civic data lab

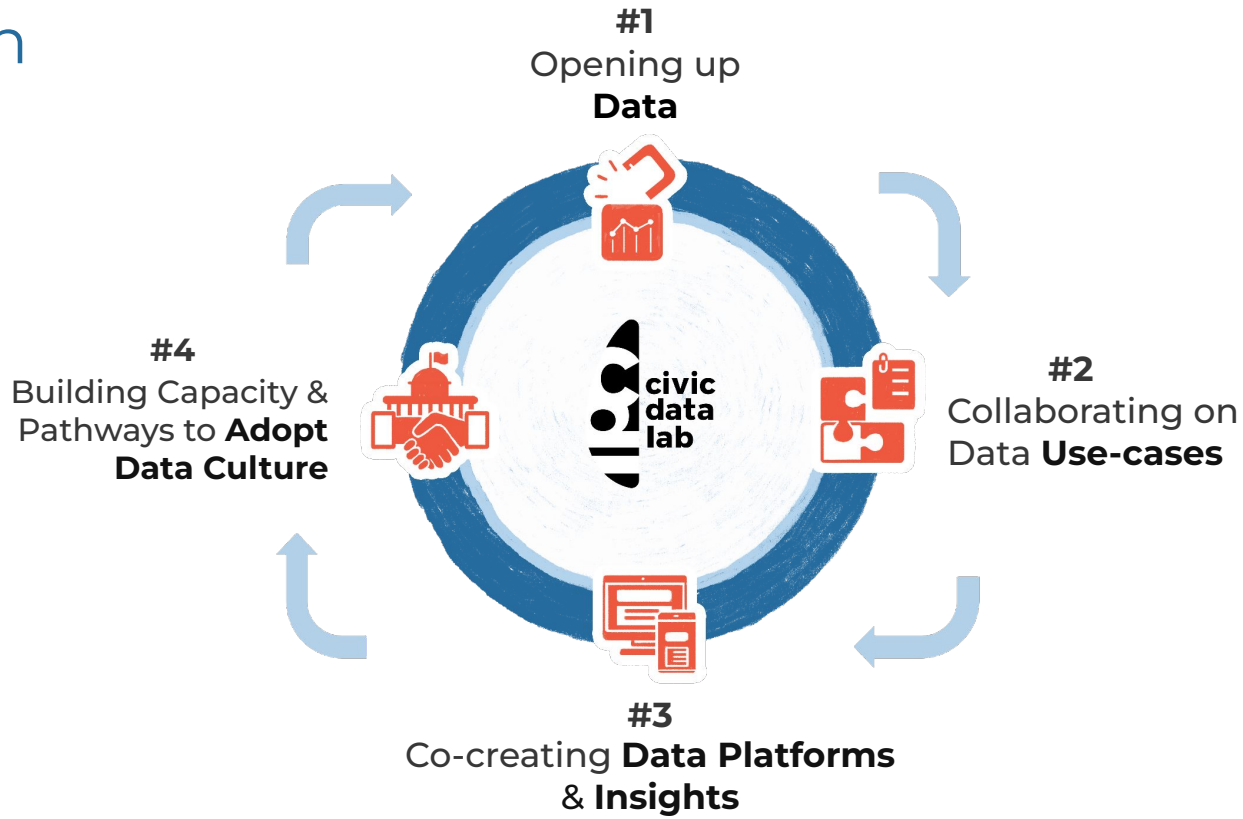
Communities of Practice on Nature based solutions for Building Urban Resillience

Guwahati, Assam

civic data lab

We work at the intersection of **data**, **technology**, **design** and **social science** to strengthen access to public information, evidence-based decision-making and citizen participation in governance. CivicDataLab (CDL) harnesses the potential of open knowledge movements to strengthen the **data-for-public-good ecosystem** and enable citizens to engage in matters of public reform. We work closely with governments, non-profits, think-tanks, media houses and universities to enhance their data and technology capacity to better data-driven decision-making at scale.

Our Process to Strengthen **Data-Driven Governance**



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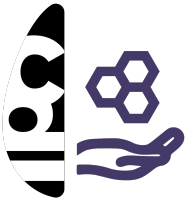
Our **Initiatives**

Public Finance

Law & Justice

Open Contracting India

Urban Development



Digital Public Goods

Climate Action

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Risks and effects of Climate Change

Global Risks Report 2024

Top 10 risks

"Please estimate the likely impact (severity) of the following risks over a 2-year and 10-year period."

