



**Report of the Seminar on**  
**Data for Sustainable Development:**  
**India's Environmental Accounts and its**  
**Role in Policy and Decision-Making**

(in celebration of 'Azadi ka Amrit Mahotsav')

*June 28<sup>th</sup>, 2022*

**Social Statistics Division**  
**National Statistical Office**  
**Ministry of Statistics & Programme**  
**Implementation**  
**Government of India**  
**New Delhi**

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## Introduction

1. The Azadi Ka Amrit Mahotsav is an initiative of the Government of India to celebrate and commemorate 75 years of independence and the glorious history of its people, culture and achievements. The official journey of Azadi Ka Amrit Mahotsav commenced on 12<sup>th</sup> March 2021 which started a 75-week countdown to our 75<sup>th</sup> anniversary of independence and will end post a year on 15<sup>th</sup> August 2023. Following are the five themes of celebration of Azadi Ka Amrit Mahotsav.

- (i) Freedom Struggle
- (ii) Ideas@75
- (iii) Resolve@75
- (iv) Actions@75
- (v) Achievements@75

2. The Ministry of Statistics and Programme Implementation (MoSPI), Government of India celebrated Azadi ka Amrit Mahotsav week starting from 27<sup>th</sup> June 2022 by organizing series of activities. As a part of the celebration the Social Statistics Division, National Statistical Office (NSO), MoSPI, conducted a half a day seminar with the technical collaboration of World Bank and UN Environment Programme in hybrid mode on **'Data for Sustainable Development: India's Environmental Accounts and its Role in Policy and Decision Making'** on 28<sup>th</sup> of June, 2022.

3. India attaches lot of importance to nature. Living in harmony with nature has been an integral part of Indian culture. This has been abundantly reflected in a variety of traditional practices, religious beliefs, rituals, folklore, arts and crafts, and in the daily lives of the Indian people from time immemorial. Endorsing this tradition, the Directive Principles of State Policy (DPSP), given in the Constitution of India contain provisions that reflect the State's commitment to protect the environment, including forests and wildlife, and which enjoin upon the citizens of India the responsibility to protect and improve the environment.

4. Sustainability and environment are the two sides of the same coin. One cannot achieve sustainability without compromising the environment or the 'mother nature'. India has always advocated for universal brotherhood. It was believed and carried forward by progeny that the world is one family and the earth is our home and only one home. The seminar was organized with an intent to provide an accelerated push towards 'valuing nature' and using these values in the global and national statistics aligning with the International Statistical Standard "System of Environment Economic Accounts (SEEA) framework".

5. With the global commitment to the 2030 Agenda for Sustainable Development, the use of the SEEA in the assessment of natural resources has increased manifolds. The SEEA framework is aligned with the SDGs and around 40 global indicators for nine

Sustainable Development Goals (SDGs) can be evaluated using SEEA data. These accounts provide a consistent monitoring framework that produces actionable indicators on ecosystem extent and condition, as well as the supply and use of ecosystem services. It can also be used to inform a wide range of climate change related policy questions related to climate impacts and adaptation strategies.

6. In accordance with the recommendation of the Expert Group on Green National Accounts under the Chairmanship of Prof. Sir Partha Dasgupta, Frank Ramsey Professor Emeritus of Economics, University of Cambridge, United Kingdom, the Ministry of Statistics & Programme Implementation has adopted the SEEA framework in 2018 and has been regularly compiling accounts on various ecosystems. The seminar enabled the Ministry to showcase the work done by India in the domain of Environment Accounting and to pave the way for future endeavors toward expanding the coverage of the Environment Accounts in India. Apart from this, the objectives of the seminar were to discuss the environmental economic accounts and its linkages with policies and decision making and ocean accounting.

### Schedule of the Event

7. The seminar, in hybrid mode, was held at the India International Centre, Lodhi Road, New Delhi. The event witnessed remarkable participation (around 370 participants) from all over the nation and several international agencies. The seminar commenced with the opening session followed by two technical sessions respectively focusing on SEEA perspective and its inter-linkages with SDGs and ocean and water related accounts including fisheries and aquaculture. The schedule of the event is given below.

<b>09:55-10:00AM</b>	<b>Arrival of Guests</b>	
<b>Opening Session</b>		
<b>10:00-10:05 AM</b>	Welcome Address: Dr. G.P. Samanta, CSI and Secretary, MoSPI	
<b>10:05-10:15 AM</b>	Inaugural Address: Shri Suman K. Bery, Vice Chairman, NITI AAYOG	
<b>10:15-10:20 AM</b>	Address: Shri Ashish Chaturvedi, Head, Environment, Energy and Resilience, UNDP, India	
<b>10:20-10:25 AM</b>	Remarks: Shri Arun Kumar, Senior Economic Advisor, MoEF&CC	
<b>10:25-10:30 AM</b>	Vote of Thanks: Shri M.M. Hasija, DG(C&A), MoSPI	
<b>10:30 -10:40 AM</b>	A Video on achievements of MoSPI	
<b>10:40:11:00 AM</b>	Tea Break	
<b>Environment Accounting- SEEA perspectives and it's inter-linkages with SDGs</b>		
<b>Moderator: Ms. R. Savithri, ADG(SSD), MoSPI</b>		
<b>11:00-11:10 AM</b>	Environment Accounts and its inter-linkages with SDGs	Ms. Anshu Singh, DDG, MoEF&CC

