GOVERNMENT OF INDIA

DEPARTMENT OF SPACE

RAJYA SABHA

UNSTARRED QUESTION NO. 3812

TO BE ANSWERED ON THURSDAY, APRIL 03, 2025

USING REMOTE SENSING DATA FOR SOCIAL DEVELOPMENT AND DISASTER MANAGEMENT

3812. MS. KAVITA PATIDAR:
DR. SUMER SINGH SOLANKI:

Will the PRIME MINISTER be pleased to state:

(a) whether Government is using the space remote sensing data for societal developments;
(b) if so, the programmes that are potentially utilisng the space data for rural and remote parts of the country;
(c) whether space data is utilised in disaster management activities; and
(d) if so, the manner in which the data has impacted the natural disasters in the recent past?

ANSWER

MINISTER OF STATE IN THE MINISTRY OF PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND IN THE PRIME MINISTER'S OFFICE (DR. JITENDRA SINGH):

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(a) &(b)

Remote sensing data and space technology are widely employed for societal development activities/programmes. The space technology is utilised in many of the government programmes targeting rural and remote areas of the country. The details of major programmes utilising space based inputs are as given below:

- Geospatial technology for supporting MGNREGA Programme (Geo-MGNREGA): The creation of assets and activities under the MGNREGA programme, are being monitored through Satellite data, Geoportal and mobile applications. More than 6.24 crore assets/ activities have been geo-tagged on the Geo-MGNREGA geoportal. Subsequently, Yuktdhara geospatial planning

portal is also developed, for decision support towards planning and implementation of new assets or activities. Phase-II of Geo-MGNREGA project monitored changes over three years due to implementation of natural resource management activities in 23 Gram Panchayats (one Gram Panchayat for each state) of MGNREGA.

- Integrated Watershed Management Programme: ISRO/ DOS has implemented Geospatial solution for monitoring of about 86,000 micro-watersheds under the Integrated Watershed Management Programme (PMKSY-WDC 1.0). Under this, more than 18 lakh watershed development interventions are geotagged. Under PMKSY-WDC 2.0, around 1150 projects are assessed through Bhuvan tools employing high resolution satellite data (Cartosat 2S & 3).
- Space based Information Support for Decentralized Planning (SIS-DP): Under two phases of this project, very large scale (1:10,000) country level thematic database on Land Use / Land Cover, Drainage, Settlements, Rail & Road and slope is generated using remote sensing data. Visualisation and analytical tools are deployed on 'Bhuvan Panchayat' geoportal (https://bhuvanpanchayat.nrsc.gov.in) to facilitate developmental planning at Panchayat / Village level.
- Rural Road Infrastructure Mapping: The high-resolution satellite data on Bhuvan was used for mapping rural roads under Pradhan Mantri Gram Sadak Yojana (PMGSY). Database of rural roads is prepared for entire country and PMGSY dashboard is deployed on Bhuvan Web Portal for monitoring the progress by MoRD and State Govt. Officials.
- Under Pradhan Mantri Awas Yojana - Housing for All (PMAY-HFA) and Gramin project, a geospatial platform on the Bhuvan portal is developed to streamline the implementation of the (PMAY-HFA) initiative. It helps in managing the construction of homes for 78.64 Lakhs beneficiaries, to monitor progress through five distinct stages of construction and releasing funds based on project advancement.

(c) Under the Disaster Management Support Programme (DMSP) of ISRO/ DoS, ISRO enables the use of space-based inputs for disaster management activities by the respective nodal Ministries/ Departments. Space based inputs are being used in the hazard; vulnerability; risk (HVR) assessment, disaster monitoring, damage

assessment, and development of early warning systems for major disasters such as flood, cyclones, landslide, earthquakes and forest fire. Data from Indian Earth Observation satellites such as Resourcesat-2 & 2A, Cartosat-2 Series, Cartosat-3, EOS-04 (RISAT-1A), EOS-06 (Oceansat-3) and INSAT-3DR & 3DS are being used for disaster management support, in addition to the data from various global satellite missions.

(d) During 2024, major floods were monitored using satellite data and about 300 flood inundation maps were provided to various State and Central disaster management agencies. As part of the National Hydrology Project (NHP), ISRO developed spatial flood early warning system for Godavari and Tapi Rivers. Flood alerts were disseminated through Bhuvan-NHP and NDEM Geoportals, and also to AP State Disaster Management Authority, with 2- day lead time and 85% accuracy. Very High Resolution data from India's RISAT satellite was used for assessing the extent of the Wayanad (Kerala) landslide in July 2024. In the year 2024, tropical cyclones Remal, Asna, Dana and Fengal were monitored with INSAT-3DR, INSAT-3DS and Oceansat-3 data. Active forest fires were detected using satellite data daily 6 to 8 times during the Indian forest fire season in 2024 and the activity is ongoing for the fire season in 2025.

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