NDEM Milestones

2020
NDEM 4.0 (Regional Languages)
Enhanced Disaster Dashboard
Decision Support Tools & PDNA Tools
NDEM *Lite*

2018
NDEM services up to district level
Customized portals for States
Regional training programs

2017
NDEM 3.0
Disaster Dashboard
MoUs with States
3 SKOCH Awards

2016
Customized NDRF portal

NDEM 2.0
Mobile Apps
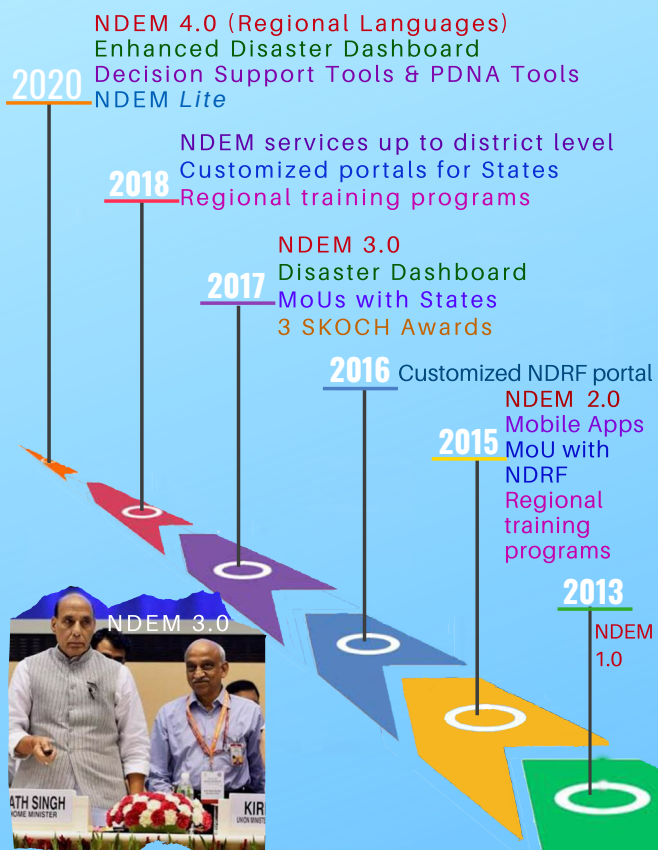MoU with NDRF
Regional training programs

2015

2013
NDEM 1.0

NDEM 3.0

Training Programmes

In order to create awareness about the NDEM products & services, periodical training programs are conducted across the country. Presentations, hands-on exercises, mock drills are conducted as part of training classes. Training sessions are conducted for NDRF, SDRF, State, District disaster management officials at various locations in the country. So far, more than 2000 officials are trained on NDEM products & services since 2013.

Regional Training Program

Mock Drill to NDRF

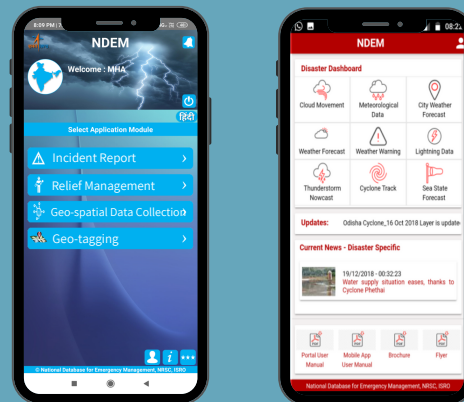*Geo-tagging of facilities*

Workshop on NDEM

Mobile Apps

Mobile Apps in Android platform are integrated to NDEM framework to support situation assessment, incident reporting, database enrichment. The data received from field is visualised on NDEM portal for further decision making. The received field data is showcased on NDEM viewer at control room for further planning. *https://ndem.nrsc.gov.in*

NDEM *Lite* mobile app is developed by including limited but essential services like DSS tools (Proximity & Route Analysis) and basic geospatial services like schools, hospitals etc.,

Relief Management

NDEM Lite

About Us

The government of India has envisaged a policy to build a safer and disaster resilient India by developing a holistic, multi disaster and technology-driven strategy for disaster management. Ministry of Home Affairs (MHA) has translated this approach into NDEM for taking up ameliorative measures for providing timely information for decision making. NRSC/ISRO is the lead agency to implement and operationalize NDEM project.