<b>11:10-11:20 AM</b>	Implementing Environmental Accounting in decision making - National Perspective	Dr. Purnamita Dasgupta, Professor, IEG
<b>11:20-11:30 AM</b>	Linkages of Environmental Accounts with policies at the Sub -National level	Dr. T.V. Ramachandra, Coordinator, Energy & Wetlands Research Group IISc, Bangalore
<b>11:30:11:40 AM</b>	Usage of Environmental Accounting for policy framing- Examples from other countries	Mr. Pablo Cesar Benitez, Senior Environmental Economist, World Bank
<b>11:40- 11:55AM</b>	Discussions / Questions and Answers	
<b>11:55-12:00 Noon</b>	Wrapping up of Session	
<b>Panel Discussion: Ocean and Water related accounts including fisheries and aquaculture</b>		
<b>Moderator: Dr. K. S. Kavi Kumar, Professor, Madras School of Economics, Chennai</b>		
<b>12:00-12:05 PM</b>	Brief Introduction to Ocean Accounting	Dr. K.S. Kavi Kumar, Professor, Madras School of Economics
<b>12:05-12:15 PM</b>	Vision for India's Blue Economy and the role of National Ocean Accounts	Dr. TVS Udaya Bhaskar, Scientist-F, INCOIS, Hyderabad
<b>12:15-12:25 PM</b>	Accounting for Marine fisheries, aquaculture, fish processing and fish provisioning services	Dr. P. Shinoj, Senior Scientist, ICAR-CMFRI, Kochi
<b>12:25-12:35 PM</b>	Approach towards development of the Condition Accounts for the Oceans	Dr. K. Ramu, Scientist E, NCCR, Chennai
<b>12:35-12:45 PM</b>	Challenges for Ocean Accounting and Global best practices in addressing such challenges	Mr. James Blignaut, World Bank
<b>12:45- 12:55 PM</b>	Discussions/ Questions and Answers	
<b>12:55-1:00 PM</b>	Looking Forward and Next Steps	Ms. R. Savithri, ADG, SSD, MoSPI
<b>1:00-2:00PM</b>	Lunch	

8. The event was also live streamed through social media platforms such as Facebook and YouTube. The links for the live events is given as below:

YouTube: <https://youtu.be/SpLcSeqcxIY> and

Facebook: [https://fb.watch/d\\_dkE3gypk/](https://fb.watch/d_dkE3gypk/).

9. All the recordings, the presentations, videos and all the relevant materials have been uploaded in the Ministry's website and can be found at <https://mospi.gov.in/web/mospi/seminar-on-india-s-environmental-accounts-and-its-role-in-policies>.

## Promotion & Media Coverage

10. All the users of EnviStats India as per the database maintained by the Division, research institutions and government organizations both national and international were informed through email. In addition, State Forest departments, State Biodiversity Boards, State Planning Departments and State Directorate of Economics and Statistics (State DES's) were also requested to join the seminar through virtual mode. Apart from that, the event was also promoted on various social networking platforms.

### Flyers of the event

The flyer features a green background with white daisies. At the top left is the NSO India logo. In the center is the Government of India emblem. To the right is the 75th Azadi Ka Amrit Mahotsav logo. The main text reads: "Seminar On 'Data for Sustainable Development: India's Environmental Accounts and its Role in Policy and Decision-Making' as a part of the celebration of AZADI KA AMRIT MAHOTSAV". A registration link is provided: "REGISTER NOW at https://tinyurl.com/2d4fycwm". The date and time are "28th June, 2022 10:00 AM IST". At the bottom, there are social media icons for Instagram, Facebook, and Twitter, along with the website "www.mospi.gov.in" and the "GoIStats" logo.

The flyer has a green background with leaf patterns. It includes the NSO India logo, the Government of India emblem, and the Ministry of Statistics and Programme Implementation logo. The 75th Azadi Ka Amrit Mahotsav logo is also present. The title is "Live session on Environment Accounting- SEEA perspectives and its inter-linkages with SDGs". Five speakers are listed with their photos and names: Ms. R. Savithri (Moderator), Ms. Anshu Singh (Speaker), Dr. Purnamita Dasgupta (Speaker), Dr. T.V. Ramachandra (Speaker), and Mr. Pablo Benitez (Speaker). The date and time are "Tuesday June 28, 2022 11:00-12:00 Noon". At the bottom, there are social media icons for Facebook, Instagram, and Twitter, along with the website "www.mospi.gov.in" and the "GoIStats" logo.

The banner features the NSO India logo (Data for Development) on the left, the Government of India Ministry of Statistics and Programme Implementation logo in the center, and the 75th Azadi Ka Amrit Mahotsav logo on the right. The main title is "Panel Discussion on 'Ocean and Water related accounts including fisheries and aquaculture'". Below the title are five circular portraits of the participants: Dr. K.S. Kavi Kumar (Moderator), Dr. TVS Udaya Bhaskar (Speaker), Dr. P. Shinoj (Speaker), Dr. K. Ramu (Speaker), and Mr. James Blignaut (Speaker). The event details are listed as Tuesday, June 28, 2022, from 12.00-13.00 PM. At the bottom, there are social media icons for GoIStats on Twitter, Facebook, and Instagram, along with the website www.mospi.gov.in.

