



# PARLIAMENT QUESTION: FORECAST SYSTEM

## Bharat Forecast System: Accuracy of weather predictions

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The Bharat Forecast System (BharatFS) is based on the newly implemented Triangular Cubic Octahedral (TCo) dynamical grid, which enables the model to operate at  $\sim 6$  km horizontal resolution. It has improved representation of orography, better filtering, and better conservation properties. With the increase in horizontal resolution, BharatFS can generate distinct forecasts every 6 km. With the improved skill of BharatFS at such a high resolution, the model can provide better guidance for weather predictions and extremes at the district and block levels, which are typically 12 km or more.

### **Improvisation of early warning for farmers, fishermen, and disaster-prone communities**

The BharatFS provides a 10-day forecast of rainfall, temperature, low-pressure genesis, and other critical atmospheric conditions at 6.5 km, enabling model guidance in issuing early warnings for multiple sectors, including farmers, fishermen, and disaster-prone communities.

### **Training to local authorities and emergency services**

The model output is not directly disseminated to stakeholders; however, India Meteorological Department (IMD) uses the model to issue operational forecasts and advisories about cyclones, extremely heavy rainfall, and other relevant events, which serve as actionable guidance for emergency services.

### **Integration into Apps or Platforms**

The BharatFS model outputs are displayed in the following publicly accessible IMD website [https://nwp.imd.gov.in/bharatfsproducts\\_cycle00\\_mausam\\_ar.php](https://nwp.imd.gov.in/bharatfsproducts_cycle00_mausam_ar.php).

## **Assistance in planning urban drainage and flood control infrastructure**

The BharatFS model is a global model giving a 10-day forecast of atmospheric variables at 6.5 km horizontal resolution. However, the model output can serve as the initial and boundary conditions to regional flood forecasting models that can generate flood specific variables (streamflow, water level, and flood extent), resulting in planning urban drainage and flood control infrastructure.

This information given by Union Minister of State (Independent Charge) for Earth Sciences and Science and Technology, Dr. Jitendra Singh in a written reply in Rajya Sabha today.

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