GOVERNMENT OF INDIA
MINISTRY OF AGRICULTURE AND FARMERS WELFARE
DEPARTMENT OF AGRICULTURE AND FARMERS WELFARE

**RAJYA SABHA**
**UNSTARRED QUESTION NO. 1459**
TO BE ANSWERED ON THE 01/08/2025

# SPACE TECHNOLOGY IN AGRICULTURE

**1459. SHRI G.C. CHANDRASHEKHAR:**

Will the Minister of AGRICULTURE AND FARMERS WELFARE be pleased to state:

(a) whether Government is using space technology in agriculture sector in the country;
(b) if so, the details thereof; and the areas identified by Government for this purpose;
(c) whether Government has also launched a pilot project using space technology for better yield estimation, if so, the details thereof and the outcome of the project; and
(d) the further steps being taken by Government for use of space technology in agriculture and allied sectors for the betterment of farmers?

## ANSWER

THE MINISTER OF STATE FOR AGRICULTURE AND FARMERS WELFARE
(SHRI RAMNATH THAKUR)

(a) & (b): Yes, the Ministry of Agriculture & Farmers' Welfare is using space technology for the various activities which include FASAL project (Forecasting Agricultural output using Space, Agro-meteorology and Land based observations), Drought Monitoring and providing technological support to Pradhan Mantri Fasal Bima Yojana (PMFBY).

Under FASAL project, crop production forecasting for major crops namely rice, wheat, tur, rapeseed & mustard, rabi, jowar, cotton, jute, sugarcane, soybean, lentil & gram are being carried out.

For the Drought Monitoring, Department has developed a Geoportal in collaboration with SAC (ISRO), Ahmedabad. The portal hosts data of multiple drought indicators related to rainfall, soil moisture, remote sensing based crop condition, water storages, etc.

Space technology is also being used for various operational applications under PMFBY, such as Smart Sampling for Crop Cutting Experiments (CCEs), yield estimation & dispute resolution (area and yield).

Further, government has developed a Krishi Decision Support System (Krishi-DSS) which is a cloud based Geo-spatial platform that leverages space technology to empower various stakeholders in the agriculture sector. Krishi-DSS platform hosts a variety of datasets, including weather data, Satellite images, Soil layers, Water related data and field information. Krishi-DSS offers variety of modules/algorithms to support agricultural management and decision-making.

(c) & (d): The Ministry of Agriculture & Farmers Welfare has conducted pilot studies using space technology for yield estimation by engaging various Government and Private Agencies between 2019-23. Various technologies viz., Satellite, Unmanned Aerial Vehicles (UAVs), Simulation models, and Artificial Intelligence/Machine Learning (AI/ML) techniques were used in the study to derive the yield estimates at Gram Panchayat (GP) level. Based on the finding of pilot studies, Technology based GP level yield estimation had been rolled out for paddy & wheat crop from kharif 2023 and soybean crop from kharif 2024 under the YESTECH (Yield Estimation System using Technology) initiative of PMFBY for the timely and transparent claim settlement to the farmers.

*****