Contact Us

Deputy Director, RSA
NRSC/ISRO
Hyderabad - 500037, TS
India

Phone: +91-40 2388 4257
Email: ndem_admin@nrsc.gov.in
Web: https://ndem.nrsc.gov.in

Government of India
National Remote Sensing Centre
Indian Space Research Organisation
ISO 9001:2015

National Database For Emergency Management

National Database for Emergency Management (NDEM) is a national repository of multi-scale geospatial database coupled with decision support tools. It is a unique and homogeneous database served for the entire country with essential database elements for addressing Emergency/disaster management in the country. NRSC/ISRO established a state-of-art facility with a structured framework with multi-institutional participation to assist the disaster managers at district levels of all States/UTs for preparedness, hazard/risk zonation, damage assessment, and emergency response.
The objectives of NDEM are:
1. Organization of multi-scale database for entire country
2. Development of decision support tools for addressing emergency management
3. Establishment of NDEM data center at NRSC, Shadnagar

NDEM services have been operationalized since 2013 providing timely information along with disaster specific products for effective decision making. The NDEM services are implemented on behest of Ministry of Home Affairs (MHA)

NDEM Version 4.0 – Salient Features

In addition to multi-scale database services, NDEM Version 4.0 provides Disaster Dashboard, Near Real-Time Products, Historical Product Catalogue, Disaster Event Card, Incident Reporting, Product Updates, Disaster News / Tweets, Indian Disaster Resource Network (IDRN), Resource Management, PDNA Tools etc., with regional language support.

Disaster Dashboard

Cyclone Track

Forest Fire

Disaster Dashboard provides daily/event based alerts, warnings, forecasts, near real time products derived from satellite imagery. The services include meteorological services, cloud movement, rainfall forecast, heat wave, cold wave predictions, lightning alerts, thunderstorm warnings, flood forecast information, sea state forecast, forest fire locations, rainfall induced landslide alerts, earthquake events etc., from authorized sources.

Multi-scale Geospatial Database

Multi-scale database services from State to Panchayat level are enabled for entire country. State wise database is served at 1:50,000 scale for all states/UTs. At 1:10,000 scale services are integrated for 350 districts consisting of 100 multi hazard prone and 250 most vulnerable districts for detailed disaster preparedness and planning. The spatial data is segregated into

1.Base layers - Administrative Jurisdictions, Transport Network, Hydrology, Coast Line etc.
2.Thematic layers - Land cover, Settlements, Forest, Mining etc.
3.Infrastructure layers - Hospitals, Airports, Transport nodes, Reservoirs, Dams, Power plants etc.
4.Point of interest - More than 12 million POIs with quarterly updation have been integrated into NDEM platform, which plays a vital role during emergency situation for necessary planning.
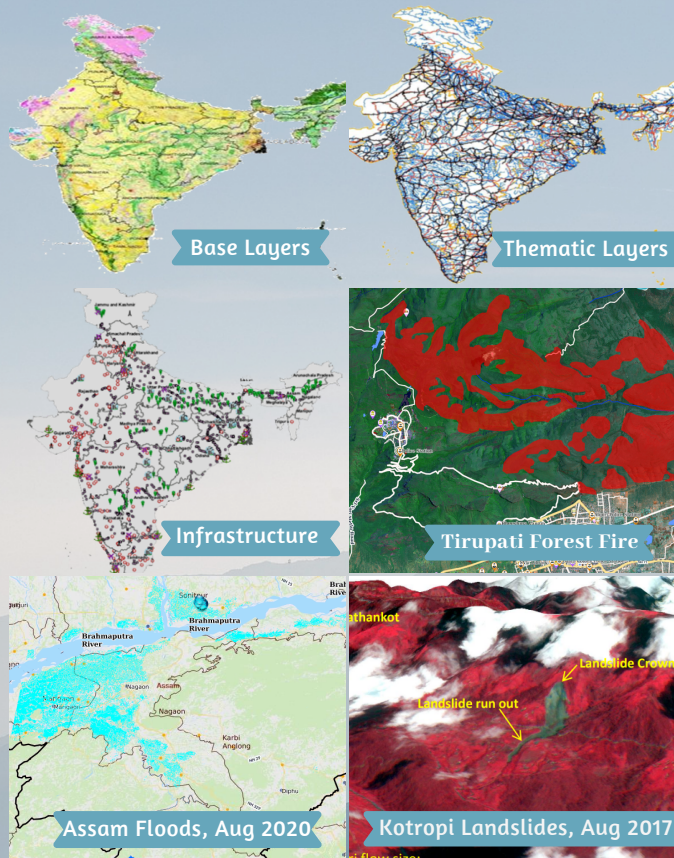
The Spatial data is complemented with satellite imagery with resolution ranging from 5.8 to Sub meter level resolution along with Digital Elevation Models.

