Date : 30/09/2023

Project ID : Proj_223335_Team_2

Project Title : Flood Monitoring & Early Warning

PHASE-1

Flood monitoring involves continuously tracking and assessing various factors related to flooding to provide timely warnings and support effective response efforts. Key components of flood monitoring include:

1. **Weather and Rainfall Data**: Continuous monitoring of weather conditions and rainfall patterns is essential to predict potential floods. Rainfall data from various sources, such as weather stations and radar systems, are analyzed to detect heavy rainfall that may lead to flooding.

2. **River and Stream Gauges**: Installing gauges along rivers and streams helps measure water levels and flow rates. This data is crucial for predicting riverine floods and understanding their severity.

3. **Satellite Imagery**: Satellite technology provides valuable information on larger-scale weather patterns, river levels, and changes in landscape due to flooding. It helps in assessing the extent of flooding in remote or inaccessible areas

4. Groundwater Monitoring

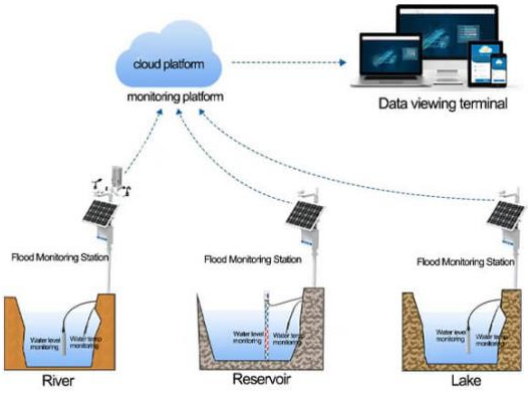
5. Hydrological Models

6. Flood Sensors

7. Community-Based Monitoring

8. Early Warning Systems

M9. Data Analysis and Communication



Early warning systems play a critical role in disaster risk reduction, including for events like floods, earthquakes, tsunamis, hurricanes, and more. Here's how they work:

1. **Data Collection**: Early warning systems start by collecting data from various sources, including weather stations, seismometers, river gauges, satellites, and more. These sensors continuously monitor environmental conditions.
2. **Data Analysis**: Collected data is analyzed in real-time to identify any unusual or potentially hazardous conditions. For example, in the case of floods, rising river levels or heavy rainfall can trigger alerts.
3. **Modeling and Prediction**: Sophisticated models are used to predict the likely impact of the detected conditions. For floods, these models consider factors like rainfall intensity, soil moisture, terrain