## Highlights of the Opening Session

11. The opening session witnessed the gracious presence of eminent dignitaries: - Dr. G. P. Samanta, Chief Statistician of India (CSI) and Secretary, MoSPI; Shri Suman K Bery, Vice Chairman, NITI AAYOG; Shri Ashish Chaturvedi, Head, Environment, Energy and Resilience, UNDP, India; Shri Arun Kumar, Senior Economic Advisor, M/o Environment, Forest and Climate Change (MoEF&CC) and Shri M. M. Hasija, Director General (Coordination and Administration), MoSPI.

12. **Dr. G. P. Samanta, CSI & Secretary, MoSPI** formally inaugurated the event by emphasizing the fact that the primary aim of National Statistical System is to provide timely, reliable and comprehensive data in order to facilitate the Government for policy formulation, monitoring, evaluation and recommendations for further improvements. In his address, he brought out the crucial role played by MoSPI in presenting the true picture of the various facets of the society especially given the fact that the official statistics system in India is laterally decentralized among various Ministries of the Government of India at the central level and vertically decentralized between the Center and the State. Highlighting the aspects of 'evidence-based decision making', it was stressed that Environmental Accounts, one of the core subjects dealt by the Ministry, have the potential to measure the links between the environment and the economy. Dr. Samanta also highlighted the fact that in line with the vision of the MoSPI, constant efforts are being made to mobilize all the environment related information sourced through multiple agencies so that policy decisions are framed by 'maintaining harmony with nature'. Talking in brief about the initiatives of the Ministry taken in the area of Environmental Accounts, Dr. Samanta spoke about India's adoption of the

System of Environmental-Economic Accounting (SEEA) framework in 2018, which is the internationally agreed statistical standard. Further, he talked about the recently released 'Strategy for Environment Economic Accounts in India:2022-2026' which is envisaged to be a guidance tool for the long term and the short-term goal in the domain of Environment Accounts in India. Mentioning about NSO, India's participation in the Global Ocean Accounts Partnership (GOAP), he showed his zeal and encouragement towards compilation of the Ocean Accounts in India.

13. The opening session was followed by a key note address by **Shri Suman K. Bery, Vice Chairman, NITI AAYOG** who was the Chief Guest for the Seminar. He appreciated the fact that MoSPI embraced environment accounts at an early stage and is continuing its efforts in this direction. He highlighted two major concerns related to the environmental accounting- first a large volume of unpriced natural inputs enters the production process (which we refer as natural capital), but they being unvalued do not find a place in the national accounts. Secondly, the cross-boundary nature of environment accounts makes it difficult to gel in with the conventional national accounts. He stressed upon the fact that there has been increasing recognition that continuing economic growth and human welfare are dependent upon the benefits obtained from the nature which often go unnoticed and unpriced.

14. Talking about the India's unique maritime position and a coastline extending to 7517 km across nine states, Shri Bery emphasized the importance of ocean accounts and its role in the economy. He indicated the fact that the thrust area for the Government of India has been to evolve and strengthen its policies and programmatic efforts on India's Blue Economy-the sustainable use of the ocean resources for economic growth, improved livelihoods and jobs while preserving the health of the ocean. He talked in detail about the Draft Policy Framework on India's Blue Economy and also commended the work done by NSO on accounts such as Wetlands Extent Accounts, Water Quality Accounts, Coastal Water Quality Index. He suggested that NITI AAYOG and MoSPI should continue its partnership especially given the fact that 'environment and climate change concerns 'are transboundary in nature and it is utmost important to work together in order to protect the nature and reduce its impact. He advocated the use of the SEEA expressing very clearly that the benefits of SEEA are broadly captured in relation to policies concerning sustainable development- one of the most pressing policy issues for current and future generations.

15. Towards the end, he motivated each and every individual to use the natural resources more responsibly and encouraged NSO to continue producing good quality robust statistics that will arm the policy makers with the right information for evidence-based decision making.

16. Another eminent dignitary who graced the occasion was **Shri Ashish Chaturvedi, Head Environment, Energy and Resilience, UNDP, India**. He drew attention towards the triple planetary crisis related to climate change, biodiversity and circularity that is currently being faced across the globe. He stated that adopting SEEA can contribute to policy coherence and SEEA has significant potential in linking SDGs with the environment which facilitates the policy makers in various aspects. Shri Chaturvedi stated that pollution in all its dimension, especially marine plastic pollution is the major concern with regards to the oceans. He talked about the challenges India is facing while trying to decarbonizing the economy and decoupling economic growth from resources use, at the same time, making efforts to provide a decent livelihood to its citizen. He emphasized that its high time mankind starts to think about how to deal with the impact of climate change such as protecting coasts against sea level rising. Shri Chaturvedi highlighted the fact that SEEA provides better understanding for the triple planetary crisis and also establishes that it is critical to pay close attention to environmental stocks and flows for sustainable growth. Regarding the ocean, he stressed on the fact that the oceans are a massive carbon sink, a rich source of biodiversity but are sufferers of the impacts of climate change and that we all must act in unison to save and protect the oceans.

