

Vision for India's Blue Economy and the role of National Ocean Accounts

Dr. TVS Udaya Bhakar
Head Ocean Data Management Division,
Indian National Centre for Ocean Information Services
(INCOIS), MoES, Govt. of India,
Hyderabad – 90

Data for Sustainable Development: India's Environmental
Accounts and its Role in Policy and Decision-Making
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Outline

- ❑ India's vision of the Blue Economy
- ❑ Mission and stake holders
- ❑ Services of INCOIS – Blue Economy – Stake holders
 - ❑ Potential Fishing Zone Advisories
 - ❑ Ocean State Forecasting
 - ❑ Oil Spill monitoring
 - ❑ Biogeochemical modelling/ OGC Modelling
- ❑ Impact of INCOIS services on Blue Economy.

INDIA'S VISION OF THE BLUE ECONOMY

- ❑ First introduced in 1994, it received its importance when UN-SDG 14 sought to “conserve and sustainably use the oceans, seas and marine resources for sustainable development”.
- ❑ Government of India's Vision of New India highlighted the Blue Economy as one of the ten core dimensions of growth. Prime Minister in his 74th Independence Day Speech in 2020 emphasized recognizing an important emerging economic and strategic axis called the Seychelles-Singapore-Samoa (SSS) axis to form the basis of a robust Blue Economy Policy for India.
- ❑ India launched new programmes such as “Deep Ocean Mission,” “Oceanography from space” and “Launching of the data buoys” along the Indian coastline.
- ❑ Value addition from the Blue Economy includes that from coastal manufacturing and services, maritime trade, shipping, offshore and coastal energy, deep sea minerals, aquaculture and fisheries, and marine-related technologies.
- ❑ Many institutes working under Govt. of India are already working towards these, namely
 - ❑ Coastal Services, fisheries, maritime trade – INCOIS, Hyderabad
 - ❑ Marine-related technologies, Offshore and coastal energy – NIOT, Chennai
 - ❑ Deep sea minerals – NIOT, Chennai/NCPOR, Goa.

National Ocean Accounting

- ❑ National ocean accounting provides robust measurement of the blue economy and ecosystem services which supports decision-making in relation to the use and management of ocean resources.
- ❑ Ocean accounts compile information from diverse disciplines on ocean-based attributes and activities, including:
 - ❑ Biodiversity
 - ❑ Carbon
 - ❑ Coral reefs
 - ❑ Tourism.
 - ❑ Resource management.
- ❑ How can one use the ocean accounts:
 - ❑ Ocean accounts can help us to make better decisions about how we manage our marine ecosystems and resources.
 - ❑ Ocean accounts can help decision makers in the private and public sectors. It helps them better understand the long-term implications of their decisions.
 - ❑ Ocean accounts can involve:
 - ❑ Tracking the size and changing structure of the ocean economy and the condition of the marine environment.
 - ❑ Identifying the jobs and industries which rely on specific ocean ecosystems.

Our mission is to:

“Provide the Ocean Information and Advisory Services to Society, Industry, Government Agencies and Scientific Community through Sustained Ocean Observations and Constant improvements through Systematic and Focussed Research”.

Our stake holders are:

All those who depend on Sea for livelihood and those who leave on the coasts

- Fishermen
- Coastal population
- Navigators
- Ports & Harbours
- Maritime Industries (oil, shipping, Power..)
- Navy, Coast Guard, Marine Police
- Disaster Management agencies
- Coastal Tourism
- State Administration
- Academia and Researchers



BLUE ECONOMY

The Blue Economy is sustainable use of ocean resources for economic growth, improved livelihoods and jobs, and ocean ecosystem health.

The Blue Economy encompasses many activities...

RENEWABLE ENERGY

Sustainable marine energy can play a vital role in social and economic development.

MARITIME TRANSPORT

Over 80% of international goods traded are transported by sea, and the volume of seaborne trade is expected to double by 2030 and quadruple by 2050.

FISHERIES

Marine fisheries contribute more than **US\$270 billion** annually to global GDP. More sustainable fisheries can generate more revenue, more fish and help restore fish stocks.

