

PARLIAMENT QUESTION: BHARAT FORECAST SYSTEM

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The Ministry of Earth Sciences (MoES) officially launched the Bharat ForecastSystem (BharatFS) on 26 May 2025 for real-time weather forecasting. The key objectives of BharatFS's development were to enhance the accuracy of extreme prediction and produce forecasts at the panchayat cluster level.

The BharatFS is based on the newly implemented Triangular Cubic Octahedral (TCO) dynamical grid that enables the model to operate at 6 km horizontal resolution, surpassing its predecessor (GFS T1534 ~ 12km). Typical global models by other operational centers in the world are having a horizontal resolution of 9–14 km. It has improved representation of orography, better filtering, and better conservation properties. With the increase in horizontal resolution, BharatFS can generate distinct forecasts at every 6 km. The new model supersedes its predecessor in terms of model configuration and has shown significant improvement in prediction skill.

This forecast system runs at a resolution of 6 km, which is typically about the size of a cluster of panchayats/villages. With the increase in horizontal resolution, BharatFS is capable of generating distinct forecasts every 6 km. This allows the capturing of local weather features, thus enabling the forecasts to cater to a cluster of panchayats/villages. Localized forecasts help farmers with crop planning, irrigation, and harvesting. Additionally, water authorities can better manage reservoirs during monsoon, reducing flood risk and improving yield resilience.

This information was given by Dr. Jitendra Singh, Union Minister of State (Independent Charge) for Science and Technology, Earth Sciences, MoS PMO, MoS Personnel, Public Grievances & Pensions, Department of Atomic Energy and Department of Space, in a written reply in the Rajya Sabha today.

NKR/PSM/AV

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