17. Shri Arun Kumar, Senior Economic Advisor, M/o Environment, Forest and Climate Change (MoEF&CC) commended MoSPI for organizing the seminar on environmental accounting that seeks to cover the various facets w.r.t. its role in policy making. He essentially touched upon four important points:

- (i) The natural capital provides a myriad of ecosystem services and improper management of these resources may lead to its degradation and loss threatening disruptions of economic supply chains. This might be a cause of conflict over scarce resources and damage therein to the most vulnerable population resulting in their displacement.
- (ii) In order to gauge the sustainability and the well-being, it is important to broaden the horizons beyond GDP. SEEA helps in doing this by organizing and presenting statistics on the environment and its relationship with the economy.
- (iii) The concept of Environmental Accounts has played an important role in the management of the environmental assets and policy making in India. Several references from the Forestry Sector, Mineral Accounts, Ocean Accounts, Water Provisioning Services and Biodiversity information were highlighted.
- (iv) Challenge of obtaining good quality data, varying reference period and uniform data definition on which rests the compilation of the accounts which feeds into the decision system.

18. Shri M. M. Hasija, DG (Coordination and Administration), MoSPI expressed his sincere gratitude to all the eminent dignitaries on the dice, Shri S. L. Meenaria, Director General (Statistics), MoSPI who could not join the event and all the national and international participants. He also thanked World Bank and United Nations

Environment Programme for their support. Sincere appreciation was also expressed for Ministry of Environment Forests and Climate Change and other line Ministries for their support and cooperation. He emphasized on the fact that seminars of this kind would enable to have better understanding and knowledge about the environment accounting and its linkages with policies.

19. A video created in-house by the division, which showcases India's 5 year's achievements in compilation of the Environment Accounts was played. This also presented the 5 year's future strategy for the compilation of the Environmental Economic Accounts in India. The video was much appreciated by all the participants.

20. The central idea that surfaced during the session was that environmental concerns do not respect any border and affect all the lives of the current and future generations. It was duly acknowledged that environment and sustainability are the road towards prosperity and policies need to be framed mainstreaming the 'environment' into decision making.

### Glimpses of the Opening Session

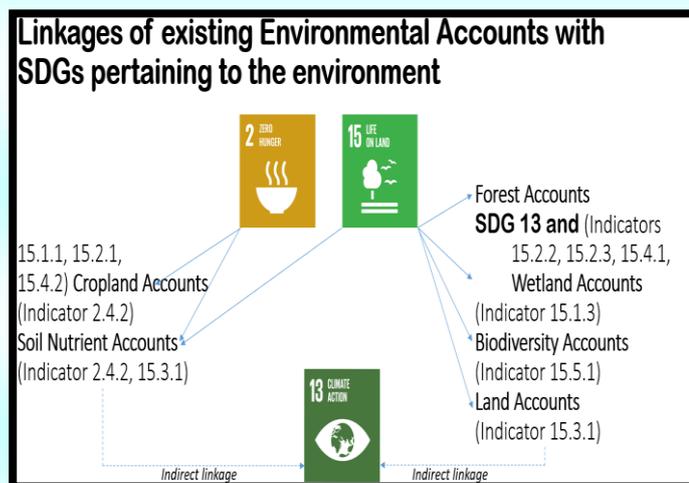


## Highlights of the Technical Session on “Environment Accounting- SEEA perspectives and it’s inter-linkages with SDGs”

21. The first technical session of the event on the theme “SEEA perspective and its inter-linkages with SDGs” was dedicated to the discussions on the efforts made by India in the realm of Environment Accounting, the linkages of the SEEA and the SDGs and applications of the SEEA at the sub-national level. The session was moderated by Ms. R. Savithri, Additional Director General, Social Statistics Division, MoSPI. The session witnessed deliberations from distinguish speakers- Ms. Anshu Singh, Deputy Director General, MoEF&CC; Dr. Purnamita Dasgupta, Professor, Institute of Economic Growth; Prof T. V. Ramachandran from Indian Institute of Science (IISc), Bangalore and Mr. Pablo Cesar Benitez, World Bank.



22. Ms. Anshu Singh, Deputy Director General, MoEF&CC rightfully highlighted the linkages of the SEEA accounts with SDGs and laid emphasis on the fact that policies should be backed by robust data on Environmental Accounting. She stated that the System of Environmental-Economic Accounting (SEEA) transforms disparate economic and environmental information

