Weather Information Network and Data System (WINDS) Project

Why in News?

The state government has **allocated Rs 9.77 crore** for the **Weather Information Network and Data System (WINDS) project**, out of a total of Rs 60 crore allocated for the current fiscal year (2025-26).

Key Points

- **About:** WINDS is a programmatic initiative to **strengthen weather data infrastructure** in the country and to **provide good-quality weather datasets** from a single digital platform.
    - Launched by the **Ministry of Agriculture and Farmers' Welfare** in July 2023, it is a **national-level initiative** that integrates the existing infrastructure and expertise available with the **Indian Meteorological Department (IMD)**, various State Governments, and public/private technical organizations.
- **Objective**: The WINDS project aims to provide **hyper-local weather forecasting** to boost agricultural productivity.
- **Components:** The project will involve the installation of **weather stations** and rain gauges at the block and panchayat levels.
    - **Weather Stations**: A total of **308 automatic weather stations** will be installed in selected blocks to provide **precise and real-time weather data for local areas.**
    - **Rain Gauges**: Around 55,570 rain gauges will be set up across gram panchayats **to measure rainfall and determine local rainfall patterns**.
- **Additional Infrastructure**:
    - **518 weather stations** are under construction by the revenue department and the **Indian Meteorological Department (IMD).**
- **Expected Benefits:**
    - **Agricultural Productivity**: With **precise weather forecasts**, farmers will be better prepared for **extreme weather events** like droughts, floods, and storms.
        - This will help farmers take preemptive measures to protect their crops and plan for optimal harvesting times.
    - **Risk Assessment & Loss Estimation**: WINDS will assist in estimating losses caused to **horticultural crops** during extreme weather conditions, helping stakeholders respond effectively.
    - **Crop Insurance & Agriculture Programs**: The weather data will be used to **decide crop insurance** and aid in other agricultural programs, thus boosting overall productivity.
    - **Air Quality Monitoring**: The project also focuses on improving **air quality monitoring** through the development of low-cost, reliable, sensor-based systems.
    - **Technological Advantage:** WINDS employs **advanced weather data analytics** to provide actionable insights for agriculture.
        - The system aims to generate **hyper-local weather data**, which will support farmers in making informed decisions regarding irrigation, sowing, and harvesting.