

Addressing the need for 'Early Warning Systems' to manage weather extremities

As the climate crisis accelerates, extreme weather events are becoming more frequent and intense, including catastrophic rainfall, flooding, and rapidly intensifying tropical cyclones, landslides, flash floods, avalanches, droughts. The super cyclone that struck Gujarat in 1999 was a disaster that left widespread devastation in its wake.

Advancements in disaster planning and early warning systems can be a game changer, enabling key stakeholders to take proactive measures, manage risks, and respond swiftly to reduce the human, economic, and infrastructure toll of such catastrophes.

How Do We Prepare For These?

We need to invest in mitigation & adaptation planning through structured and non-structured systems. Early Warning systems are one of the most effective non-structured adaptive measures.

RMSI's Climatic-hazard Early Warning System (CHEWS)

RMSI has developed a "Global EWS software framework" that could forecast disaster upto 3 days in advance.

Web-based platform

Disaster Early Warning upto 3 days in advance

Integrates multiple agencies for better coordination

Hazards Modeled


Cyclone



Flood



Avalanche


Landslide


Drought

HYBRID MODEL

 **Numerical Models**
Weather Models | Numeric Model | Storm Surge

 **AI/ML Models**
CNN | RF | ANN | SVM

Finite Differential | Finite Element | Empirical Equations

Developing Early Warning Systems Across the Globe

Our framework has helped deliver EWS for 17 River basins in India and multiple large river basins in Asia & Africa.

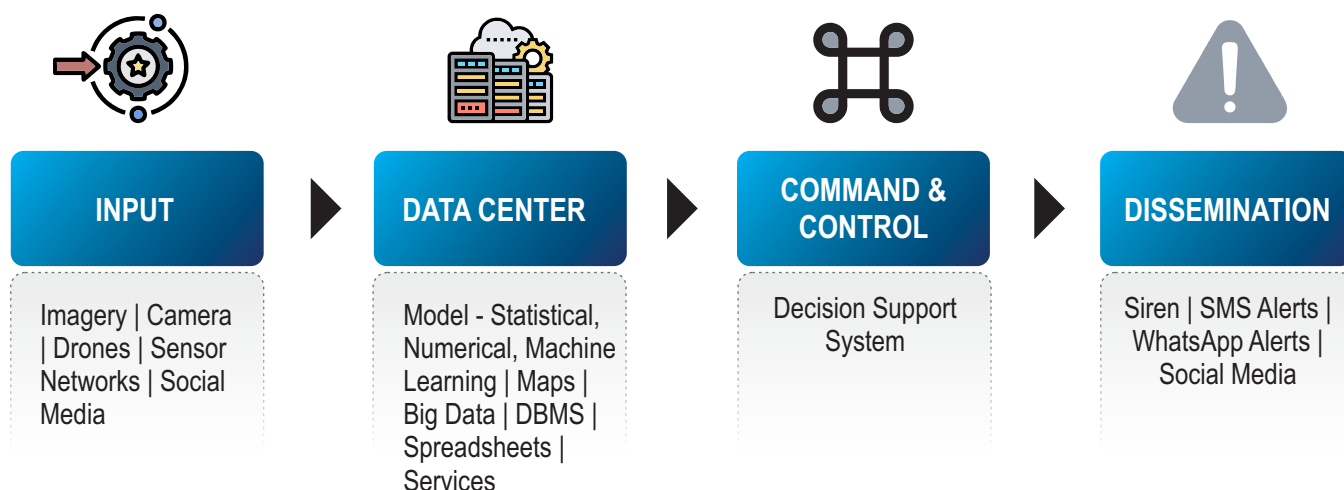
MAJOR RIVER BASINS IN INDIA

Rapti river basin, Uttar Pradesh | Dhansiri river basin, Nagaland | Kopili river basin, Assam | Bagmati-Adhwara river basin, Bihar | Pennar, AP | Krishna, AP | Godavari, AP | Vamsadhara, AP | Nagavali, AP | Jhelum, J&K | Chenab, J&K | Tawi, J&K

MAJOR LANDSLIDE PRONE AREAS MODELED

J&K, Ladakh, Uttarakhand, Assam, Kerala

Early Warning System Framework



SUCCESS STORIES

Strengthening Flood Resilience in Nigeria

As part of the "Ibadan Flood Forecast and Warning Service" project, RMSI developed a comprehensive flood forecasting and early warning system for Nigeria. This system provides timely flood alerts to key agencies like NIHSA, NIMET, and NEMA. Additionally, RMSI created a detailed communication and dissemination strategy, including a warning service with automated alarm system linked to water levels and forecasts, ensuring effective last-mile connectivity.

Augmented Drought Management in the Nile Basin, Ethiopia

RMSI developed a basin-wide Drought Early Warning System (Nile DEWS) to monitor and forecast drought conditions across the Nile Basin. The project included creating drought indicators, enhancing operational capabilities, and integrating the system with the NBI Integrated Knowledge Portal. RMSI also conducted capacity-building programs for regional centers, empowering stakeholders to effectively mitigate drought risks.

Enhancing Water Resource Management in the Pyanj River Basin, Tajikistan

Under the ADB-funded project to "increase the agricultural productivity and efficiency of forecasting services in the PRB, RMSI successfully supported climate resilience and improved water resource management. The system provides the development of rainfall-to-runoff and hydraulic models, flood mapping to prioritize pilot districts, and designing early warning systems. By integrating advanced modeling techniques and stakeholder engagement, RMSI empowered the region with tools for effective flood forecasting and agricultural productivity enhancement.

RMSI's unwavering commitment has led us to serve more than 40 nations in the Global South, empowering their communities to enhance their resilience against natural disasters

Book a complimentary demo session
Write to us at info@rmsi.com