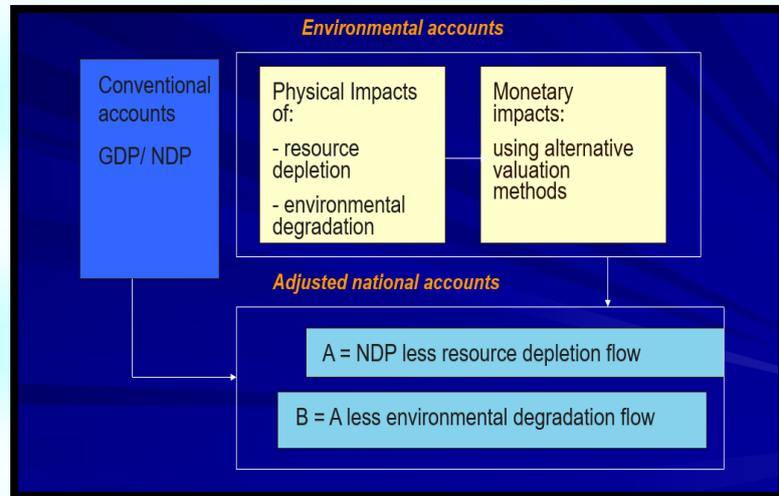


into internationally comparable statistics using an agreed-upon set of standard concepts, definitions, classifications, accounting rules and tables. As an integrated statistical framework that is fully aligned with the System of National Accounts (SNA), the SEEA is uniquely positioned to measure progress toward the SDGs on the economy-environment nexus. She highlighted the fact that SEEA supports the direct compilation of 40 SDG indicators and provide supplemental information for numerous others.

23. Relating to the SEEA Accounting in policy framing Ms. Singh informed about the Compensatory Afforestation Fund Management and Planning Authority (CAMPA) which is based on the ecosystem accounting. She also talked in brief about the application of SEEA by the National Centre for Sustainable Coastal Management

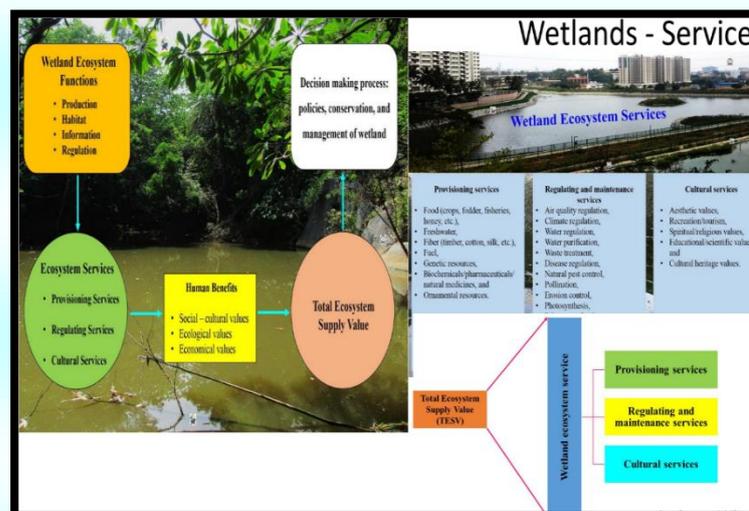
(NCSCM) in the coastal areas of some states to estimate the monetary benefits of goods and services of the coastal ecosystems. The Economic Evaluation of Tiger Reserves under Environmental Accounts and SDG 15.5 (Protect Biodiversity and Natural Habitat), Water Accounts and Energy Accounts were also touched upon in her talk.

24. Dr. Purnamita Dasgupta, Professor, Institute of Economic Growth highlighted the use of Environmental Economic Accounts in understanding and supporting many decisions which revolve around the interaction of the economic system with the environment system in



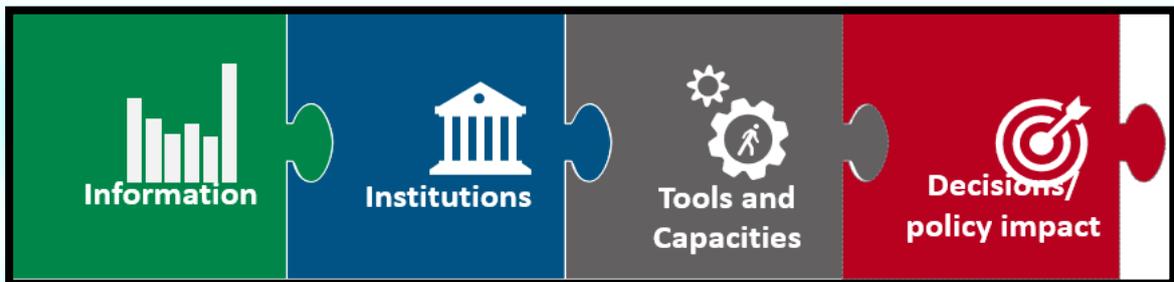
order to fulfil societal development well-being goals. She explained elaborately about the various benefits derived from the Forest Ecosystem services emphasizing the fact that 'Natural Resource Accounting' complements and expands the SNA to show inter-relations between economy and environment. Her deliberations also included examples of ecosystem accounts from other nations for instance Australia (asset accounts for water, land etc.), Canada (natural resource asset accounts), Columbia (asset accounts for oil, gas coal) etc. Flagging the various challenges in the application of environmental accounting in decision making, she stressed on immediate need of strengthening, implementation and enhancement of environmental accounting in decision making.