Point of Interests

Automotive stores	Hindu Temples	Post Office
Ayurveda & Yoga	Historical Monument	Property Agencies
Banquet & Marriage hall	Hospitals	Residential Places
BPO	Hotels	Restaurants
Cineama	Industrial Centers	School
Commercial Centers	Landmarks	Service Facilities
Crematorium	Leisure Points	Shopping Centers
Financial Services	Library	Stadium
Fire & Gas station	Mandi	Telecom
Food courts	Media & Advertising	Tourist Locations
General parks & Gardens	Medical store	Tourist Services
Government Office	Oil & Petroleum	Transport nodes
Gym	Worship Places	University/College
Health Centers	Police Station	

Dynamic Rendering

Geospatial data is served with dynamic scale based rendering for better visualization and performance from small scale to large scale levels.

Base Layers

Thematic Layers

Infrastructure

Tirupati Forest Fire

Assam Floods, Aug 2020

Kotropi Landslides, Aug 2017

Disaster Products

Event wise disaster specific services for all possible natural disasters are disseminated through NDEM. These products are disseminated to authorized NDEM users as Web Map Services (WMS), GeoPDF's, Reports etc.
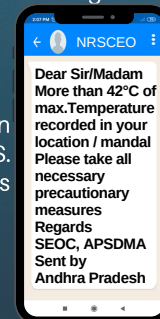
Historical disasters products of Cyclones, earthquakes, floods, forest fires, landslides are integrated, which acts as a ready reckoner for planning and decision making. Data is available from the date of initiation of NDEM i.e. 2013 and cyclone data is available with best tracks since 1990 .

India Disaster Resource Network (**IDRN**) - Database is integrated with NDEM, this module helps to locate relief and rescue equipment from nearby locations along with visualization.

Communication tools

Mechanism for dynamic communication between field and control room is enabled through SMS. Email and Broadcast Messages. Alerts, warnings are integrated through NDEM portal.

NRSC <space> NDEM <space>
"Type your message" to 51969

Dear Sir/Madam More than 42°C of max.Temperature recorded in your location / mandal Please take all necessary precautionary measures Regards SEOC, APSDMA Sent by Andhra Pradesh
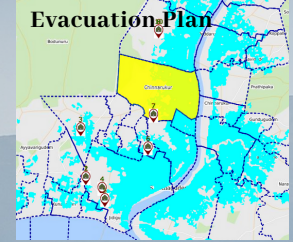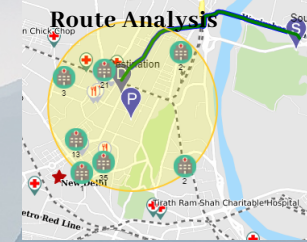
Decision making tools

Evacuation Plan (New)- Identification of villages with risk zones, suitable relief shelters with route plan.
Proximity Analysis - Finding emergency facilities at any location (Distance wise).
Route Analysis - Shortest and Optimal path between disaster location to nearby facility.
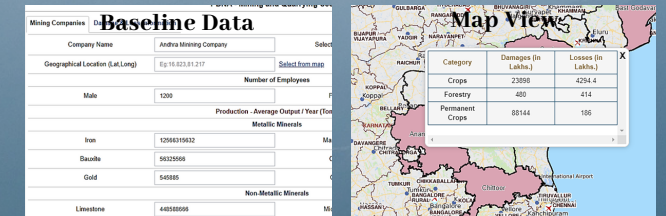**Multi Layer Analysis** - Analysis of disaster specific products w.r.t any administrative boundary.
Spatial Query Builder (New) - GIS based spatial query tool to filter out the information.

Route Analysis

Evacuation Plan

PDNA

Post Disaster Needs Assessment - is an internationally accepted methodology for determining the physical damages, economic losses, and costs of meeting recovery needs after a natural disaster.

Baseline Data

Map View

Category	Damages (in Lakhs.)	Losses (in Lakhs.)
Crops	23896	4294.4
Forestry	480	414
Permanent Crops	88144	186

Incident Reporting

Report any disaster incident from on-site or off-site by using NDEM v4.0, Mobile app - Relief Management used for quick reporting to Control Room. All communication is enabled through SMS alerts for quick response.

The reported incidents are forwarded to NDRF with approaval mechanism for proceeding to relief and rescue operations.

3 ways of Reporting an Incident

1.Phone
- SMS 51969

2. NDEM 4.0
- State Portal

3. Mobile App
- Incident Report

The reported incidents are visualized in Control room for planning and decision making.