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India Disaster Resource Network

Effectiveness of
India Disaster Resource Network
During Disasters

National Institute of Disaster Management (NIDM)
Ministry of Home Affairs, Government of India

Annual Relief Commissioners Conference at NIDM 2 May 2026

Structure of the Presentation

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02.	**Operationalization of IDRN** 2.1 Data Collection Process 2.2 Operational Chain & Role Players 2.3 Past 5 year Trends of Data Updation in IDRN Portal by Line Departments 2.4 Recent Development - IDRN API Services
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1. INTRODUCTION OF IDRN

INTRODUCTION

*A web-based platform for managing the up-to-date location-based inventory of **equipment, skilled human resources and critical supplies for disaster response**.*

- Initiated by **Ministry of Home Affairs (MHA) during the year 2004 &** hosted at the **National Informatics Centre (NIC) on Cloud server.**
- **NIDM, since June 2008,** is maintaining and monitoring the portal.
- All **36 States/UTs, along with 780 districts**, have successfully registered on the portal as on **31st March 2026.**
- The District Administration is **responsible for updation and validation of database on the portal** after collecting it from various line departments of their respective districts.

Objectives of the Portal

1. To build a systematic and up-to-date location-based inventory of equipment, skilled human resources and critical supplies related to disaster response.
2. To enable the decision makers and responders to access inventory of equipment, skilled human resources, and critical supplies required during disasters.

IDRN- An Important Tool for Effective Response

IDRN is a real-time map of critical disaster resources — before, during and after, an emergency.

Equipment Inventory

232 equipment types are available under this head like

- gas cutters,
- earth movers,
- search lights,
- hydraulic platforms,
- Others…

Skilled Human Resources

Directory of **31 types of personnel** at district and state level are available like

- Divers
- Search & Rescue Teams with Canine squads
- High Rise Buildings fire fighting teams,
- Others…

Critical Supplies

104 types of critical/medical supplies are available under this head like

- dry chemical powder,
- anti snake venom,
- PPE kits,
- halogen tablets,
- Others…

2. OPERATIONALIZATION OF IDRN

Data Collection Process

Department / Agency Details

FORM 1 **MANDATORY FOR ALL**

Basic identification and contact information of the reporting department, agency, or organization.

Equipment Inventory

FORM 2A **ALL EQUIPMENT TYPES**

Comprehensive listing of all types of equipment available with the department — including quantity, condition, and location.

Skilled Human Resources

FORM 2B **ALL HUMAN RESOURCES**

Details of all types of skilled personnel, their specialization, availability, and deployment readiness.

Critical Supplies

FORM 2C **ALL CRITICAL SUPPLIES**

Inventory of all critical supplies including medical, food, logistics, and emergency consumables.

Operational Chain & Role Players

Role Players & Operational Chain

NIDM

Maintains & monitors portal; conducts user training; follows up with States/UTs for regular updation.

NIC

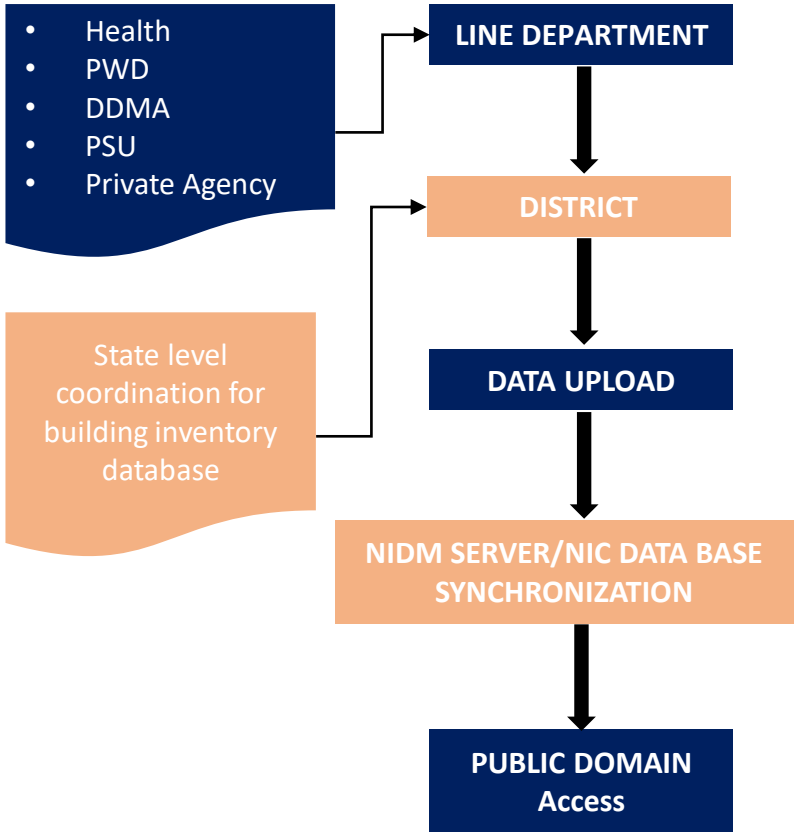
Hosts IDRN on cloud server; ensures uptime and cybersecurity; manages API infrastructure.