25. A strong statistical set-up demands good quality sound data not only at the central level but also at the sub-national level. Prof T. V. Ramachandran, Indian Institute of Science, Bangalore mentioned compiling ecosystem extent accounts using 'Big data' and classification through ML algorithm. He elaborated geo-visualization of land cover dynamics through 'Artificial Intelligence'. He presented the ecosystem condition accounts for Karnataka State and explained the methodology for valuation of ecosystem



services apart from elaborating about the Karnataka’s wetland’s ecosystems. Last but not the least, Prof Ramachandran also highlighted the scenario-based analysis through artificial intelligence in Karnataka. With Prof. Ramachandran talking in depth about the Karnataka’s environmental accounts, a path has been paved for the other states to take up such activities and come up with a set of environmental accounts on its own so that estimates at the central level can be compiled using a ‘bottom-up’ approach rather than a ‘top-to-bottom’ approach.

26. NSO, India has compiled Environment accounts on some selected ecosystems, but the scope ahead is enormous. Learning from the experiences of other countries helps in expanding the scope and coverage while gaining wisdom through global efforts. Mr. Pablo Cesar Benitez’s, World Bank discourse on the usage of the SEEA Accounts in policy framing, especially in the context of other countries has been very useful in this regard. He talked about his recent country engagement which has covered four key areas as follows:



27. Mr. Pablo clearly stated the fact that the SEEA accounts have been used in all stages of the policy cycle such as- issue or problem identification, policy response, implementation, monitoring and review. He categorically highlighted the applications of environmental accounting in various countries and focused on integrating Natural Capital in Macro-Economic Models in India. For instance, he mentioned about the Land accounts for Rwanda and Indonesia, Forest Accounts for Guatemala and Water Accounts for Botswana.

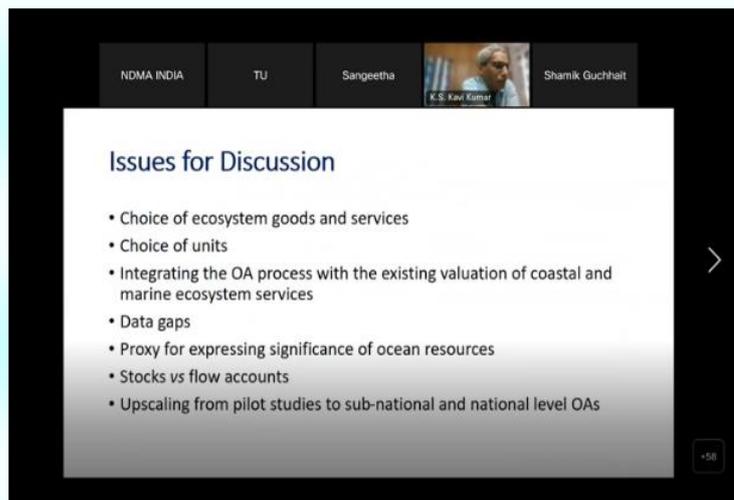
### **Highlights of the Panel Session on “Ocean and Water related accounts including fisheries and aquaculture”**

28. Since the ‘Ocean Account’ is one of the priority areas identified in Ministry’s Five-Year Strategy Document for Environmental Economic Accounts (2022-2026), the second session of the seminar was a panel discussion dedicated to the subject of ‘Ocean Accounting’ recognizing the significant contribution of ocean and coastal resources to India’s economy. The session discussed various approaches and challenges faced towards development of ocean accounts thereby suggesting the roadmap for the compilation of ocean accounts in India. The panel discussion which was virtually conducted on ‘**Ocean and Water related accounts including fisheries and aquaculture**’ was moderated by Dr. K.S. Kavi Kumar, Professor, Madras School of

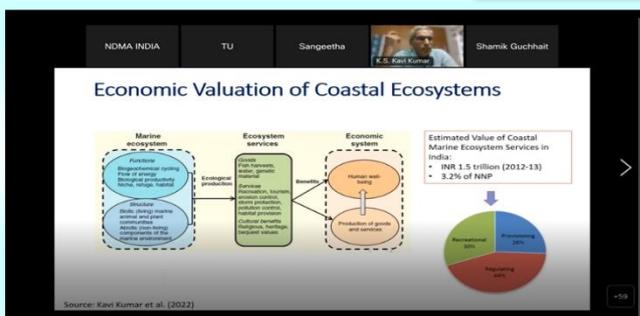
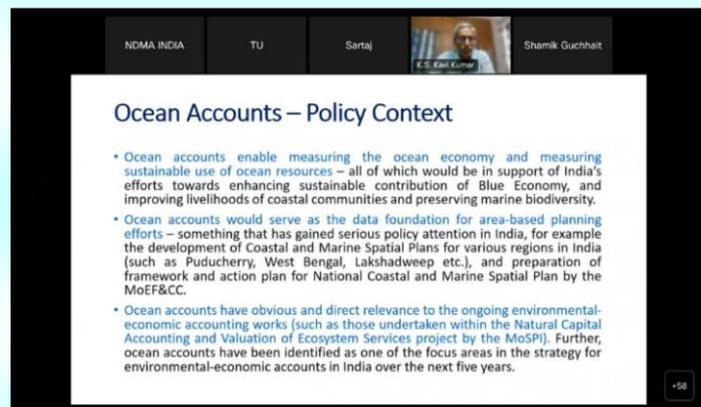
Economics, Chennai. The session had the following panelist who shared their rich expertise on Ocean and related accounts:

- i. Dr. TVS Udaya Bhaskar, Scientist-F, Indian National Centre for Ocean Information Services (INCOIS), Hyderabad
- ii. Dr. P. Shinoj, Senior Scientist, Indian Council of Agricultural Research - Central Marine Fisheries Research Institute (ICAR-CMFRI), Kochi
- iii. Dr. K. Ramu, Scientist E, National Centre for Coastal Research (NCCR), Chennai
- iv. Mr. James Blignaut, World Bank

29. Dr. Kavi Kumar emphasized on the importance of oceans and the need for accounting for it. He stressed on the relevance of the Ocean Accounts with respect to Policy scenario and highlighted that ocean accounting would enable measuring of the ocean economy and sustainable use of ocean and its contribution in improving livelihoods of coastal population. These Accounts would serve as data foundation for area-based planning efforts.



