C-FLOOD

Prelims: Current events of National and International Importance

Why in News?

Union Minister of Jal Shakti, Shri C. R. Patil, inaugurated C-FLOOD, a Unified Inundation Forecasting System.

- **C-FLOOD –** It is a **web-based flood forecasting platform** that provides.
  - Two-days advance inundation forecasts
  - Village-level flood inundation maps
  - Water level predictions
- It integrates flood modelling outputs from both national and regional agencies to act as a **comprehensive decision-support tool** for disaster management authorities.
- **Development** – The system was developed collaboratively by,
  - Centre for Development of Advanced Computing (C-DAC) Pune,
  - Central Water Commission (CWC), and
  - National Remote Sensing Centre (NRSC).
- **Project execution** – The project is executed under the **National Supercomputing Mission (NSM)** and jointly steered by,
  - Ministry of Electronics and Information Technology (MeitY)
  - Department of Science and Technology (DST)
- **Technical Features of C-FLOOD** – It uses advanced 2-D hydrodynamic modelling to simulate flood scenarios.
- Runs simulations for Mahanadi Basin using High-Performance Computing (HPC) infrastructure at C-DAC Pune.
- Integrates flood forecasting outputs for Godavari and Tapi Basins, developed by NRSC under the National Hydrology Project (NHP).
- Future plans include expanding coverage to all major river basins across India.

Significance and Benefits

- It enhances flood preparedness by providing early warning at a local (village) level.
- It improves decision-making for disaster response authorities.

- It supports integration of forecasts into the National Disaster Management Emergency Response Portal (NDEM).
- It promotes public awareness and proactive disaster management.
- It helps in planning inundation studies for all river basins to mitigate flood risks.

Reference

PIB| C-FLOOD, a Unified Inundation Forecasting System