State Authority (SDMA / Revenue Dept)

Coordinates with District Magistrates; reviews state-level completeness; escalates gaps.

District Collector/Magistrate

Authorises data collection; distributes forms to line departments; oversees data entry at district level.

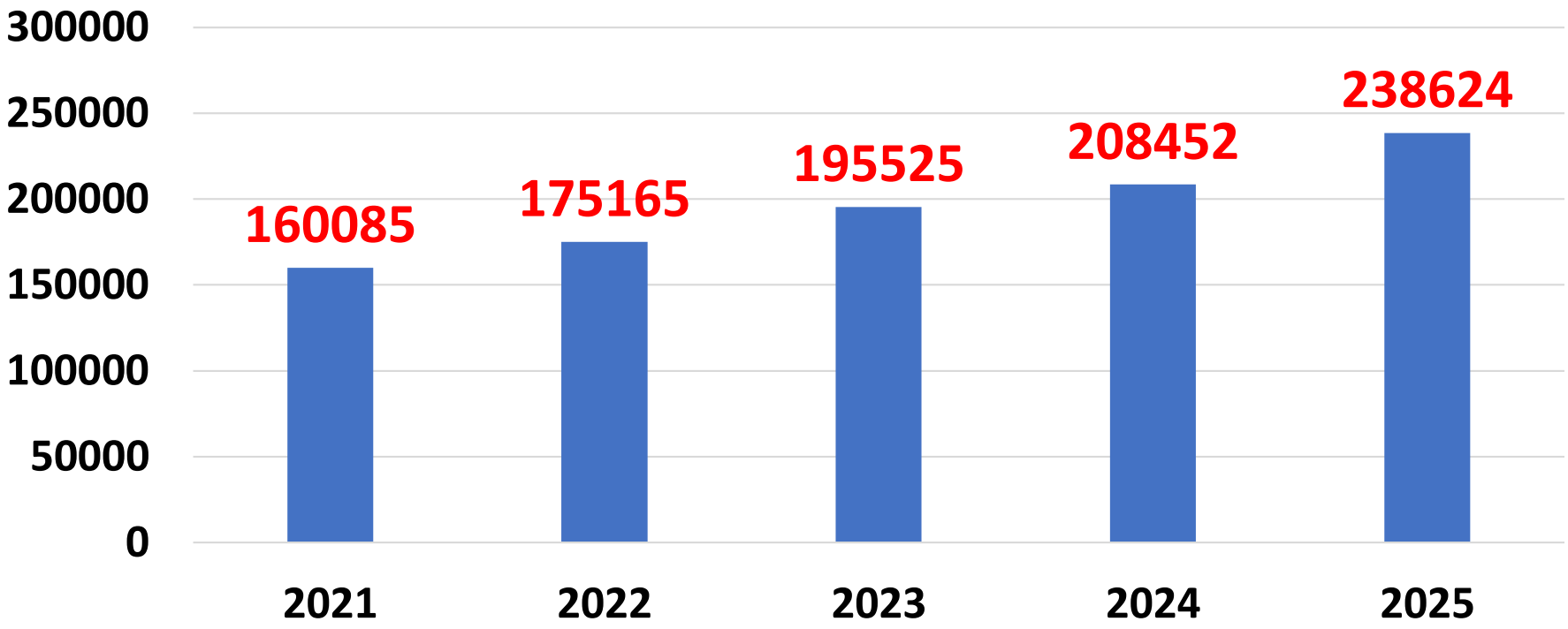


Key Operational Challenges

- Lack of Regular Updation at District Level
- Lack of trained personnel at the district level
- Lack of dedicated human resource

CRITICAL: District Magistrates/Collectors are the first and last line of data quality. State-level monitoring is the force multiplier.