30. Dr. Kumar presented the general structure of Ocean Accounts framework as adopted by Global Ocean Accounts Partnership (GOAP) and economic valuation of marine ecosystems and services at macro level. He also highlighted some of the issues of Ocean



accounting such as choice of goods and services for accounting, raising pertinent questions such as- should we look into already known services and goods or should we go further in deep to explore services that are currently not properly

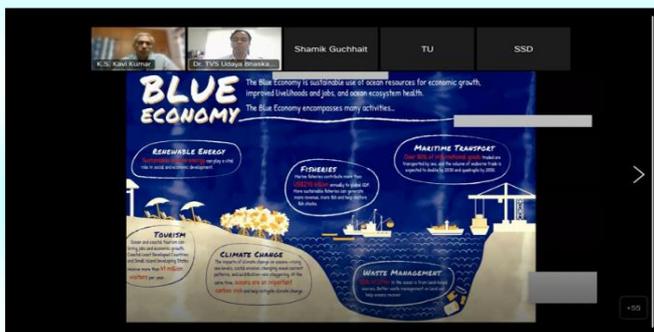
accounted for and other issues like choice of units, data gaps, stock vs flow accounts and up-scaling of pilot studies to national and sub-national level studies.

31. Dr. TVS Udaya Bhaskar, Scientist-F, INCOIS expressed his views on **Vision for India's Blue Economy and the role of National Ocean Accounts**. He informed the participants about India's vision of the Blue Economy that it was first introduced in 1994 under UN-SDG



Goals. He also informed about the different programmes of Ministry of Earth Sciences such as the “Deep Ocean Mission”, “Oceanography from Space”, and “Launching of data buoys” that has the potential to make significant change concerning the Blue Economy.

32. Dr. Bhasker stressed upon a few aspects of Ocean Accounts compilation information on diverse disciplines such as Coral reefs, Tourism, Resource Management etc. He described in details about the relevance of the Ocean Accounting with special emphasis on the Blue Economy. He informed the participants that Indian National Centre for Ocean Information Services (INCOIS) provides various Ocean Information Services on Pillars of Blue Economy to different stakeholders, for example, regarding renewable Ocean



Energy, INCOIS provides information on early warnings of waves and tides to policymakers and industry. He explained how the information on the ocean from various heterogeneous platforms is used for modelling and research and how the ocean information services are generated. He briefly presented the outcomes of different studies conducted regarding the ocean and its services.

33. The next presentation was made by Dr. P. Shinoj, a senior scientist in ICAR-CMFRI, Kochi on **Accounting for Marine fisheries, aquaculture, fish processing and fish provisioning services**. Dr. Shinoj emphasized on the importance of the Fisheries Sector in the Indian Economy especially in the context of Blue Economy. He explained



the generally accepted definitions of common fisheries-related terms and boundaries of the blue economy. He explained the role of Central Marine Fisheries Research Institute (CMFRI) in fish catch data collection. He provided a detailed account of sampling techniques and other

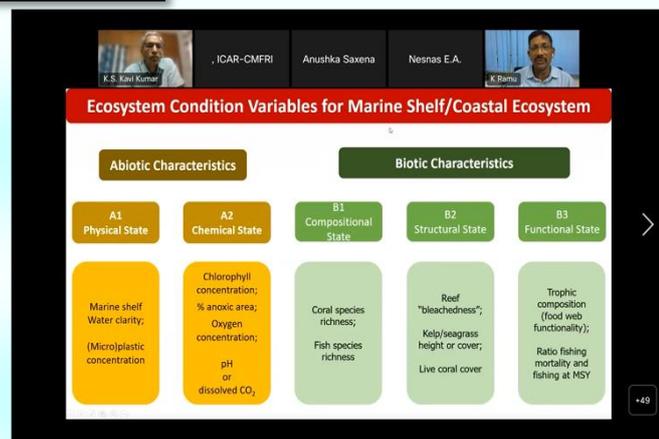
aspects of CMFRI in fish catch data collection and stated that around 800 species of fish are covered in data collection. He informed the participants that CMFRI brings out every year a publication 'Marine Fish Landings in India'. He stated that another major activity conducted by CMFRI is Marine Fisheries Census. Dr. Shinoj concluded his deliberations by highlighting some issues such as lack of survey mechanism /credible estimates for inland capture fish production and a lack of coverage of emerging sectors in NIC framework.

