Government Conducts AI-Based Pilot for Local Monsoon Forecasting to Support Kharif Sowing Decisions

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In the Department of Agriculture and Farmers Welfare, 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 13states in five regional languages- Hindi, Odia, Marathi, Bangla, and Punjabi.

Telephonic farmer feedback surveys were conducted in Madhya Pradesh and Bihar through Kisan Call Centers after the forecasts were sent. The survey revealed that 31% to 52% farmers adjusted their planting decisions, primarily through changes in land preparation and sowing timing, which included crop and input choice.

Further, the Government has decided to implement this capability into the national system based on an equivalent in-house technological solution, leveraging collaboration among the Indian Institute of Tropical Meteorology (IITM), India Meteorological Department (IMD), and Indian Space Research Organisation (ISRO). As the dynamical models from IITM have demonstrated better skills in simulating the local onset, they are being integrated into the AI framework for 2026.

This information was given by Minister of State for Agriculture and Farmers Welfare, Shri Bhagirath Choudhary in a written reply in Lok Sabha today.

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