

**GOVERNMENT OF INDIA  
MINISTRY OF EARTH SCIENCES  
LOK SABHA  
UNSTARRED QUESTION NO. 4503  
TO BE ANSWERED ON WEDNESDAY, DECEMBER 14, 2016**

**HARMFUL ALGAL BLOOMS**

**4503. SHRI MAHEISH GIRRI:  
SHRI PONGULETI SRINIVASA REDDY:**

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

- (a) whether the Government and the National Oceanic and Atmospheric Administration (NOAA), U.S. are jointly working on a research collaboration programme to use combined scientific and technical skills for enhancing the observation of the Earth;**
- (b) if so, the details thereof;**
- (c) whether the Government has conducted any survey to understand the increasing frequency and extent of harmful algal blooms in the coastal and oceanic area of the India's Exclusive Economic Zone;**
- (d) if so, whether the Government has taken any steps to prevent rapid increase of algal bloom and improve fishery management; and**
- (e) if so, the details thereof and if not, the reasons therefor?**

**ANSWER**

**MINISTER OF STATE FOR MINISTRY OF SCIENCE AND TECHNOLOGY AND  
MINISTRY OF EARTH SCIENCES  
(SHRI Y. S. CHOWDARY)**

- (a) Yes Madam.**
- (b) The ministry has been actively working with NOAA, USA towards strengthening of ocean observations in the Indian Ocean with a view to improve understanding ocean process for better forecasting capabilities including studying the Harmful Algal Blooms (HAB). The cooperation is primarily of two folds viz., (i) Develop HAB monitoring and prediction system for short-term prediction of sardine, mackerel and anchovies of the southeast Arabian Sea (ii) acquisition of ocean and atmospheric variables through moored buoys from the equatorial Indian Ocean for the betterment of the prediction of monsoon. As a part the agreement, ship-time of 60 days and related logistics and support had been extended by India, whereas development and deployment of buoys were carried out by NOAA. So far 36 out of 46 buoys have been deployed and all the data have been shared both by India and US scientists.**
- (c) Yes Madam.**
- (d) & (e) As part of this collaboration, 5 workshops were conducted in India and a hands-on training on phytoplankton toxin analysis given to Indian Scientists by NOAA experts at Cochin. The Ministry also has conducted regular surveys along the coastal and oceanic area of India and recorded altogether about 84 algal blooms during the period from 1998 to 2016. Studies suggest a marginal increase in the frequency of occurrence of these blooms over the years due to varied reasons. The data required have been reported for the concerned agencies to make assessment and take necessary action in the improvement of fishery management.**

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