GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
LOK SABHA
UNSTARRED QUESTION No. 2794
TO BE ANSWERED ON WEDNESDAY, 6TH AUGUST, 2025

SURVEY TO ASSESS MICROPLASTIC AND MARINE DEBRIS

2794. MS. PRANITI SUSHILKUMAR SHINDE:
SHRI SAPTAGIRI SANKAR ULAKA:

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

(a) whether the Government has conducted any surveys between the year 2022 and 2025 to assess microplastic and marine debris levels along country's coast and if so, the key findings thereof;
(b) the details of coastal ecosystems such as mangroves, estuaries or coral reefs that have been identified as most vulnerable to plastic accumulation;
(c) the current status of the draft National Marine Litter Policy including the timeline for its release, public consultation and inter-ministerial review;
(d) the number of new beach locations where litter data has been collected as on June 2025 along with the updated estimates of marine litter quantity removed under coastal clean-up campaigns; and
(e) the details of scientific or community-led measures that have been supported by the Government to address marine plastic pollution since 2022?

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

(a) Yes. Ministry of Earth Sciences (MoES) through National Centre for Coastal Research (NCCR) has conducted field surveys between the year 2022 and 2025 along India's coastline to assess the microplastic and marine debris levels. Assessment of microplastics in both water and sediment has been carried out along the east and west coasts of India. On the west coast, 19 transects were surveyed from Porbandar (Gujarat) to Kanyakumari (Tamil Nadu), while on the east coast, around 25 transects were sampled from Puri (Odisha) to Tuticorin (Tamil Nadu). The findings indicate that the predominant sources of microplastic pollution are riverine inputs and Abandoned, Lost, and Discarded Fishing Gear (ALDFG). Further, regarding the marine debris, national level assessment of beach litter is being conducted every year during the International Coastal Clean-up Day on 3rd Saturday of September under programme "Swachh Sagar Surakshit Sagar" covering the coastal States and Union Territories. The assessments reveal that the major sources of beach litter are tourism-related and recreational activities. Further, the data indicates a declining trend in beach litter over the years, with plastic litter contributing 67% in 2018 and reducing to 43% in 2024.

In addition, National Institute of Oceanography (NIO), Goa has carried out a detailed study assessing microplastics in offshore sediments along the eastern Arabian Sea shelf. The findings revealed significant levels of microplastic pollution in marine sediments. Evaluation of spatial and seasonal variation of microplastics along Mandovi-Zuari estuarine system, Sal estuarine system was undertaken and assessed the predominant type of plastics in these systems. Research was also conducted to assess the microplastic uptake and influence in bentho-pelagic region and its associated ecological risks along the coast of Goa. In this study, 9 pelagic and benthic fish and shellfish species were studied and habitat wise higher micro-plastics contamination was found in benthic region and sediment compared to pelagic region and water column.

(b) Studies have indicated that coastal ecosystems such as mangroves, estuaries and coral reefs are most sensitive coastal ecosystems to accumulate marine litter and microplastic.

Plastic litter survey conducted in coastal **mangroves** along the Goa coast has shown that average litter was estimated at 5.14 ± 0.55 items/m². Plastic items were ubiquitous, accounting for 66 % of anthropogenic litter. Land-based mismanaged solid waste and public littering were identified as primary sources of litter pollution.

Likewise, marine litter survey conducted on coastal **mangroves** along the Maharashtra coast has shown that average concentration of litter was measured 8.5±1.9 items/ m^2 (ranged 1.4−26.9 items/m^2). Plastic dominated 83.02 % of all litter deposited on the mangrove forest.

Underwater marine litter survey was conducted along the fringing **coral reefs** in the Mahatma Gandhi Marine National Park, Andaman and Nicobar Islands. The survey recorded an average litter density of 0.42 ± 0.08 items/m^2 (range: 0.23 ± 0.02 to 0.71 ± 0.09) and a mean mass of 138.61 ± 42.15 g/m^2 (range: 70.17 ± 7.74 to 303.4 ± 2.55). Plastic was the most dominant litter (60.82 %) recorded in the reef environment.

Marine litter on North Cinque Island, a remote uninhabited island in the Andaman and Nicobar archipelago, Bay of Bengal has enumerated total of 6227 litter items with an average concentration of 0.12 items/m^2, representing 20 diverse litter types, with plastic dominating the litter composition (86 %).

Marine litter survey was done in intertidal **coral habitats** of Mumbai. Average density of marine debris was estimated at 1.60 ± 0.13 items/m^2. Plastic materials were the most abundant of all debris registered in the study area, comprising 91.27% of the total marine litter. Single use plastic bags and wrappers were dominant plastic debris.

(c) The roadmap for National Marine Litter Policy has been formulated by Ministry of Earth Sciences (MoES) through National Centre for Coastal Research (NCCR) Chennai. The draft policy document has been circulated to relevant stakeholders, line ministries and agencies for review and consultations.

(d) More than 250+ beach cleanup events have been organized by MoES institutes. About 150 tons of beach litter was removed through various programs such as Swachh Sagar Surakshit Sagar, International Coastal Cleanup Day, World Oceans Day, Swachhata Pakhwada etc.

(e) Community-led measures: NCCR-MoES has conducted several beach clean-up and awareness campaigns since 2018, to raise awareness among students, the public, and fishermen communities about ill-effect of marine litter and microplastics. The main objective is to involve the public in beach clean-up (Citizen Science approach) and to spread awareness of marine litter and microplastics.

Scientific activities: Several scientific studies including occurrence, characterization, spatial and seasonal variability of microplastics and impact on biotic ecosystem have been conducted along the eastern and western Indian coast. Details of scientific and community led measures to address marine plastic pollution since 2018 are given below:

State/UT	**Number of beach cleanup event conducted by NCCR (MoES)**					
	2018	**2019**	**2021**	**2022**	**2023**	**2024**
Gujarat	-	3	2	10	3	3
Maharashtra	-	3	3	6	2	1
Goa	-	3	2	6	2	-
Karnataka	1	2	4	6	3	3
Kerala	1	4	-	5	6	3
Tamil Nadu	2	9	12	10	9	12
Puducherry	-	1	3	4	3	2
Andhra Pradesh	1	1	1	8	46	1
Odisha	1	4	5	7	3	2
West Bengal	-	1	1	6	2	2
Lakshadweep Islands	-	2	-	4	3	-
Andaman& Nicobar Islands	1	2	-	3	1	2
Daman/Diu	-	-	-	2	-	1
Total	**7**	**35**	**33**	**77**	**83**	**32**

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