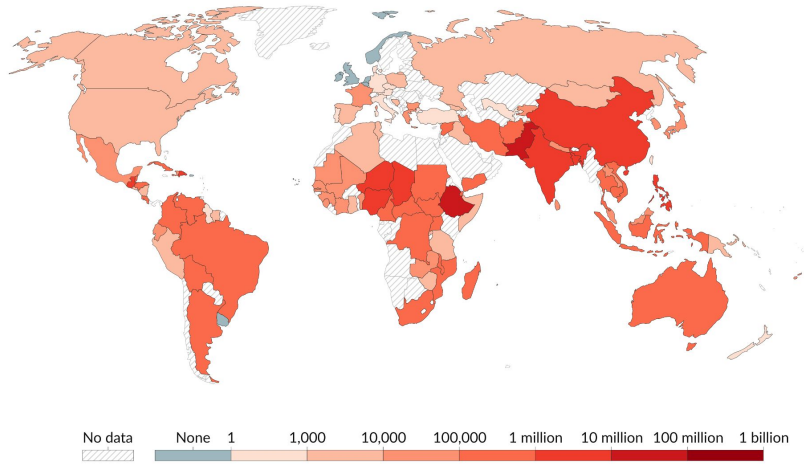
	2 years	10 years
1st	Misinformation and disinformation	Extreme weather events
2nd	Extreme weather events	Critical change to Earth systems
3rd	Societal polarization	Biodiversity loss and ecosystem collapse
4th	Cyber insecurity	Natural resource shortages
5th	Interstate armed conflict	Misinformation and disinformation
6th	Lack of economic opportunity	Adverse outcomes of AI technologies
7th	Inflation	Involuntary migration
8th	Involuntary migration	Cyber insecurity
9th	Economic downturn	Societal polarization
10th	Pollution	Pollution

Risk categories: Economic | Environmental | Geopolitical | Societal | Technological

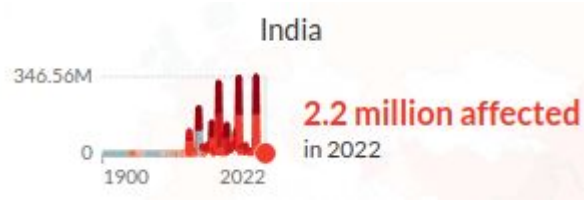
Source: World Economic Forum Global Risks Perception Survey 2023-2024.

Total number of people affected by disasters, 2022

Disasters include all geophysical, meteorological and climate events including earthquakes, volcanic activity, landslides, drought, wildfires, storms, and flooding. The total number of people affected is the sum of injured, requiring assistance and homeless.



Source: Our World in Data based on EM-DAT, CRED / UCLouvain, Brussels, Belgium – www.emdat.be (D. Guha-Sapir)



83% of Natural Hazard Events are Floods & Storm events

Asia is the world's most disaster-prone region

In 2022, over 83% of reported natural hazards were flood and storm events
Floods were the leading cause of death, people affected, and economic damage by a substantial margin.

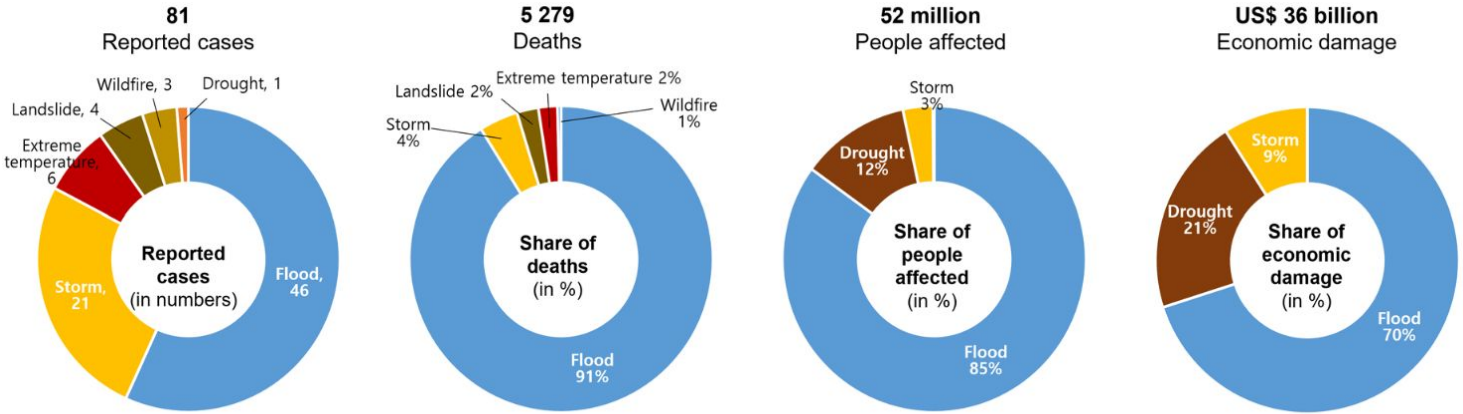


Figure 18. Overview of 2022 disasters in the Asia region.

