

**GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
LOK SABHA
UNSTARRED QUESTION No. 5666
TO BE ANSWERED ON FRIDAY, JULY 26, 2019**

BIOPHYSICAL VARIABILITY

**5666. SHRI NARANBHAI KACHHADIYA:
SHRI PARBATBHAI SAVABHAI PATEL:**

Will the Minister of Earth Sciences will be please to state:

- (a) whether the Government is taking any steps to encourage scientific community to conduct research to further understand the Indian Ocean's biophysical variability in respect of monsoon and human activities;**
- (b) if so, the details thereof;**
- (c) the significant steps taken by the Government to carry out Oceanographic research in the Indian Ocean during the last three years; and**
- (d) the funds allocated and utilized for the research activities/studies in this regard during the above period?**

ANSWER

**MINISTER FOR MINISTRY OF SCIENCE AND TECHNOLOGY AND
MINISTRY OF EARTH SCIENCES
(DR. HARSH VARDHAN)**

- (a) Yes, Sir.**
- (b) Ministry of Earth Sciences has dedicated projects on Ocean Observation Networks, Ocean Modelling and a multi-institutional project on monsoon mission. Scientists from various national institutes are involved in these projects. Coupled physical-biological models together with the data collected using ship cruises and profiling platforms are used to study the biogeochemical and ecological responses to physical forcing towards understanding the monsoon and forecasting the changes due to climate change. The observations made in the coastal waters of eastern and western continental shelf of India combined with model simulated data are used to assess the coastal marine ecosystem. The data collected helped in understanding the health of coastal waters and the vulnerability of our coastal zones to adverse human impacts and industrialization.**

- (c) **Ministry of Earth Sciences formulated an umbrella scheme on Ocean Services, Technology, Observations, Resources Modelling and Science through which projects are executed primarily by the institutions attached to the ministry in collaboration with the other research and academic institutions in the country. Other significant steps pertaining to oceanographic research in Indian Ocean includes, commencement of construction of two new coastal research vessels, restoration of beaches at Puducherry and Kadalur using technology interventions, commencement of setting up of 6 low temperature thermal desalination plants in Lakshadweep islands, exploration of deep sea mineral resources viz. polymetallic nodules and polymetallic sulfides from Indian Ocean, bathymetric survey of major portion of deep waters in Exclusive Economic Zone of India , development of ocean technologies etc.**
- (d) **The fund allocated and utilized for this purpose during the last three years are as under:**

Amount in crores of rupee

Budget Head	Year	Budget Allocated (Plan)	Expenditure (Plan)
Ocean Services, Technology, Observations, Resources Modelling and Science (O-STORMS)	2016-17	305	297.65
Ocean Services, Technology, Observations, Resources Modelling and Science (O-STORMS)	2017-18	316	310.63
Ocean Services, Technology, Observations, Resources Modelling and Science (O-STORMS)	2018-19	440.50	434.49
