14. National Database for Emergency Management (NDEM)

National Database for Emergency Management (NDEM) is a unique Geo-portal to disseminate space-based inputs along with services of forecasting organizations addressing all natural disasters in all phases at the country level with the amalgamation of multi-scale geospatial database coupled with decision support system tools. Hon'ble Home Secretary Shri Ajay Kumar Bhallalaunched the Current version of NDEM 4.0 Geo-Portal on 21.05.2021.

The National Database for Emergency Management (NDEM) emphasizes the organization of a comprehensive uniform, structured, seamless, multi-scale scale geospatial database for the entire country using spatial integration procedures, generation of web map services for situational assessment, development of decision support tools for effective decision making, providing communication tools for interaction between field and control room officials, developing incident reporting mechanism, real-time field information collection, situation assessment, resource identification, and mobilization. The salient features of the NDEM are:

- ✓ Structured repository of a multi-scale geospatial database for the entire country
    - ✦ Base, Thematic, Infrastructure database – 35 layers for each State
    - ✦ Point of Interests – More than 12 million
    - ✦ Satellite imagery – 5.8 m to High-Resolution data

- ✓ Disaster-specific products (pre/post scenarios) for possible natural disasters are disseminated in near real-time through NDEM.

- ✓ Historical disaster repository of products since 1998 - acts as a knowledge base for Preparedness & Mitigation phases.

- ✓ Decision Support tools -user-friendly GUI-based tools for decision-making.
    - ✦ Proximity Analysis
    - ✦ Routing with the option of creating barriers
    - ✦ Multi-layer Analysis for generation of analysis damage statistics,
    - ✦ Evacuation tool
    - ✦ Risk zone maps for evacuation

- ✓ Disaster Dashboard with the latest information for situational assessment
    - ✦ Latest Disaster-Specific News
    - ✦ Social Media Tweets
    - ✦ Daily/Seasonal products
    - ✦ Alerts/Warnings from forecasting agencies.

- ✓ Incident Reporting - Disaster event reporting through Mobile Apps, SMS, and Portal.

- ✓ Interaction tools - Communication & data exchange among disaster managers.

- ✓ Mobile Apps - Apps for Relief Management, Attribute Collection & Geo-Tagging of Facility.

- ✓ IDRN– Integration of the Indian Disaster Resource Network database for locating suitable equipment with necessary details.

- ✓ Resource Management - Resource allocation, organization, and tracking of essential commodities.

- ✓ Damage Statistics -Submission of damage statistics by States on the closure of the disaster event to MHA for all possible disasters.

- ✓ SMS Alerts - SMS alerts for heavy & extreme rainfall, heat/cold wave information.

- ✓ 3D visualization

- ✓ Regional Language support - Hindi, Telugu, Tamil, Bangla

- ✓ Post Disaster Need Assessment (PDNA) tools: For scientific assessment of Reconstruction and Relief activities.

- ✓ NDEM Lite: Mobile compatible version of NDEM V4.0

NDEM products & services are dissemination through NDEM Version 4.0, which is compatible with any desktop, laptop, tablet, smartphone, etc. (both desktop version and Mobile compatible version) and is accessible to all States/UTs, Districts, NDRF, SDRF, etc. The services are now served as web service, web map service, GeoPDFs, Email, WhatsApp, SMS, etc.