Source: Economic and Social Commission for Asia and the Pacific (ESCAP); EM-DAT. ESCAP calculations are based on data from EM-DAT, accessed on 14 February 2023.

Note. The economic damages of some disaster occurrences are not presented in the figure due to data unavailability. In the figure, only cases reported in EM-DAT are considered.

CDL in Assam

2018

Building Data & Tech Capacity for Depts - ASPIRe collaboration

2019

Assam - **first state to commit to "Open Budgets"** - Assam Budget Explorer

2020

With UNICEF Assam, we **piloted** U-Report based **Pre-Budget Surveys**

2021

We **Analysed Public Procurement Data** Assam & **Started OCI**

2022

Public Procurement Reforms & IDEA-FRM

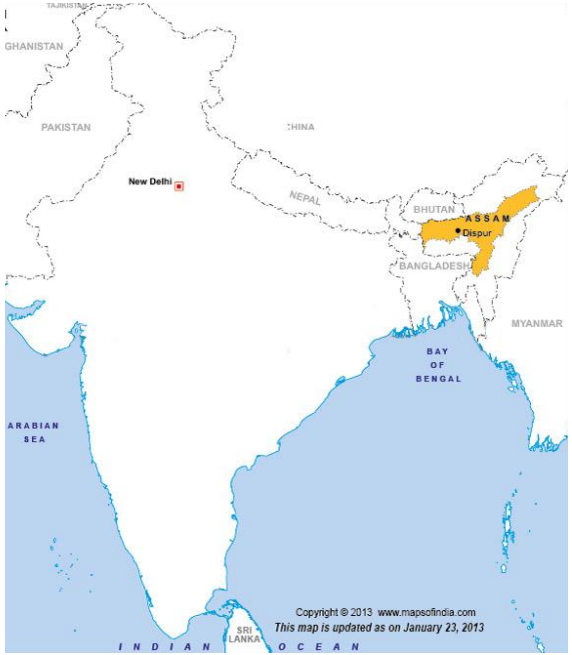
2023

Working with State for **Launch of Green Budget**. Start of IDS DRR

2024

Working towards **GPP** and **IDS DRR**

An overview of **Floods in Assam**



39% land area is flood prone.
Covers **90%** of the districts.

400,000 Hectares of Agricultural Land affected each year

3 million people affected and 100+ lives lost on average

36 million USD worth of property damage each year

Source: Water Resources Department, Assam

Data-Driven Planning for DRR
Challenges

- **Data** can help **State and District Disaster Management Authorities** to prioritise public funds (procurement, budget, SDRF allocation) in most vulnerable regions to build long term resilient strategically.

- However, **datasets** related to climate change and disaster management in India **remains in silos,** often lack the **interoperability and quality** to be able to be consumed by machine.

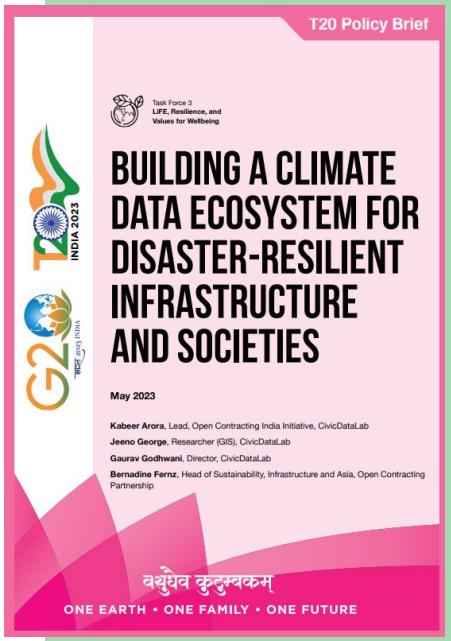
- Additionally, processing such vast amount of data to derive insights for decision making is a challenge in itself.

