GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
LOK SABHA
UNSTARRED QUESTION No. 3550
TO BE ANSWERED ON WEDNESDAY, AUGUST 08, 2018

OCEAN OBSERVATION SYSTEM

3550. SHRI RAJESHBHAI CHUDASAMA:

Will the Minister of EARTH SCIENCES be pleased to state:

(a) the details of Ocean Observation Systems set up so far in the country, State/ UT-wise;
(b) whether the Government proposes to develop further Ocean Observation Systems across the country;
(c) if so, the details thereof, State/UTwise and benefits thereof;
(d) whether any funds have been sanctioned for this purpose; and
(e) if so, the details thereof and the time by when they are likely to be developed?

ANSWER
MINISTER FOR MINISTRY OF SCIENCE AND TECHNOLOGY AND MINISTRY OF EARTH SCIENCES
(Dr. HARSH VARDHAN)

(a) The Ministry has been implementing a major program on Ocean Observations System. The ocean observation system has been designed to acquire real-time, time series data on surface meteorological and upper oceanographic parameters from the seasaround India including from the Indian Ocean Region. A wide range of ocean observationsystems are deployed in different parts of the Indian Ocean for acquisition of specificoceanparameters on different spatial and temporal scales. These include moored buoys, drifters, current meters, wave rider buoys, argo floats, tide gauges, coastal radars and Acoustic Doppler Current Profilers(ADCP), which are broadly classified into two categoriesviz. drifters and moored. The primary purpose of acquiring a suite of accurate measurementsof ocean parameters is to cater research and a wide range of operational services includingissue of issue of early warning to tsunami and storm surges. Besides, the information from the seas around India is extremely useful of ocean-atmospheric modelling purposes and validation of satellite data. One of the major observing systems is moored buoy network, equipped with deployment and maintenance of a set of buoys at fixed locations in the Exclusive Economic Zone of India (EEZ) for obtaining long term data. These buoys are capable of collecting data upto 76 parameters and

transmitting the information in real time through satellites. The ocean observing systems are primarily deployed, operated and maintained by four organizations viz., National Institute of Ocean Technology (NIOT), Chennai, National Institute of Oceanography (NIO), Goa, Indian National Centre for Ocean Information Services (INCOIS), Hyderabad and Survey of India, Dehradun. All the systems except Tide gauges and coastal Radar are deployed in the EEZ of India, outside jurisdiction of coastal states/UT of India. The details of major observations systems deployed, operated, maintainedand supported by India and their current status are as under

Type of Platform	Target	Commissioned till June, 2018	Data received during June, 2018
Argo Floats *	200	323	147
Drifters*	150	108	4
Moored Buoys	16	20	20
Tide Gauges	36	35	27
High Frequency (HF) Radars	10	10	10
Current Meter Array	10	11	2
Acoustic Doppler Current Profiler (ADCP)	20	20	15
Tsunami Buoys	7	9	5
Wave Rider Buoy	16	17	10

***The remaining floats/drifters have completed their life time and as such no data can be received from them.**

(b) No Madam. There is no proposal to further develop the existing Ocean Observing Systems across the country other than continuing the maintenance of the present installed systems.

(c) Doesn't arise.

(d) The details of fund allocated for 12th Plan period (2012-17) and 2017-18 (Rs. In crores) are as follows:

No.	Type of Observing System/Institute	2012 – 13	2013-14	2014 – 15	2012-16	2016 - 17	Total
1	Argo profiling floats (INCOIS)	6.00	6.00	6.00	6.00	6.00	30.00
2	Drifters (INCOIS)	2.00	2.00	2.00	2.00	2.00	10.00
3	XBT/XCTD (INCOIS)	2.50	2.50	2.50	2.50	2.50	12.50
4	Equatorial and coastal current meter array (INCOIS)	4.10	5.60	4.10	2.60	2.60	19.00
5	Coastal ADCP moorings (INCOIS)	3.00	4.50	4.50	3.50	3.00	18.50
6	Marine met. Ocean parameters onboard Ships/Rigs (AWS & wave) (INCOIS)	2.10	2.10	2.10	0.60	0.60	7.50
7	Wave rider buoys along the coast of India (INCOIS)	1.60	2.10	2.10	0.60	0.60	7.00
8	Bay of Bengal Observatory (INCOIS)	1.45	2.45	1.70	0.70	0.70	7.00
9	Other Observation network - (INCOIS)	2.84	4.64	5.54	2.84	1.09	16.95
10	Calibration and Validation site (NIOT)	1.18	1.42	4.30	1.33	1.50	9.73
11	Coastal Radar (NIOT)	2.40	2.40	2.90	2.90	3.40	14.00
12	Moored Data Buoys (Met-Ocean and Tsunami) and Gliders (NIOT)	6.00	29.75	30.75	43.00	37.00	146.50
	Grand Total	35.17	65.46	68.49	68.57	60.99	298.68

No.	Type of Observing System	2017-18
1	Argo profiling floats, Drifters, XBT/XCTD, Equatorial and coastal current meter array, Coastal ADCP moorings, Marine met. Ocean parameters onboard Ships/Rigs (AWS & wave) , Wave rider buoys, and Bay of Bengal Observatory	23.68
2	Moored Data Buoys (Met-Ocean and Tsunami) and Gliders	31.50
3	Coastal Radar (NIOT)	3.50

(e) This is an ongoing programme. The various ocean observing systems installed at selected locations have been functional over a period time.

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