GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

LOK SABHA
UNSTARRED QUESTION NO. 1645
TO BE ANSWERED ON 10.03.2025

Conservation of Marine Life

1645. DR. D. PURANDESWARI:

Will the MINISTER OF ENVIRONMENT, FOREST AND CLIMATE CHANGE be pleased to state:

(a) the detailed progress of aquatic life restoration programme, such as artificial reef installations, in marine biodiversity;
(b) the details of the Government's plan to use international collaborations, to combat marine plastic pollution and improve ocean health and marine life;
(c) the steps taken by the Government to address the threat of rising ocean temperatures on marine ecosystems, particularly coral reefs, which face significant bleaching and extinction risks;
(d) the initiatives being implemented to mitigate the effects of warming oceans on India's fisheries sector, ensuring sustainable livelihoods for coastal communities and marine life; and
(e) whether the Government is considering to integrate these technologies with policy frameworks for better implementation and monitoring of conservation strategies for marine life, if so, the details thereof?

ANSWER

MINISTER OF STATE IN THE MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE
(SHRI KIRTI VARDHAN SINGH)

(a) Artificial reefs are engineering interventions designed to rehabilitate and/or enhance natural habitats, increase productivity, and manage aquatic resources, including habitat improvement. The installation of artificial reefs in India is part of ongoing efforts to restore marine ecosystems, enhance biodiversity, and support sustainable fishing practices. The Zoological Survey of India (ZSI) plays a significant role in coral restoration and transplantation. India's largest coral translocation project, led by ZSI, involved relocating 16,522 corals from intertidal and subtidal zones to suitable sites around Narara, Gujarat. Additionally, 2,000 coral cement frames (artificial reefs) have been strategically placed to ensure the long-term preservation of marine biodiversity. The Department of Fisheries has sanctioned 937 artificial reef units across 11 coastal states and Union Territories, with an investment of ₹176.81 crore under the Pradhan Mantri Matsya Sampada Yojana (PMMSY) to promote the restoration of aquatic life.

(b) India is one of the lead countries of GloLitter Partnership programme. The programme is of International Maritime Organisation (IMO) to support participating countries to tackle marine plastic litter issues on national and regional level both from shipping and fisheries sectors, implementing in partnership with Food & Agriculture Organisation of United Nation. India has constituted National task force and published National Action Plan for on Marine Plastic Litter from Sea-based sources.

(c) The Indian National Centre for Ocean Information Services (INCOIS) provides early warnings of potential coral bleaching using satellite data, helping to protect coral ecosystems and support climate resilience efforts. The Coral Bleaching Alert System (CBAS) assesses thermal stress accumulated in coral environments based on sea surface temperature. Information derived from CBAS is disseminated every three days, including data on hotspots, the degree of heating weeks, and time series products.

The Zoological Survey of India (ZSI) has studied the significant impacts of bleaching on hard coral species in Indian waters. Using advanced climate modelling techniques, ZSI provides valuable insights for the development of effective conservation strategies and timely interventions.

(d) The Fishery Survey of India (FSI) collects vital information on the distribution of fish stocks, the composition of various species, and the effects of fluctuations in ocean temperature on marine biodiversity. FSI helps fishers adapt to changes in the marine ecosystem and provides guidance on sustainable fishing practices. Additionally, FSI conducts awareness campaigns and educational initiatives for coastal communities to raise awareness about climate-resilient fishing methods and alternative sources of income for sustainable livelihoods.

(e) The Government of India is integrating advanced technologies with policy frameworks to improve the implementation and monitoring of marine life conservation strategies. Satellite imagery, remote sensing technologies, and autonomous underwater vehicles, such as the C-bot, are used to monitor ocean conditions, including sea surface temperature, salinity, water quality, and coral health. These technologies support early warning systems to protect coral ecosystems, enhance climate resilience, and assist in policy formulation to track ecosystem health, detect illegal fishing, and monitor coral reefs and marine protected areas (MPAs).

Climate-resilient technologies and practices developed by leading institutions in the fields of oceanography, marine biology, fisheries, and coastal management—such as CSIR-National Institute of Oceanography (CSIR-NIO), National Institute of Ocean Technology (NIOT), Indian National Centre for Ocean Information Services (INCOIS), and the Central Marine Fisheries Research Institute (CMFRI), are employed in conservation strategies for marine life.

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