The future plan includes enhancing NDEM services, developing tools and a large-scale database in tune with ICR-ER, 3D visualization of disaster-specific products & POI, and developing DSS tools in the 3D environment. Providing NDEM access in more regional languages, Interlacing Mobile apps and implementing NDEM lite (Mobile version of NDEM v4.0), and Developing a framework to automate the moderation of the mobile content uploaded through crowdsource or any NDEM mobile application using AI/ML technologies.
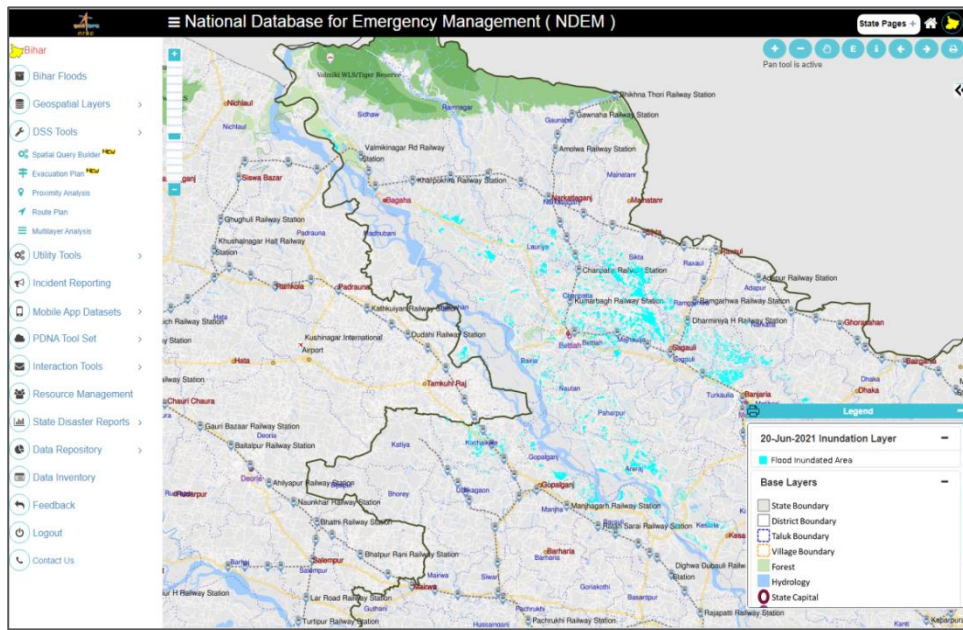
In the future, Integrated Control Room for Emergency Response (ICR-ER) will be established at NDCC-II, New Delhi, wherein NDEM will have a dual role, i.e., as a data provider and Disaster Recovery (DR) site.
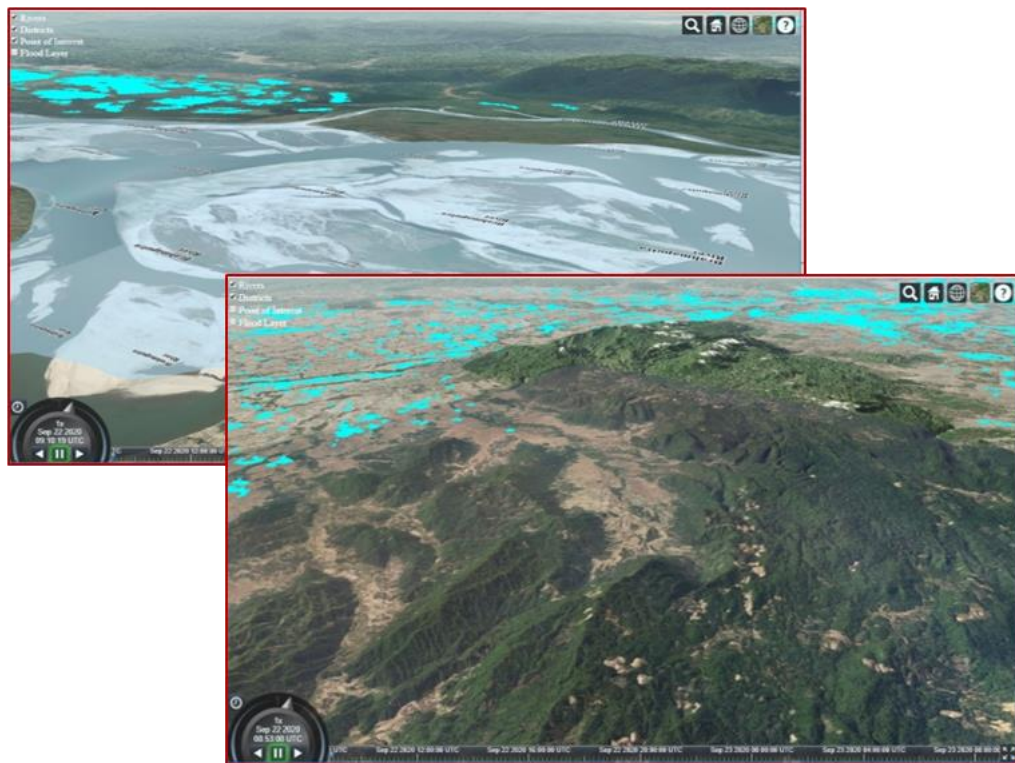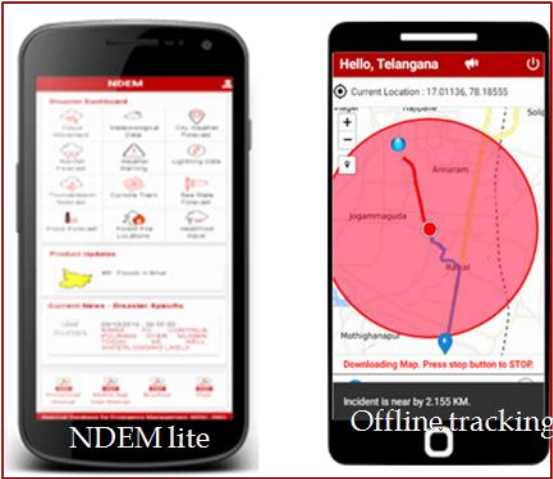

Launch of NDEM 4.0

NDEM 4.0 Multilingual dashboard

Bihar State Home page

3D Visualization –Assam floods

Mobile apps