GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
RAJYA SABHA
UNSTARRED QUESTION NO. 355
ANSWERED ON 25/07/2024

IMPACT OF CLIMATE CHANGE ON MARINE LIFE

355. SHRI BEEDHA MASTHAN RAO YADAV:

Will the Minister of **EARTH SCIENCES** be pleased to state:

(a) whether Government is aware that increase in sea temperatures due to climate change is resulting in death of corals, with optimum temperature for corals to survive being between 23 and 29 degree Celsius;
(b) whether Government is also aware that since many animals depend on corals for food, food supply is also being disturbed as primary food source is decreasing;
(c) if so, the policies/measures undertaken to address this issue;
(d) whether Government has undertaken any research studies that analyse sustainability of commercial fishing or focus on non-commercial marine life; and
(e) if so, details thereof, if not, reasons therefor?

ANSWER
THE MINISTER OF STATE (INDEPENDENT CHARGE) FOR
MINISTRY OF SCIENCE AND TECHNOLOGY
AND EARTH SCIENCES
(DR. JITENDRA SINGH)

(a) Yes. Government and environmental organizations are aware that rising sea temperatures due to climate change contribute to coral bleaching and the death of corals. Corals thrive within a narrow temperature range of 23 to 29 degrees Celsius. When sea temperatures exceed this range, corals become stressed and expel the symbiotic algae (zooxanthellae) living in their tissues, which provide them with energy through photosynthesis. This process, known as coral bleaching, leaves the corals white and vulnerable to disease and death if stressful conditions persist.

(b) Yes. Government is aware that the decline in coral reefs due to climate change and other stressors has significant implications for marine ecosystems and the animals that depend on corals for food and habitat. About 25% of the marine biodiversity is harboured by coral reef ecosystem as they serve as nursery ground, shelter and source of food. If the extent of coral cover gets reduced, it may affect the organisms depending on coral reef ecosystem as a primary source of food.

(c) The Government of India has taken several measures to protect and conserve coral reefs in the country. In order to protect the corals in India, all the species of Scleractinia coral or reef forming corals are listed under Schedule I of Wildlife (Protection) Act, 1972. Further, all the major coral reef areas of India, i.e. Andaman and Nicobar Islands (selected islands), Gulf of Mannar, Gulf of Kachchh, Lakshadweep (selected islands) and Malvan coast are declared as Maine Protected Areas which prevents any commercial and anthropogenic activities. Further, the central and state governments are actively implementing coral restoration programmes. For example, Zoological Survey of India is implementing Coral restoration programmes in Mithapur, Gulf of Kachchh, Gujarat. Similarly, coral restoration programmes are being implemented in the Gulf of Mannar region, Tamil Nadu. These case studies show that focused coral restoration efforts in India, involving partnerships between government agencies, non-governmental organizations (NGOs), and research institutions, were effectively conserving coral reef ecosystems.

(d) & (e) Yes. The Central Marine Fisheries Research Institute (Ministry of Agriculture) and Fisheries Survey of India (Ministry of Fisheries) are regularly conducting stock assessment and sustainability of commercially important fishes inhabiting in Indian territorial water. In addition, INCOIS, an autonomous institution under MoES conducted focused research and provides services such as Potential Fishing Zone (PFZ) advisories, coral bleaching alerts, and marine heatwave advisories. This service provides information on the coral areas impacted by bleaching and helps us understand the extent and area of bleaching. Marine heatwave services that routinely nowcast the distribution and hotspots of marine heatwaves in the Indian Ocean and their impact on ecosystems such as coral reefs.

Based on the research, the Government has taken up the following policy decision to maintain the sustainability of commercial fishing.

Fishing ban period for the (i) East Coast: from 15th April to 14th June (61 day) and (ii) West Coast: from 1st June to 31st July (61 days). During this period of ban, no fishing operation will be undertaken, however, the traditional non-motorized units shall be exempted from this uniform fishing ban imposed in the Indian EEZ beyond territorial waters.

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