Release note on ICR-ER, NDEM LITE & Assam Flood Hazard Atlas

The **Integrated Control Room for Emergency Response (ICR-ER)** is a state-of-the-art, disaster-resilient facility established by the **Ministry of Home Affairs (MHA), Government of India**, in New Delhi. The ICR-ER plays a crucial role in enabling near real-time information reception, strategic-level monitoring, situational awareness, and effective decision-making related to preparedness and response activities.

The National Remote Sensing Centre (NRSC), ISRO, provided the complete design and implementation plan for the ICR-ER with latest Information and Communication Technology (ICT) infrastructure, including civil & electric works, large-format video walls for monitoring, a redundant and failsafe communication network, and specialized furnishings to support 24x7 operations. The facility is established at National Data Centre Complex-II (NDCC-II) in New Delhi.(Fig 1) To ensure system redundancy and reliability, a Disaster Recovery (DR) node has been established at the NRSC Hyderabad Campus, Hyderabad, with seamless integration into the MHA's offices located in North Block, New Delhi.

One of the key technological backbones supporting ICR-ER is the National Database for Emergency Management (NDEM) version 5.0, developed by NRSC/ISRO. This platform was designed specifically to meet the operational requirements of the ICR-ER in the management of natural disasters across India. NDEM is a unique, space-enabled geospatial platform that integrates real-time satellite-based inputs and forecasting services with an extensive multi-scale database and Decision SUPPORT System (DSS) tools. This powerful combination enhances the nation's disaster preparedness and response capabilities significantly. Site is operational at MHA, New Delhi with URL, https://ndem.in.

The ICR-ER facility is inaugurated by the Union Hon'ble Home Minister, Shri Amit Shah on 16th June, 2025 at Vigyan Bhavan, New Delhi during Relief Commissioners meet (Fig 2)
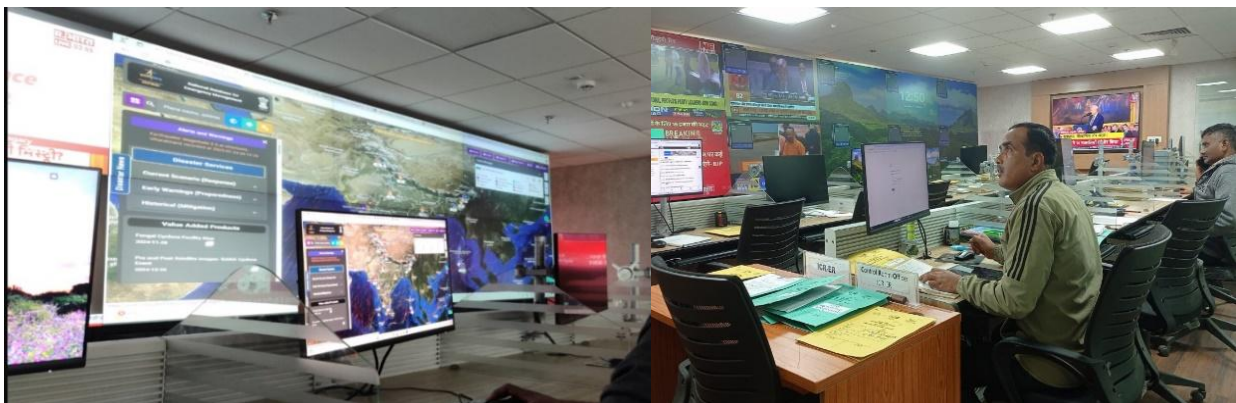

Fig 1 Control at MHA with NDEM portal

Fig 2. Inauguration of ICR-ER by the Hon. Union Home Minister of India

National Database for Emergency Management (NDEM) Lite Mobile App: To support field officers involved in disaster management, NRSC-ISRO has developed the NDEM Lite mobile app, on both Android and iOS platforms. (Fig 3)

- This app provides real-time disaster data and essential tools in a portable format, enabling field officers to access critical information on the go.
- The mobile app ensures that disaster response teams are connected, informed, and able to act quickly in remote locations.
- The iOS version has been successfully deployed on the App Store.

