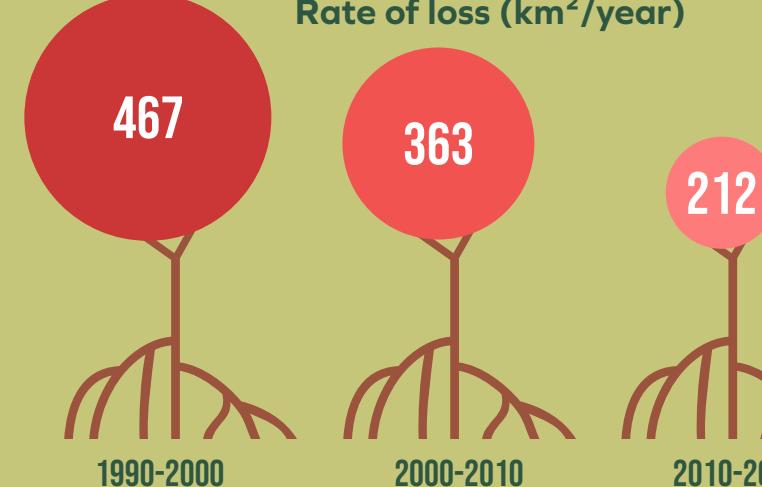


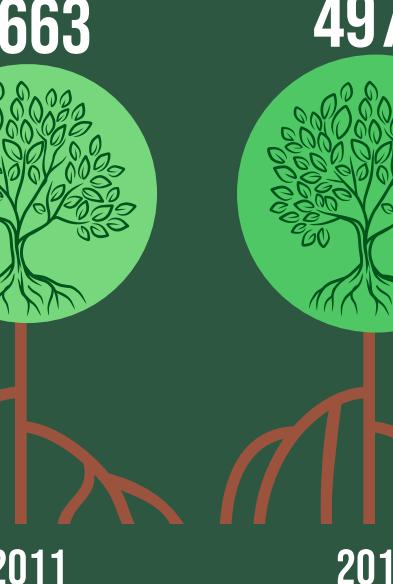
MANGROVE STATUS



10,400 km²

DECREASED FROM 1990 - 2020 [GLOBAL FOREST RESOURCES ASSESSMENT, FAO]

INDIA
Mangrove area (km²) increased by 11.4%



GLOBAL SCENARIO

As per Global Mangrove Alliance (GMA) annual report, *The State of the World's Mangroves 2022*, rates of loss have greatly diminished, with averaged losses over the last decade of just 66 km² or 0.04% of all mangroves per year.



MANGROVE ECOSYSTEMS OF INDIA



Mangrove forests in India are present along the coastline of 9 States and 4 Union Territories. Indian mangrove habitats are broadly classified into three categories namely, Deltaic (East Coast Mangroves), Estuarine & Backwater (West Coast Mangroves) and insular mangroves (Andaman & Nicobar Islands). In addition, atoll mangroves are also present in Minicoy Island of Lakshadweep Islands. India has a total mangrove cover of 4992 km²; which is 0.15 % of the country's total geographical area. There has been a net increase of 17 km² in mangrove cover of the country as compared to 2019 assessment. About 57% of the Indian mangrove is present along the east coast (Bay of Bengal); 31% along the west coast (Arabian Sea) and the remaining 12% in the Andaman and Nicobar Islands.

