Farmers Welfare

Timber and NTFP Provisioning Services



Using Data from National Accounts Statistics and WB database

Fish Provisioning Services

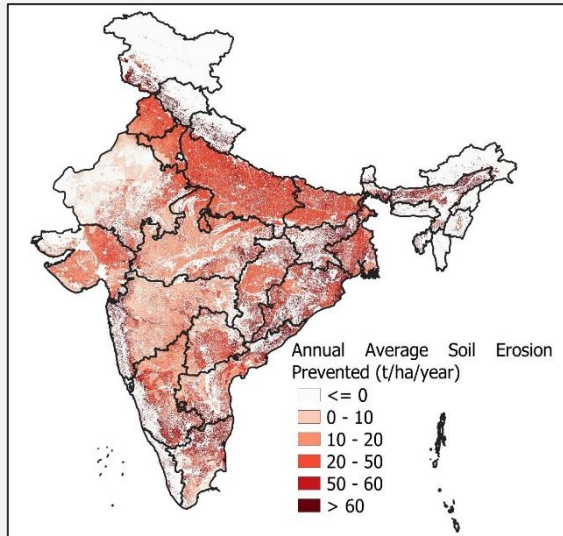
Services provided by the Water bodies (inland) for the production of the fishes.

The estimates compiled are limited to tanks, ponds, lakes, reservoirs etc. that are provided for lease/rent.

Using Data from the States

Regulating Services

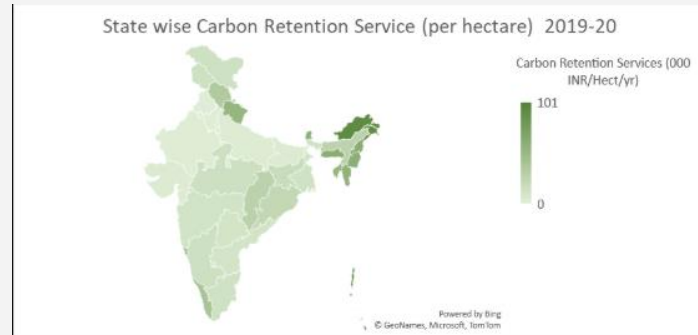
Soil Erosion Prevention Services



Using RUSLE Model

Regulating and maintenance Services: Those services which result from the ecosystems' ability to regulate and maintain climate, hydrological and biochemical cycles, and various biological processes in ranges that benefit individuals and society.

Carbon Retention Services

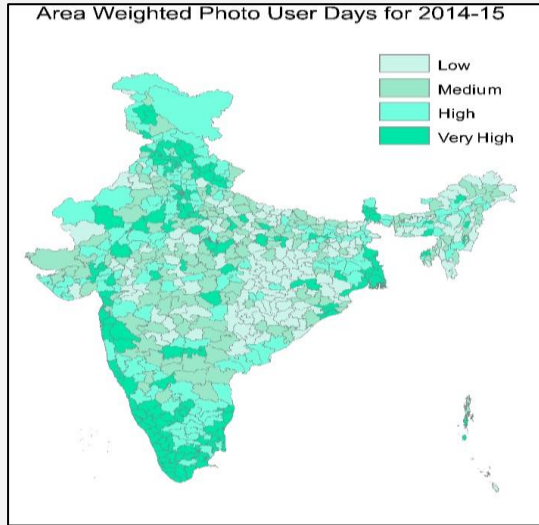


Using Social Cost of Carbon Approach



Cultural Services

Nature Based Tourism Services

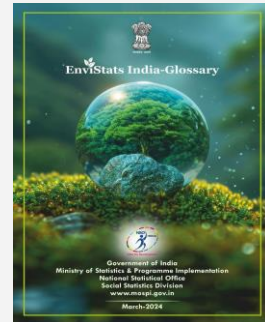
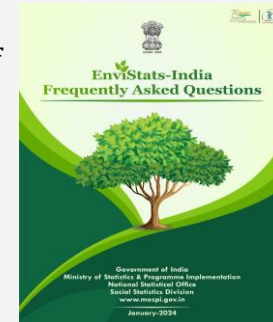
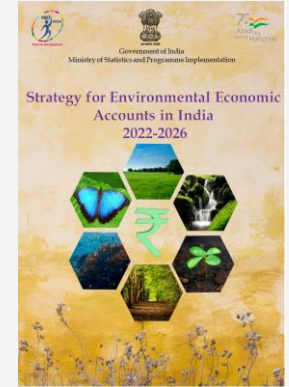


Cultural Services: Include symbolic benefits through recreation, knowledge development, relaxation and spiritual reflection



Challenges and Way Forward

- ❖ Data gaps
 - ❖ Lack of Timeliness in receiving data
 - ❖ Information constrained in silos
 - ❖ Need of Capacity building
-
- ❖ 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 :
 - ✓ Ocean Ecosystem Accounting
 - ✓ Thematic accounts for Biodiversity and Urban Areas
-
- ❖ Constantly endeavors towards expanding the scope and coverage of the accounts
-
- ❖ **Lesson Learnt:** Need for awareness, need for Data Integration
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- ✓ EnviStats India: Frequently Asked Questions & EnviStats India: Glossary for the ease of the users.
 - ✓ Capacity Building Workshops at the Sub-National Level
 - ✓ Frequent interactions with other agencies



Thank You

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