NDEM Lite 2.0 is launched by Hon'ble Union Home Minister on 16th June, 2025 at Vigyan Bhavan, New Delhi during Relief Commissioners meet (Fig 4).
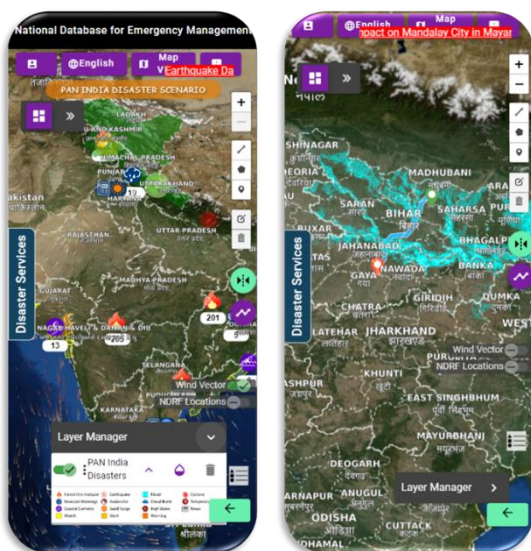

Fig 3. NDEM Lite v2.0 Mobile App

Fig 4. Release of NDEM Lite 2.0 by the Hon.Union Home Minister

Flood Hazard Zonation Atlas of Assam State (1998-2023):

Assam is one of the worst flood affected states in the country, ISRO provides extensive space based support to the Assam Govt. in Disaster Management. NRSC provides near real-time flood inundation satellite based maps to ASDMA under ISRO's DMS programme. A

flood hazard zonation atlas (Fig 5) for Assam State was created using historic satellite datasets from 1998 to 2023 and historical water level data obtained from CWC during the same period. It depicts flood frequency across the state over 26 years. Geospatial database has been integrated in preparing the flood hazard maps at state and district levels. Flood hazard is categorized into five classes: Very Low to Very High. Furthermore, a flood hazard index was also calculated to categorize each district into 3 levels of flood hazard. The flood hazard zonation maps have undergone validation process on-site by the Assam State Disaster Management Authority (ASDMA), Assam. The validation process was carried out through its district/circle offices, and the valuable information obtained from field validation has been integrated into the Atlas. This information is useful in controlling developmental activities in floodplains, in crop insurance, in planning flood control structures and in construction of flood relief and rescue centres.

The atlas was released by the Hon. Union Home Minister of India on 16-Jun-2025 at Vigyan Bhavan, New Delhi during Relief Commissioners meet (Fig 6)
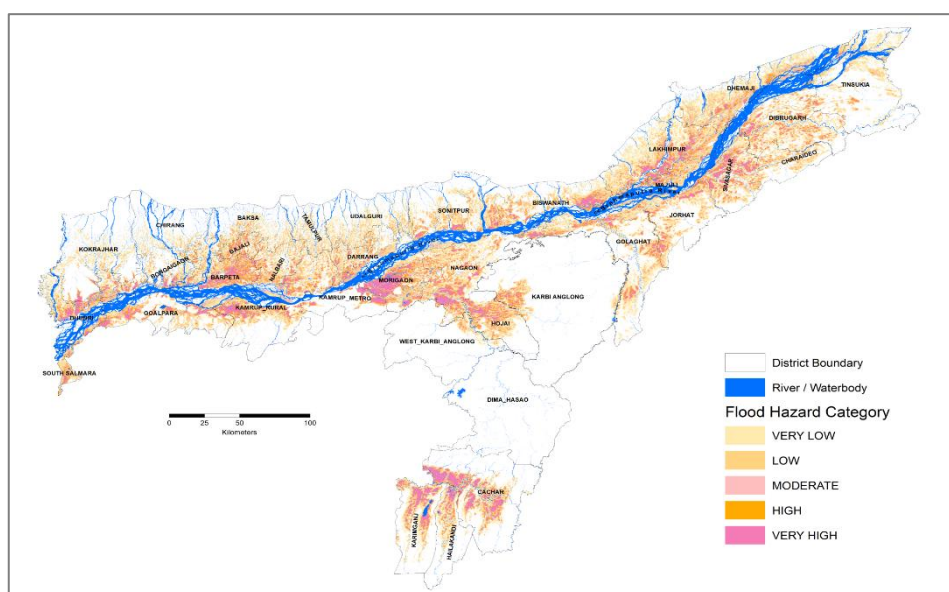

Fig 5 Flood Hazard Map of Assam State

Fig 6 Release of the Flood Hazard Zonation Atlas of Assam by the Hon. Union Home Minister