TOURISM

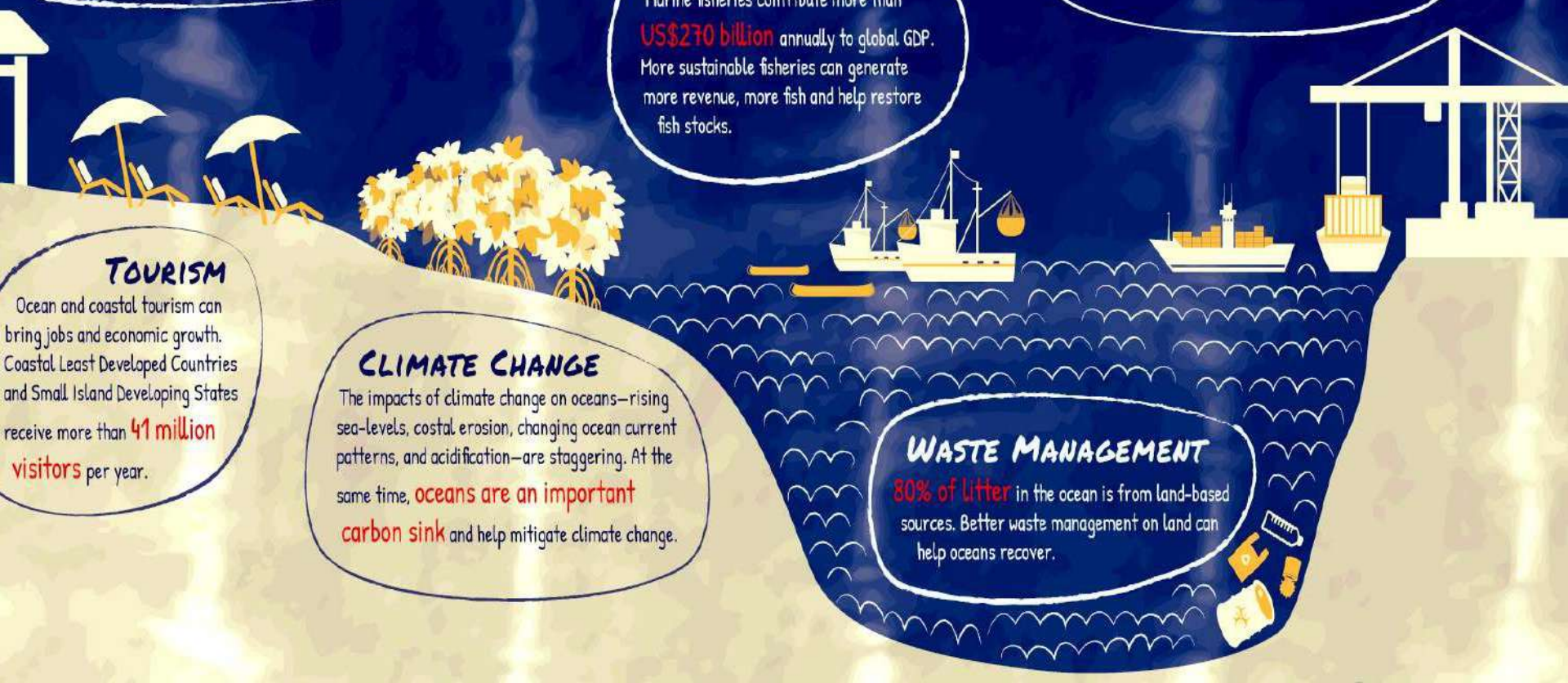
Ocean and coastal tourism can bring jobs and economic growth. Coastal Least Developed Countries and Small Island Developing States receive more than **41 million visitors** per year.

CLIMATE CHANGE

The impacts of climate change on oceans—rising sea-levels, coastal erosion, changing ocean current patterns, and acidification—are staggering. At the same time, **oceans are an important carbon sink** and help mitigate climate change.

WASTE MANAGEMENT

80% of litter in the ocean is from land-based sources. Better waste management on land can help oceans recover.



Blue economy

India's Blue Economy can be defined as a subset of the national economy comprising of the entire system of ocean resources and man-made economic infrastructure in **marine, maritime and the onshore coastal zones** within India's legal jurisdiction, which aid in the production of goods and services and have clear linkages with **economic growth, environmental sustainability and national security**.

“Essence of blue economy is to promote the development of **marine industry** which **ecologically**, economically and socially benefit from **marine ecosystem** and ensure that the ecosystem-based management model should be the core in decision-making process of **industrial and community development** (Australian Government, 2012).