Past 5 year Trends of Number of Records in IDRN Portal by Line Departments



Source: IDRN Portal

Data Updated as on 31-December-2025

Recent Development - IDRN Application Programing Interface (API) Services

- Establishes seamless access to the IDRN database in both **online and offline** modes, specially during disaster situations.

Key Features:

- Provides updated disaster resource and inventory data directly from the central IDRN database.
- States/UTs can pull IDRN data into their own local servers for faster and reliable access during emergencies.
- Ensures accessibility even when internet connectivity is disrupted during disasters.

At Present States using IDRN API-

✓ **Other states are also encouraged to use API Service.**

3. EFFECTIVENESS OF IDRN: RECENT CASE STUDIES

- ***Major intent of these studies is to assess usage pattern and identify challenges faced by districts/states.***

- NIDM conducted study on utilization of IDRN portal during **10 major disaster events covering 11 states.**
- Analysis covers trends from the year **2020–2024.**

State-by-State Operational Performance Matrix- IDRN Effectiveness Studies

S.No	State	Disaster Type	Year	Districts Affected	Portal Use	Data Quality	API Use	Top Gaps identified
07	Himachal Pradesh	Flood (Monsoon)	2023	5	●●○	●○○	✓	Missing local data
08	Sikkim	GLOF	2023	4	●●●	●●●	✗	Connectivity, Customization
09	Tamil Nadu	Cyclone (Michaung)	2023	7	●●●	●●●	✗	-
10	Kerala	Landslide	2024	1	●●●	●●●	✓	No HR fields
11	Odisha	Cyclone (Dana)	2024	6	●●●	●●○	✗	Outdated data

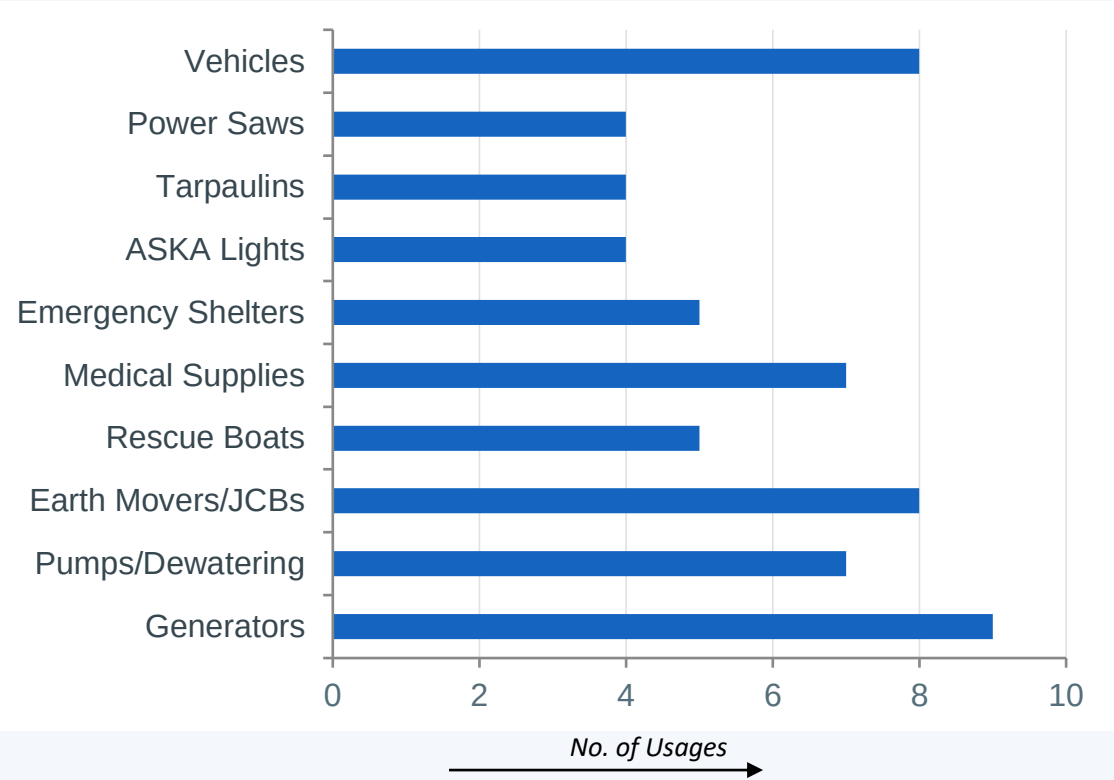
Observation:

- **GIS integration in portal is a major gap** that was highlighted by all the above-mentioned States/UTs.
- API is largely unused by states, highlighting the need to strengthen awareness, usability, and adoption at both state/district levels.

●●● = *Active & Effective* ●●○ = *Partial Use* ●○○ = *Limited Use* ✓ = *In Use* ✗ = *Not Used*

Resource Categories Most Deployed Across Disaster Types

Analysis of resources actually mobilised from IDRN data during the 10 disaster events :



Usage Patterns

Power Supply – High Operational Priority

Generators used in 9/10 states, indicating high dependency.
Power restoration is the top immediate priority.

- Critical for hospitals, communication & relief operations.

Heavy Equipment – Critical Need

- Earth movers/JCBs used in 8 states.
- Focus on debris clearance & access restoration.
- Enables road reopening & emergency movement.

Mobility & Logistics – High Operational Priority

Vehicles deployed in 8 states, highlighting logistics gaps.

- Critical for resource movement, evacuation & coordination.
- Need for pre-positioned, well-managed fleets.

Medical Preparedness – Data and Supply Gaps

- Only 7 states reported medical supplies on IDRN.
- Indicates data gaps & readiness concerns.
- Need for real-time health inventory tracking.

Source: IDRN Usage Reports, 2020–2024

Operationalizing IDRN - What Worked?

Across all 11 states, the IDRN portal demonstrated consistent value in these areas:

✔ Timely Resource Mobilization

States: All 11 States

- IDRN enabled rapid identification of available rescue equipment, vehicles and personnel — critical in the first 24-48 hrs of response.
- Active resource mobilization was documented across all study states.

✔ Regular Data Updates During Crisis

States: Bihar, Kerala, Odisha, Sikkim, Karnataka

- District Emergency Operation Centres (DEOCs) updated portal data regularly during active disasters, improving decision-making accuracy for field commanders and relief coordinators.

✔ Smooth Portal Access & Navigation

States: Odisha, Sikkim, Tamil Nadu, Karnataka

- Above mentioned states with pre-disaster training reported smooth access and accurate data retrieval.

✔ Cross-Department Coordination

States: Maharashtra, West Bengal, Gujarat

- IDRN served as a common operational picture for state and district authorities, reducing duplication of requests and enabling better allocation of scarce resources.

Critical Challenges — Barriers to Effective Portal Use

These recurring gaps undermine the portal's utility precisely when it is needed most:

Connectivity Failure

⚠ HIGH

States: Bihar, Sikkim, HP, TN, Gujarat

Poor internet connectivity during disaster events prevents real-time access. In hilly and coastal districts, **this is a structural problem, not a temporary one.** (States)

Centralised Updating Model

⚠ HIGH

States: West Bengal, Gujarat, Maharashtra

Only district nodal officers can update data. Line departments and field teams cannot directly enter resources, creating delays and gaps during fast-moving disasters. (States/Districts)

Limited HR Categorisation

⚠ MEDIUM

States: Kerala, HP, Assam, Tamil Nadu

No dedicate form for skilled human resources in the portal. **Medical professionals, rescue swimmers, structural engineers cannot be inventorized**, a major gap in response planning. (NIDM)

No GIS / Spatial Visualisation

⚠ HIGH

States: Karnataka, TN, HP, Kerala, Odisha

Resources are listed but not mapped. Relief Commissioners cannot see WHICH resources are nearest to the disaster zone — forcing manual cross-referencing. (under updation at NIDM level)

Outdated / Incomplete Data

⚠ HIGH

States: Gujarat, Odisha, Sikkim, Assam

In several districts, data was not updated before disasters struck. Resources listed may no longer exist; actual available quantities are unreliable. (States/Districts)