SPECIES DIVERSITY



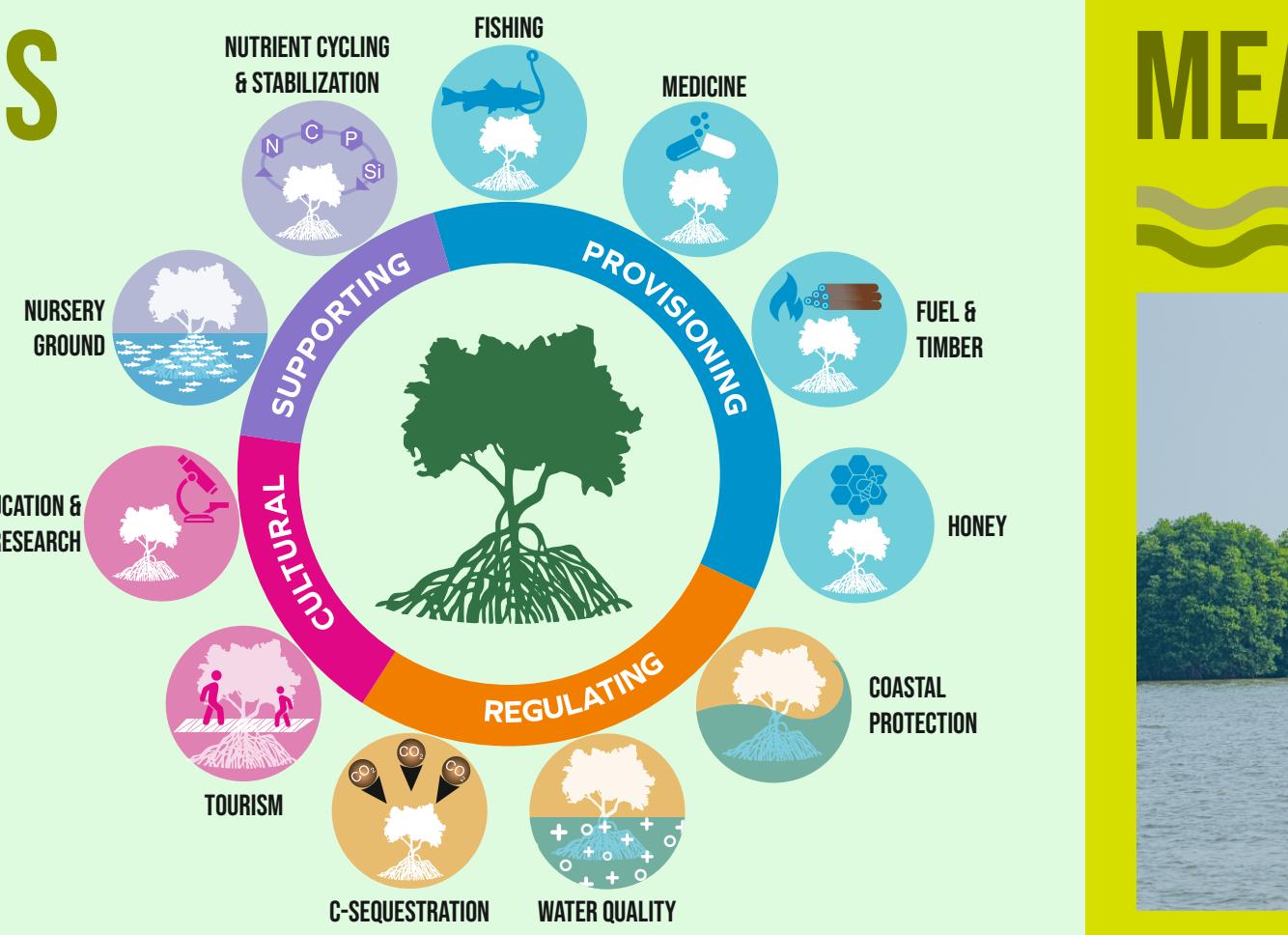
"We have protected our coastline by developing mangroves through people's participation along the coast of Gujarat and this has become a model for other Indian coastal states to adopt." @ Bhavnagar, Gujarat, 2022

-Hon'ble Prime Minister, Shri Narendra Modi

Mangrove Pitta

(*Pitta megarhyncha*)

ECOSYSTEM SERVICES



CARBON SEQUESTRATION

Mangroves store carbon (C), equivalent to over 21 billion tons of CO_2 and are capable of absorbing four to five times more C emissions than terrestrial tropical forests. For Indian mangroves, the total sediment C-stock is estimated as ~ 41.5 Terra gram of C (TgC). Andaman mangroves are estimated to contain 13.8 TgC, and Sundarbans (8.7 TgC) in east coast and Gujarat Mangroves (7.7 Tg C) in the west coast have the highest sediment C-stock.

