

GOVERNMENT OF INDIA
DEPARTMENT OF SPACE
RAJYA SABHA
STARRED QUESTION NO. 122

TO BE ANSWERED ON THURSDAY, JULY 31, 2025

SPACE TECHNOLOGY APPLICATIONS FOR AGRICULTURE

*122. SHRI MEDA RAGHUNADHA REDDY:

Will the PRIME MINISTER be pleased to state:

- (a) the steps taken to promote space technology applications for Agriculture in drought prone areas of Rayalaseema, throughout the country and in specific reference to the State of Andhra Pradesh;
- (b) the details of space technology tools available to predict and mitigate droughts, that can be deployed in a targeted fashion to traditionally drought-prone regions; and
- (c) the details of research initiatives and funding in the utilization of space technologies for farmer benefits broadly?

ANSWER

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

(a) to (c) A Statement is laid on the Table of the House.

STATEMENT LAID ON THE TABLE OF THE RAJYA SABHA IN REPLY TO STARRED QUESTION NO. 122 REGARDING 'SPACE TECHNOLOGY APPLICATIONS FOR AGRICULTURE ASKED BY SHRI MEDA RAGHUNADHA REDDY DUE FOR ANSWER ON THURSDAY, JULY 31, 2025.

- (a) The ISRO/Department of Space, has been supporting the Ministry of Agriculture & Farmers Welfare in generating weather and satellite-based products (rainfall anomalies, satellite derived vegetation indices such as NDVI and FAPAR, soil moisture indicators, and drought indices) under the Crop Weather Watch system. Specific to drought-prone areas like Rayalaseema in Andhra Pradesh, these datasets help in early detection of weather anomalies, monitoring crop condition, and assessing drought severity during the crop season.

ISRO/DoS has developed an operational methodology for assessment and monitoring of drought using meteorological, remote sensing and field data (National Agricultural Drought Assessment and Monitoring System, NADAMS). DoS has transferred the NADAMS methodology to Mahalanobis National Crop Forecast Centre (MNCFC), of Department of Agriculture and Farmers Welfare (DoA&FW), for operational implementation.

ISRO/DoS has developed national level geospatial drought assessment portal (vedas.sac.gov.in/krishi/dashboard), including AP and Rayalaseema, using satellite remote sensing and weather data. Seasonal agricultural drought hazard mapping (Rabi season) has been carried out by NESAC/DoS, across all states of the North Eastern Region (NER) using time-series geospatial data. This approach facilitated identification of drought-prone districts, enabling focused and efficient agricultural drought management strategies.

ISRO/DoS also extends support to Ministry of Agriculture & Farmers' Welfare in utilising space technology for Forecasting Agricultural output (FASAL project), and providing technological support to Pradhan Mantri Fasal Bima Yojana (PMFBY).

- (b) Space technology tools are not yet developed by ISRO/ DoS to predict and mitigate droughts that can be deployed in a targeted fashion to traditionally drought-prone regions. However, ISRO/DoS in collaboration with the Ministry of Agriculture and State agencies, developed and operationalized NADAMS for drought monitoring and its impact assessment. Further, the VEDAS-based drought monitoring portal developed by ISRO helps easy, timely, and objective assessment of drought situations at the district and tehsil levels, enabling early identification of potential drought conditions and supporting timely interventions for effective drought management.
- (c) ISRO/DoS has been carrying out SUFALAM (Space technology Utilization for Food security AgricuLtural Assessment and Monitoring) programme funded by DOS, for developing technology to provide improved value-added agro-met advisories, pest forewarning, and low-cost precision farm solutions, using satellite & drone data, as well as IoT sensors. Several research programs are also undertaken by DoS to develop innovative geo-spatial solutions for soil moisture monitoring, crop mapping, yield estimation, etc.
