

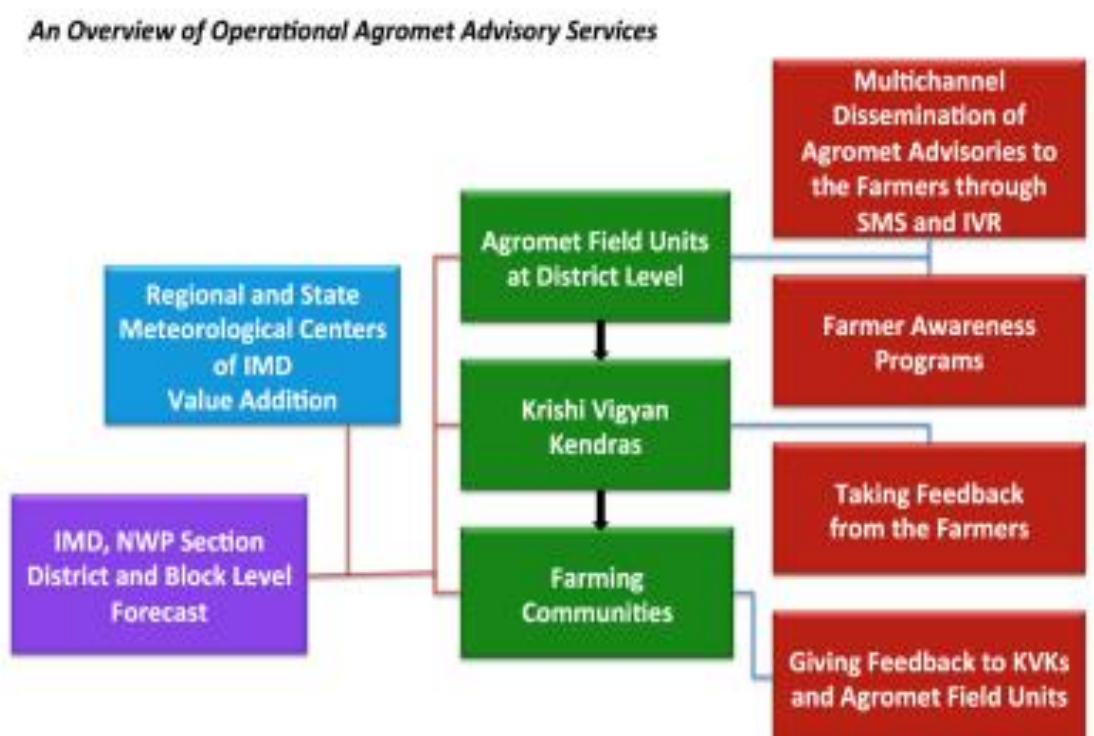
Agrometeorological Activities in India

The Agromet Advisory Services, operated by the India Meteorological Department (IMD) under the Ministry of Earth Sciences (MoES), Government of India, provide tailored weather and climate information to farmers using advanced technologies and best practices. These services deliver location- and crop-specific guidance, ensuring that crucial weather insights reach farmers across the country. Agrometeorological Advisory Services have been expanded to both district and block levels, addressing real-time agricultural needs and supporting weather-based strategies for crop and livestock management. By helping farmers capitalize on favorable weather conditions and mitigate the risks posed by adverse weather, these services play a vital role in enhancing agricultural productivity and ensuring food security.

IMD has established a robust, six-tier operational framework that extends from national-level policy planning in Delhi to district-level Krishi Vigyan Kendras. This structure ensures that farmers receive timely, actionable weather advisories to optimize their agricultural decisions and minimize losses. A key component of the service is its feedback mechanism, which enables district-level forecasters to refine their advisories based on user inputs.

An economic impact study by the National Council of Applied Economic Research (NCAER) revealed that 93% of farmers find numerical weather predictions reliable and incorporate them into their decision-making processes, from sowing to harvesting. The estimated economic benefit of these services stands at \$7.575 billion annually, with projections suggesting a potential rise to \$32 billion if the entire farming community adopts Agrometeorological Advisory Services. (NCAER, 2015).

Agrometeorological Advisory Services employ multiple communication channels, including mass media, group awareness programs, and direct farmer interactions, to



maximize outreach. Currently, around 43 million farmers receive SMS advisories, yet there remains a need to expand dissemination efforts and reinforce the long-term benefits of these services. A participatory, cross-disciplinary approach is adopted to provide climate and weather information while increasing awareness among users. Regular awareness campaigns are conducted across the country, where farmers receive brochures and pamphlets in local languages. These materials contain valuable insights on weather-based farming practices, district-specific crop management techniques, pest and disease control, severe weather alerts, stress-resistant crops, contingency planning, and the District Agromet Bulletin. To enhance the accuracy and effectiveness of advisories, localized Agrometeorological Advisory Services have been introduced, utilizing high-resolution weather forecasts. These localized advisories have demonstrated up to a 13% improvement over district-level forecasts, significantly strengthening rural livelihood security. Additionally, Meghdoot, a mobile

application developed collaboratively by the India Meteorological Department (IMD), the Indian Institute of Tropical Meteorology (IITM), and the Indian Council of Agricultural Research (ICAR), simplifies access to critical agricultural weather updates. Another innovation, the Damini Lightning App, created by IITM Pune and the Earth System Science Organization (ESSO), further enhances farmers' preparedness against extreme weather threats.

The app is monitoring all lightning activity and trigger issuance of alert if lightning is happening near users by GPS notification under 20KM.

		
Farmer Awareness Programme	Feedback from Farmers	Field Day