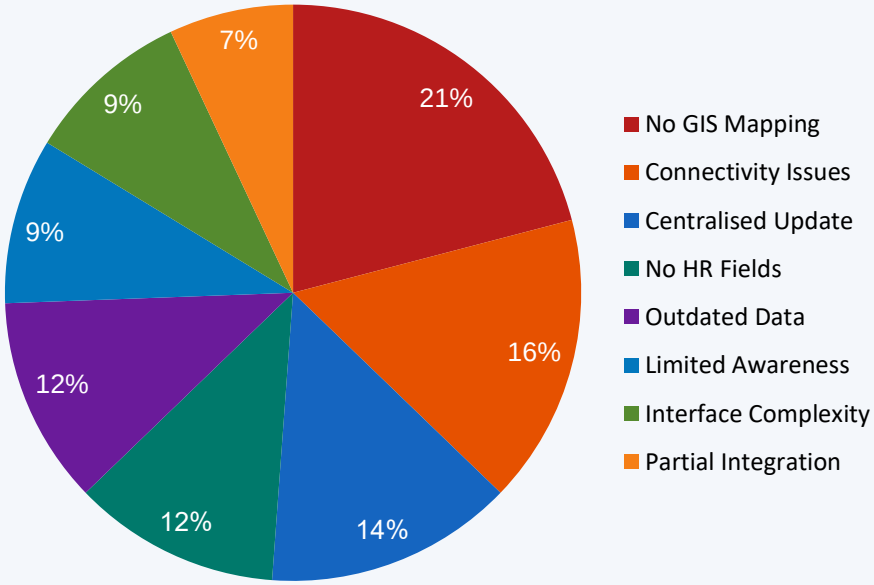
Limited Search & Filter Capability

⚠ MEDIUM

States: Odisha, Sikkim, HP

Searching for specific resource types across multiple districts is cumbersome. No proximity search, no cross-district comparison view. (under updation at NIDM level)

Challenges Across States — Where to Intervene First?



Priority Interventions (Top 5)

1	Mandate GIS integration — 9 of 11 states lack spatial visualisation, making resource-to-disaster-zone matching manual and slow.
2	Establish offline/API access — 7 states faced connectivity failure; API deployment is proven and already working in 5 states.
3	Decentralize data entry rights — line departments must be able to update directly (Have some limitation- require discussion).
4	Skilled HR module — 5 states flagged the absence of human resource fields as a critical gap in response planning.
5	Pre-disaster data validation — 5 states found data outdated during emergencies; quarterly verification is essential.

4. Way Forward & Action Plan

WAY FORWARD

- The portal has proven its value in all disaster events studied.
- The gaps are known, documented, and fixable.
- GIS, offline access, decentralized entry, and HR fields are operational necessities.

Shared Accountability

Relief Commissioners

- Champion quarterly data validation

District Collectors / Magistrates

- Own local data entry & verification
- Enforce format submission deadlines.
- Lead quarterly drill-based data reviews.

Line Departments & Agencies

- Submit accurate formats on time
- Update data after every deployment
- Designate and train field data officers

- *A portal is only as strong as the culture behind it. Preparedness must be built before the disaster not discovered during one.*

Action Plan for an Effective IDRN Portal

Immediate (0–3 months)

- Ensure all state/district logins are active and credentials shared with relevant line departments. (Have some limitation)
- Conduct mandatory pre-monsoon/pre-cyclone data validation exercises across all districts.
- Deploy IDRN API in states not yet connected.

Short-Term (3–12 months)

- Decentralise data entry: authorize line departments, to directly update local resources.
- Skilled Human Resource module addition in terms of medical, engineering, rescue and volunteer personnel.
- Integrate Multipurpose Shelter data and NGO/PSU resources into the portal.
- State specific SOP development & training.

Medium-Term (1–2 years)

- Develop GIS-enabled dashboard: real-time map view of resources within user-defined radius of disaster zone.
- All assets/resource inventory need to be geo-tagged.
- Develop customized mobile app with offline sync for field-level data entry and access.

Structural (Ongoing)

- Quarterly SDMA video conference to review updation status, already begun by NIDM (March 2026)
- Include IDRN mock drill in pre-disaster preparedness exercises for all district authorities.
- Establish inter-agency integration with TNSMART-type state systems; replicate Tamil Nadu model/state-specific customization.

Thank You

NIDM, Delhi

NIDM, Vijayawada (South Campus)

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