Pillars in the Blue Economy

1. **Fisheries and Aquaculture**
2. **Renewable Ocean Energy**
3. **Seaports and Shipping**
4. **Offshore Hydrocarbons and Seabed Minerals**
5. **Marine Biotechnology, R& D**
6. **Tourism**

Coastal services for Society and Industry

Marine Fishery Advisories (Potential Fishing Zone & Tuna Fishing Advisories)

- ✓ Advisories to fishermen (guiding them the locations of abundant fish availability)

Ocean State Forecast (Waves, Currents, SST, Tides, etc.)

- ✓ Fishermen
- ✓ Navigators
- ✓ Ports & Harbours
- ✓ Indian Navy
- ✓ Indian Coast Guard
- ✓ Maritime Industries (Oil & Natural Gas)

Early Warnings (Tsunami, Storm Surge, High Wave Alerts)

- ✓ Disaster Management Agencies
- ✓ Coastal Population
- ✓ Port & Harbours
- ✓ Critical Installations (Nuclear Power Plants, refineries)

Coral Bleaching Alerts

- ✓ Researchers
- ✓ Ecologist and Environmentalist
- ✓ Policymakers

Special Services for Indian Navy & Coast Guard

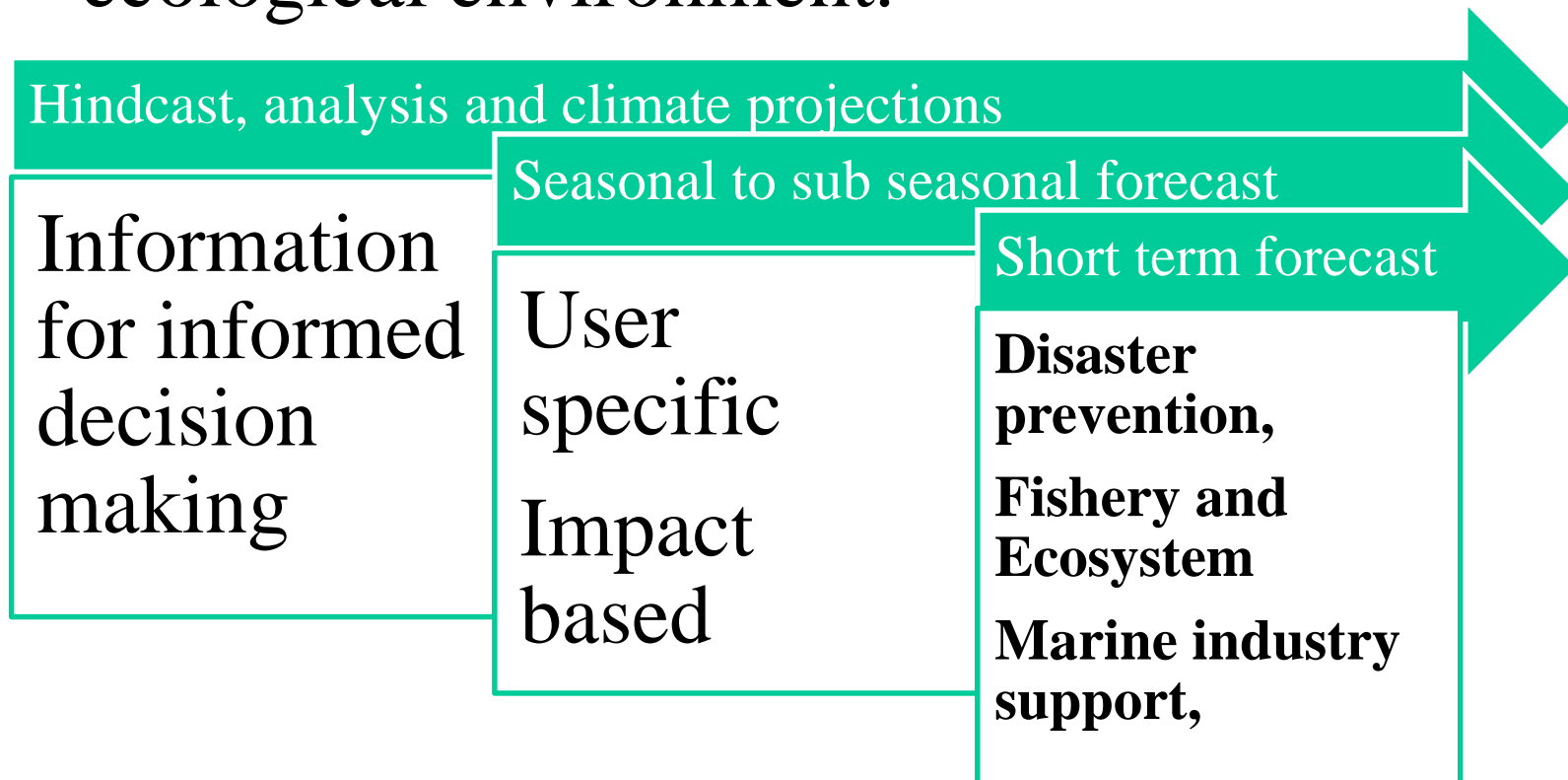
- ✓ Prediction of the trajectory of Oil Spill
- ✓ Search and Rescue Aid Tool (SARAT)
- ✓ Encrypted forecasts for Indian Naval Ships
- ✓ Sound Layer and Mixed Layer Depth for Naval warfare