Mangroves along with seagrasses and salt marshes, collectively called as Blue Carbon (BC) ecosystems serve as cost effective options for mitigation and adaptation to climate change.

CONSERVATION MEASURES



AFFORESTATION MEASURES

490 km² of mangrove area has been afforested in Gujarat through Government initiatives (184 km²) and Public Private Partnership (111 km²) involving communities.

Under the Integrated Coastal Zone Management (ICZM) Project, mangrove afforestation was undertaken on a large scale in the Coastal States of Gujarat (195.03 km²), Odisha (3.23 km²) and West Bengal (1.18 km²).

Creation of a "Mangrove Cell" and declaration of "*Sonneratia alba*" as a State Mangrove Tree of Maharashtra are the State's key mangrove conservation initiatives.

2.36 km² of mangroves were notified as 'Reserved Forest' under "Kannur Mangrove Mission" of Kerala.

Joint Mangrove Management involving local communities in mangrove restoration is being undertaken in Gujarat, Tamil Nadu, Andhra Pradesh and Odisha.

The Indian Sunderbans (West Bengal), Bhitarkanika (Odisha) and Pichavaram (Tamil Nadu) are important mangrove areas which have been declared as Ramsar Sites.



Sonneratia alba

INITIATIVES OF MoEF&CC



Despite increasing developmental pressures, mangroves have been successfully managed in India in the last two decades. Between 2001 to 2021, Indian mangrove cover witnessed an increase of 510 km². There has been a net increase of 17 km² in the mangrove cover of the country as compared to 2019 assessment. This has been possible not only because of legislative protection regulating anthropogenic activities but also as a result of mangrove afforestation leading to natural colonization.

Ministry of Environment, Forest and Climate Change (MoEF&CC) has introduced legislative protection for conservation of Indian mangroves which include the following:

- Coastal Regulation Zone (CRZ) **Notification** issued under **The Environment (Protection) Act, 1986** protects coastal ecosystems including mangroves as ecologically sensitive areas (ESA)
- **The Indian Forest Conservation Act, 1980**
- **The Wildlife (Protection) Act, 1972**

Under the National Scheme MoEF&CC is providing dedicated budgetary support for conservation and management of mangroves and coral reefs in the country. 38 mangrove and 4 coral reef sites have been identified for on-ground intervention with the following objectives:

- Conservation and management of mangroves and coral reefs
- Eco-restoration and afforestation in degraded coastal areas
- Maintenance of coastal genetic diversity
- Creation of awareness and livelihood improvement of people in coastal areas

Forest Survey of India is assessing the mangrove cover since 1987.

Government of India through its World Bank assisted Integrated Coastal Zone Management (ICZM) Project has completed 199.44 km² of mangrove plantation. It recognizes mangroves & coral reefs as important coastal environmental resources and underlines the need to adopt a comprehensive approach to ICZM.

India is part of the Mangroves For the Future (MFF) initiative of International Union for Conservation of Nature (IUCN)



Pristine mangroves are being preserved in majority of the 129 declared Marine Protected Areas



Gulf of Mannar Marine National Park, Tamil Nadu



Coringa Wildlife Sanctuary, Andhra Pradesh



Bhitarkanika Wildlife Sanctuary, Odisha



Sunderbans, West Bengal



Rani Jhansi Marine National Park, Andaman & Nicobar Islands



Galathea Bay National Park, Andaman & Nicobar Islands

PROTECTED MANGROVE AREAS



PROTECTED MANGROVE AREAS



PROTECTED MANGROVE AREAS

