



Ministry of
**Electronics &
Information Technology**
Government of India



Digital India
Power To Empower



National e-Governance Division

PRESS NOTE

Digital India Ask Our Experts

- **Supercomputing is Strengthening India's Flood Early Warning System**
- **Episode 57 highlights Early Warning System for Flood Prediction for River Basins of India developed by C-DAC**
- **Experts from C-DAC Pune and the Central Water Commission explain how flood modelling and digital technologies support disaster preparedness and timely decision-making**

New Delhi: When a river overflows, knowing which areas may be inundated, how deep the water could rise and how much time communities have to prepare, can make a critical difference. Addressing these questions, the latest episode of Digital India Ask Our Experts explored India's Early Warning System for Flood Prediction and the technology behind the C-Flood portal.

The episode featured Ms. Upasana Datta, Scientist F, HPC-ESEG, C-DAC Pune, and Mr. Mohammad Faiz Syed, Director, Flood Control Application, Central Water Commission (CWC), who explained how scientific modelling is changing the way flood risks are assessed. Developed by C-DAC Pune under the National Supercomputing Mission, in collaboration with CWC, the system uses High-Performance Computing (HPC) to simulate flood scenarios and map potential inundation.



Watch the episode on <https://www.youtube.com/live/N8v70ZFiC90?si=V-FFhMdVRbhDXdtb>

The C-Flood portal provides forecasts up to 48 hours in advance, offering information on areas that may be affected, estimated water depths and the likely duration of inundation, including at the village level. These insights can help authorities identify vulnerable locations and plan appropriate response measures. The experts also traced the evolution of flood forecasting, from conventional methods based on water-level observations at river gauges to advanced mathematical models that incorporate rainfall data and high-resolution digital elevation models. Such modelling is particularly valuable in complex river systems and deltaic regions, where understanding how water spreads across the landscape is essential.

However, forecasts are not guarantees of what will happen. Explaining how these predictions should be used, Mr. Syed said, “We must start looking at flood forecasting not as an exact science but as a tool which can help us in our decision making.” Ms. Datta reinforced this perspective, noting, “Flood early warning is a proactive approach; you need to get it into your mindset that this is not an exact science but we are giving you an opportunity.”

The conversation highlighted a crucial distinction- an early warning system does not prevent a flood, but it can provide valuable time to prepare. Forecast information can support decisions on evacuation, emergency arrangements and other precautionary measures, depending on local conditions and official advisories.

The quality of these predictions also depends on the quality of the information used to generate them. As Ms. Datta put it, “As good as data is, as good an output it could be.”

Beyond computing power and scientific models, the discussion examined the role of communities and land-use planning in reducing flood risks. The experts emphasised the importance of flood-plain zoning, limiting encroachments along riverbanks and improving public understanding of how rivers behave. Technology can strengthen preparedness, but its benefits depend on how effectively information reaches people and informs action.

Looking ahead, Mr. Syed highlighted the broader ambition of the initiative, “The ultimate goal of this unified portal is to cover the entire India with respect to inundation modelling.”

The episode underlined how digital technologies can help transform flood preparedness by providing decision-makers with scientific insights before disaster strikes. It also reinforced the importance of combining reliable forecasts, informed planning and community awareness to build resilience against floods.

The Digital India Ask Our Experts is a LIVE interactive programme streamed on Digital India’s YouTube channel. For more information on upcoming episodes and Digital India initiatives, visit www.digitalindia.gov.in and www.negd.gov.in.