Stakeholders

	Pillars of Blue economy	Ocean Information Services	Stakeholders
1.	Fisheries and Aquaculture	PFZ, Tuna Advisory, Aquaculture site selection	<i>Fishermen</i>
2.	Renewable Ocean Energy	Wind, waves, Tides, surface currents	Policy makers Industry
3.	Seaports and Shipping	Major Ports, Minor Ports, Dynamic and standard route forecast	Shipping Industry
4.	Offshore Hydrocarbons and Seabed Minerals	Supporting offshore and coastal industries, Oil spill advisory, Deep Sea Mining	Offshore industries and oil refineries
5.	Marine Biotechnology, Research and Development	Bio-geo chemistry, water quality parameters	Pharmaceuticals
6.	Tourism	Harmful algal blooms, coral reef bleaching, wave steepness , rip current information	Disaster management authority

Ocean Information for Blue Economy

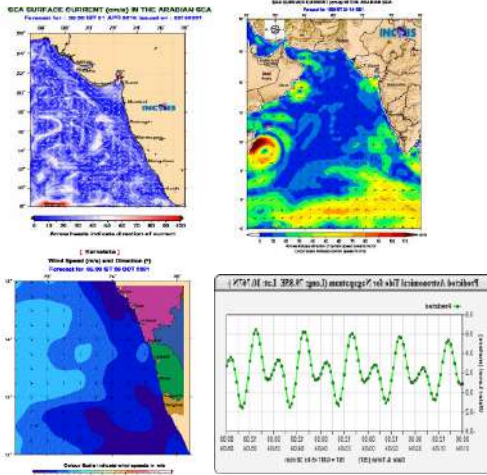
- Science-based products and services that can Support the development of the Blue Economy,
- Marine integrated management based on ecological environment.



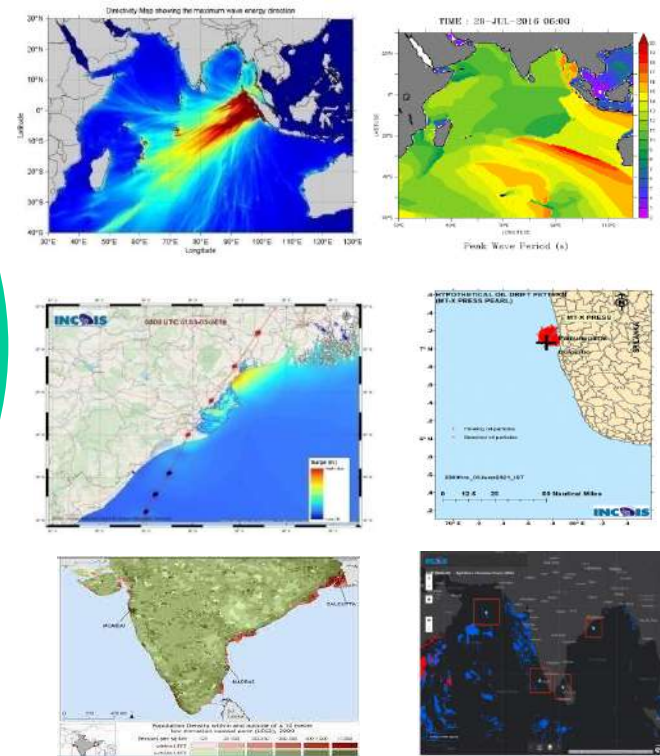
Ocean Information System for blue economy



