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

LOK SABHA
UNSTARRED QUESTION NO. 1576
TO BE ANSWERED ON THE 09TH DECEMBER, 2025

USE OF AI IN AGRICULTURE SUPPLY CHAIN

1576. SHRI KESINENI SIVANATH

Will the Minister of AGRICULTURE AND FARMERS WELFARE कृषि एवं किसान कल्याण मंत्री be pleased to state:

(a) whether the Government has implemented pilot projects using Artificial Intelligence (AI) in the agriculture supply chain, including applications such as blockchain-based traceability, warehouse management, quality assessment, grading, forecasting, logistics optimisation and procurement monitoring;

(b) if so, the details of such pilot projects, including implementing ministries/agencies, locations, commodities covered, technological solutions deployed and key outcomes;

(c) the details of collaborations made with private sector partners, agri-tech start-ups, research institutions and technology companies for developing, testing or scaling AI-enabled agriculture supply chain technologies;

(d) whether any assessment has been carried out on the impact of these AI solutions on efficiency, transparency, reduction of post-harvest losses, farmer incomes and market linkages, and if so, the details thereof; and

(e) the measures taken by the Government to replicate or scale successful AI-based agriculture supply chain models across additional States, warehouses, mandis and FPOs?

ANSWER

MINISTER OF STATE FOR AGRICULTURE AND FARMERS WELFARE
कृषि एवं किसान कल्याण राज्य मंत्री (SHRI RAMNATH THAKUR)

(a) to (e): The government has employed Artificial Intelligence (AI) methods to improve crop productivity, sustainability and farmer livelihoods and to address various challenges in the agricultural sector. Some initiatives are given below:

I. “Kisan e-Mitra” is a voice-based AI-powered chatbot, developed to assist farmers with responses to their queries on PM Kisan Samman Nidhi scheme, PM Fasal Bhima Yojna and Kisan Credit Card. This solution supports 11 regional languages and is evolving to assist with other government programs. At present, it handles over 8000 farmer queries daily and so far, more than 93 lakh queries have been answered.

II. The National Pest Surveillance System, for tackling the loss of produce due to climate change, utilizes AI and Machine Learning to detect pest infestation in crop issues, enabling timely intervention for healthier crops. This tool, currently used by over 10,000 extension workers, allows farmers to capture images of pests to help them mitigate pest attacks and reduce crop losses. At present, it supports 66 crops and over 432 pests. AI-based analytics using field photographs for satellite-based crop mapping is being used in Crop-weather matching monitoring of crops sown.

III. Further, an AI-based pilot was conducted in collaboration with the Development Innovation Lab- India on agriculturally relevant local monsoon onset forecasts across parts of 13 states in India for Kharif 2025. An open-source blended model was used, including NeuralGCM, the European Centre for Medium-Range Weather Forecasts' (ECMWF) Artificial Intelligence Forecasting System (AIFS), and historical rainfall data from 125 years from the India Meteorological Department (IMD). The probabilistic forecasts predicted only the local onset of the monsoon, which is essential for deciding on the date of sowing crops. Local monsoon onset forecasts were sent via SMS through the M-Kisan portal to 3,88,45,214 farmers in 13 states in five regional languages- Hindi, Odia, Marathi, Bangla, and Punjabi. Telephonic farmer feedback surveys were conducted in Madhya Pradesh and Bihar through Kisan Call Centres after the forecasts were sent. The survey revealed that 31–52% farmers adjusted their planting decisions, primarily through changes in land preparation and sowing timing, which included crop and input choice.

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