34. Dr. K. Ramu, Scientist E, National Centre for Coastal Research, Chennai took



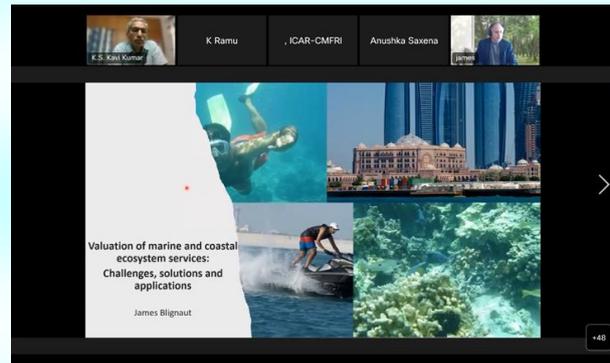
forward the discussion with his presentation on **Approach towards development of the Condition Accounts for the Oceans**. He highlighted the importance of the oceans stating that oceans generate more than 50% of the oxygen that we breathe and regulate climate and support

the economic activities and provides several other benefits. He described the characteristics of ocean condition accounts. Dr. Ramu next presented the various ecosystem condition variables for coastal ecosystems such as oxygen concentration, coral species, fish species richness and other abiotic and biotic characteristics which



are considered in SEEA. He then detailed about several programs of National Centre for Coastal Research which contributes in Ocean Condition Account. For example-the Seawater Quality Monitoring (SWQM) collects data on various characteristics of seawater. Dr. Ramu highlighted some of the challenges and way forward for ocean accounting stating that the data are fragmented and there is a need to integrate these data. He also mentioned that there are divergent approaches for ocean accounting in different countries.

35. The last presentation of the session was on **Valuation of marine and coastal ecosystem services: Challenges, solutions and applications** by Dr. James Blignaut from World Bank. He shared his experience of valuation of coastal ecosystem of Dubai, Algoa Bay and Abu Dhabi. He briefly discussed the different aspects of



valuation of coastal ecosystem such as defining the rationale, defining and mapping ecosystem resource, selection of appropriate valuation method, results feeding into ocean accounts and communication of those results. For instance, in the context of Abu Dhabi, he explained the contingent valuation method (CVM) and willingness to pay method. He also presented a snapshot of different ecosystem services and appropriate valuation methods for these services.

### Way Forward

36. Towards the end, Ms. R. Savithri, Additional Director General, MoSPI shared a strategy plan towards concretizing the Ocean Accounts in India. With a view to initiate the process of compilation of the Ocean Accounts, on behalf of SSD, MoSPI, she expressed her willingness to organize a brain-storming session with all the stakeholder Central Ministries, Coastal States, Research Agencies and Academia as the first step. This will help to explore various dimensions of ocean accounting and also help us to identify the areas and accounts which are doable. She also informed that subsequently a Task Force may be created to take forward the work and to provide technical and data support to the division.

### Conclusions

37. The seminar underscored the importance of using a conceptual framework that integrates scientific and economic data with traditional accounting principles emphasizing the fact that SEEA can help in framing evidence-based policies which ensures having a sustainable future. It was also stressed that it had become imminent,

especially for developing countries like India, to ensure that mechanisms are set up for systematic considerations of the environment in all economic decisions. The seminar was an attempt by NSO, MoSPI to make environment a key dimension in the policy paradigm.

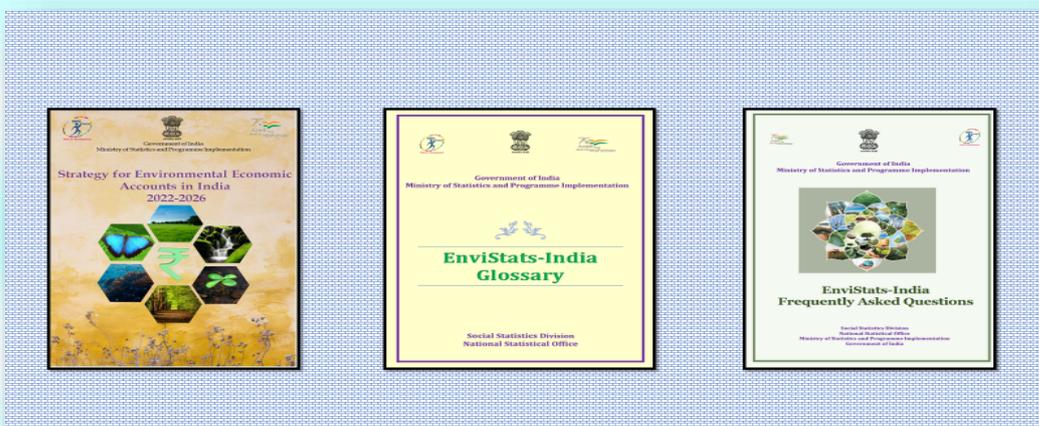
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## About the Organizers

The Social Statistics Division under the National Statistical Office, Ministry of Statistics & Programme Implementation, releases publications covering various statistics including those on different aspects of environment. These are based on internationally prescribed statistical frameworks and are available on the website of the Ministry, <https://mospi.gov.in>. The publications envisage to provide the necessary information for the benefit of all stakeholders who are working towards a 'better environment, better tomorrow'.



## Publications on Environment Statistics & Environment Accounts



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