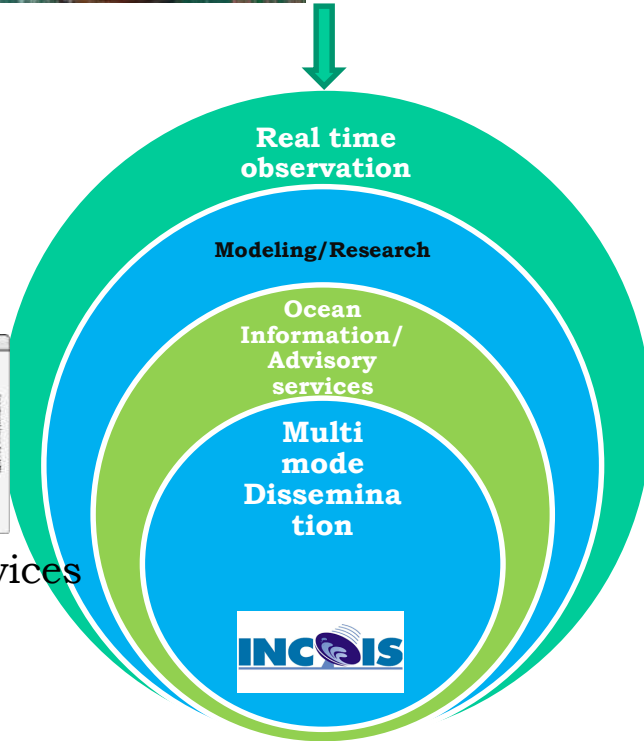
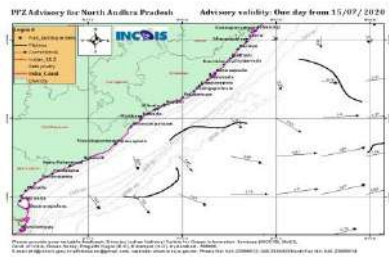
Customized products



Hazard based products



Fisheries & Ecosystem services



STAKEHOLDERS OF BLUE ECONOMY

Impact and socio-economic benefits of OSF and PFZ services

- Identifications of PFZs as well as Ocean State forecast by INCOIS are found to be both timely, accurate and of significant value to the fishing community.
- The economic benefits resulting from identification of PFZ is estimated as 34,000 to 50,000 Crore.

Report of National Council of Applied Economic Research (NCAER) in 2010

An estimate, from one village (in Raigad, Maharashtra) of 32 fishing boats, diesel saving of 70,000 litres per month could be attained through this advisory service. This would amount to saving of 150000 kg of CO₂ (@2.7kg/l) from one village alone. This is substantial not only for saving money but also in reducing pollution

National Agricultural Innovation Project, ICAR, New Delhi, Annual Report 2011-12

Impact and socio-economic benefits of OSF and PFZ services



NGAER

Economic Benefits of Dynamic Weather and Ocean Information and Advisory Services in India and

Cost and Pricing of Customized
Products and Services of
ESSO-NCMRWF & ESSO-INCOIS

National Council of Applied Economic Research

2015

- “The economic analysis indicates that the real growth rate of gross value added in marine fisheries can go up to 7.8% per annum from the current level of 3.9% once the PFZ-OSF is operationalised uniformly across the country in all coastal areas”.
- “Since **five 'no go ahead mission' advisories were provided since 2013** till date the net , the net benefits during 2013-2015 works out to be Rs. 4161.9 crore”.
(Indian Navy)

- The environmental effect of savings in diesel consumption computed as **carbon credit would work out to an annuity of Rs 36,200 crore** or a present value of around Rs. 2.84 trillion over the 25-year useful life, which is quite significant.

Impact and socio-economic benefits of OSF, PFZ & TEW services

- The Indian Coast Guard uses the INCOIS forecasts to plan their operational activities and manage oil spill contingencies.
- "The overall economic benefits due to OSF services would be the cumulative benefits realized by Indian Navy, Indian Coast Guard, value addition to oil and gas exploration etc. as per our **computations exceed Rs. 3.7 trillion. The gross investments made by INCOIS to provide OSF in 2015 prices is Rs. 6.47 crore (including recurring capital of Rs. 2.41 crore)**"
- "The economic benefits of the Tsunami Early Warning Centre can be simply accessed by the list of under-sea earthquakes in the Indian Ocean Region **for which a 'No Tsunami Threat' advisory issued by ITEWC, INCOIS avoids relocation and rehabilitation expenditure.** Considering the expenditure incurred by Odisha government for evacuation and relocation of coastal population during Phailin, an expenditure of Rs. 3500 Cr would be required in the absence of "No Tsunami Threat" advisory."



***Thank
you***