GOVERNMENT OF INDIA

DEPARTMENT OF SPACE

LOK SABHA

UNSTARRED QUESTION NO. 536

TO BE ANSWERED ON WEDNESDAY, 03 DECEMBER, 2025

# APPLICATIONS OF SPACE TECHNOLOGY IN VARIOUS SECTORS

536. SHRI VE VAITHILINGAM:

Will the PRIME MINISTER be pleased to state:

(a) whether applications of space technology across various sectors such as agriculture, disaster management, urban planning and telecommunications is currently limited;

(b) If so, the details of the initiatives and funding mechanisms undertaken by the Government including technology adoption funds and public-private partnership schemes to boost the use of space technology in these sectors;

(c) The progress made in fostering innovation and startups in the space ecosystem and the expected impact on India's space economy growth targets; and

(d) The planned measures for creating awareness and capacity building among State Governments and Union Territory's including industries and other stakeholders to utilise satellite-enabled services effectively?

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) **Space technology is extensively used in India for applications across various domains such as agriculture, disaster management, urban planning etc.**

**In the agriculture domain, the major applications developed include pre-harvest acreage & production estimation for major crops, mapping & assessment of horticulture crops, crop intensification for optimal utilization of post-kharif rice fallow areas under National Food Security Mission, drought monitoring & management, crop yield estimation under PMFBY scheme etc. Space technology utilisation is operationalised in MoA&FW with the establishment of Mahalanobis National Crop Forecast Centre (MNCFC).**

**Similarly, satellite data is used for disaster management support for various disasters such as cyclones, floods, forest fire, landslides, earthquakes, GLOF, and agricultural drought. Data of Indian satellites viz., INSAT-3DR & 3DS and EOS-06 are being used by IMD for monitoring tropical cyclones in the Northern Indian Ocean, and for generating early warning of cyclogenesis, track, intensity as well as landfall time & location. ISRO provides flood inundation maps derived from multi-sensor satellite data during floods (riverine or cyclonic) to concerned State Disaster Management Authority for disaster management support. Flood hazard zonation (for six major flood prone states) and spatial flood early warning models (for Godawari & Tapi basins) have also been developed. Mapping of Glacial Lakes (>0.25ha area) in the Himalaya and GLOF risk modelling of 15 prioritised Glacial Lakes have also been done by ISRO under the National Hydrology Project of MoJS. ISRO disseminates active forest fire detections, six to eight times daily, during the forest fire season to FSI/ MoEF&CC and the State Governments for**

forest fire management. Forest fire burnt area is also mapped for major forest fires. ISRO generates satellite data-based inventory of landslides and carries out damage assessment for landslides and earthquakes. National Geospatial Drought portal has been developed on VEDAS Geoportal of SAC/ ISRO, jointly with MoA&FW, following the drought manual 2020. It provides fortnightly assessment of drought through various triggers at taluka & district levels.

Very High Resolution Satellite data is being used for creation of urban geospatial database under the Atal Mission for Rejuvenation and Urban Transformation (AMRUT) project of MoH&UA for potential utilisation in the urban master plan preparation.

Over the years, ISRO is taking the lead in providing the space technology/applications across various sectors such as agriculture, disaster management, urban planning and telecommunications. The participation of Indian private industry, which is in nascent stage in space technology/application, is vital for meeting the increasing demand for space-based solutions by developing space as well as ground applications leveraging India's human capital.

(b) The Government of India, through IN-SPACe, has launched key initiatives to support private industry in developing space technologies/applications for sectors such as agriculture, disaster management, urban planning, and telecommunications. A Joint Working Group identifies use cases for pilot projects funded through IN-SPACe Seed fund. Technology Adoption Fund offers up to 60% funding for Startups/MSMEs and 40% for large industries, capped at ₹25 crores, to promote commercialization. IN-SPACe has also engaged industry partners to develop an indigenous Earth Observation system under a PPP model.

(c) **Space reforms have significantly increased the number and diversity of Indian space startups, many progressing toward commercial launch services, satellite manufacturing, Earth observation constellations, data analytics, SATCOM, and PNT applications. Companies like Skyroot and Agnikul are advancing in orbital launch capabilities and Ananth Technologies is developing a private communication satellite, with indigenous technologies. Growing private participation is poised to expand India's space economy by 2033 through greater investment, high-tech exports, skilled jobs, and a stronger global market presence.**

(d) **To accelerate the adoption of satellite-enabled services across governance and industry, IN-SPACe launched the 'Space Applications Adoptions Workshop" (SAAW). Nine thematic and regional workshops have been conducted, including those focused on the North-East, agriculture, defence, disaster mitigation, and various states. IN-SPACe has organized structured training, outreach, technical handholding, and capacity-building programs. Additionally, the Department of Space conducted National Space Meet 2.0 to sensitise State Departments and Ministries on applications in connectivity, agriculture, disaster management, and urban development.**

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