

GOVERNMENT OF INDIA  
MINISTRY OF EARTH SCIENCES  
**RAJYA SABHA**  
**UNSTARRED QUESTION NO. 517**  
ANSWERED ON 04/12/2025

**MARINE MINING AND WEATHER FORECASTING**

517. # **DR. DINESH SHARMA:**

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

- (a) whether Government has taken any steps to increase marine mining activities and upgrade technology in this area and, if so, the details thereof;
- (b) the number of heliport warning systems installed by Government; and
- (c) the mobile applications developed for dissemination of weather-related warnings?

**ANSWER**

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

- (a) Under the Deep Ocean Mission, development of technology and systems to harvest polymetallic nodules from depths of about 5500 m is taken up by the National Institute of Ocean Technology (NIOT) under the Ministry.
- (b) IMD has fifteen (15) unmanned H-AWOS procured and installed at the following heliports: Rohini, Agati, Diu, Pakyong, Kohima, Anini, Naharlagun, Miao, Lengpui, Barapani, Koloriang, Roing, Namsai, Bhalukpong, Daporijo. These systems facilitate display on a local PC and automatic dissemination of weather parameters on the VHF band. However, it is submitted that no automatic warning system is presently available at these locations.
- (c) The India Meteorological Department has taken various initiatives in recent years for improvement in data reception and dissemination of weather forecast and warning services based on the latest tools and technologies. It includes the dissemination of forecasts and warnings through the website, email, SMS, and Social Media Platforms such as YouTube, Facebook, X, and Instagram.

The India Meteorological Department has developed various mobile apps for the dissemination of weather-related warnings, such as

- MAUSAM App for weather forecasting and warnings
- MEGHDOOT App for agro met services
- DAMINI App (developed by IITM) for lightning warning
- UMANG App (developed by Meity) for Weather forecasting and warnings

Additionally, IMD is one of the agencies that generate CAP alerts for severe weather warnings. These Common Alerting Protocol (CAP) alerts are disseminated through SMS as well as the SACHET app, developed by the National Disaster Management Authority (NDMA). These CAP feeds are also being used by APPLE, GOOGLE, and GMAS for the dissemination of weather-related warnings.

IMD has developed an Application Programming Interface (API), which is being used by various private and public organisations for further dissemination of IMD's forecasts and warnings to the general public through different media, including mobile apps developed by different stakeholders.

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