Intelligent Data Solution for DRR
Solution

- **Unified Data Repository** for all needed datasets for efficient flood management in near real-time (**10 data sources**).

- **Actionable Data Insights** using a ML Model to drive strategic decisions for building long term resilience against floods in most vulnerable regions.

- **Enhanced Data Capacity** of decision makers to consume timely insights and prioritise public funds for disaster risk reduction



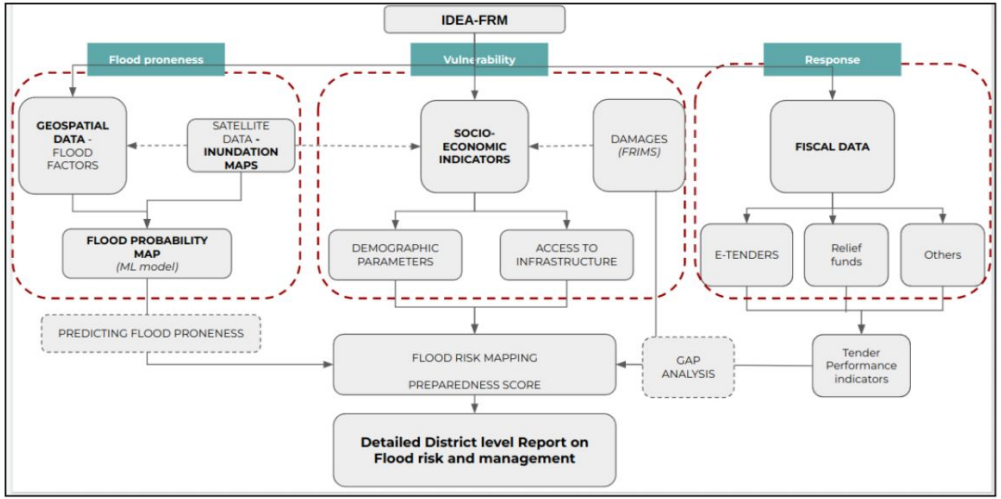
Intelligent Data Solution for DRR

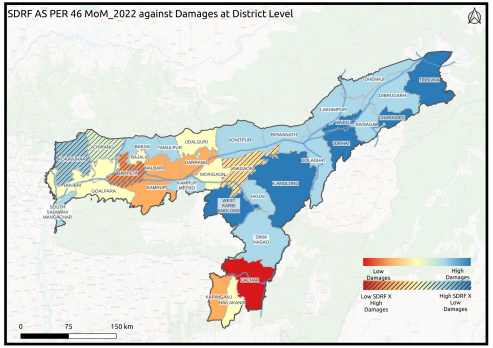
Our Journey

Project Pilot 2022-23

1

- Testing the hypothesis in Assam.
- Development of Proof of concept and on-boarding decision-makers for tests.
- Early Insights and results from the model, validated by stakeholders





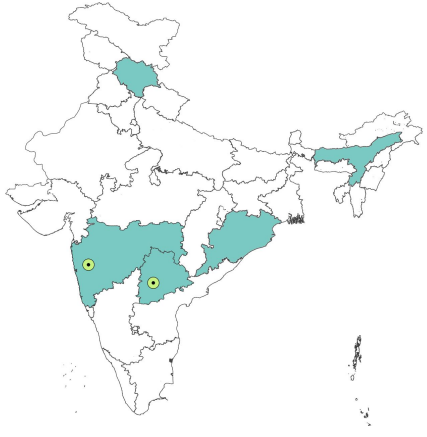
Intelligent Data Solution for DRR

Our Journey

Project Deployment 2023-25

2

- Development of deploy-able solution to be institutionalized for decision making in Assam.
- Building capacity of stakeholders across scales for deployment.
- Expanding the solution to Himachal Pradesh & Odisha for more use cases.



Project Scaling 2025 - 27

3

- Support deployment of solution in at least 10 Indian states.
- Provide knowledge support to scale the model across Asian countries with high disaster risk.

Flood data ecosystem
IDS DRR

Satellite & Weather data

IMD, BHUVAN, Sentinal-2, NASADEM

Demographic Data

Mission Antyodaya 2020 & Worldpop

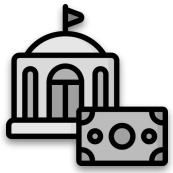
Past Damages

Flood Reporting & Information Management System (FRIMS)

Infrastructure Access

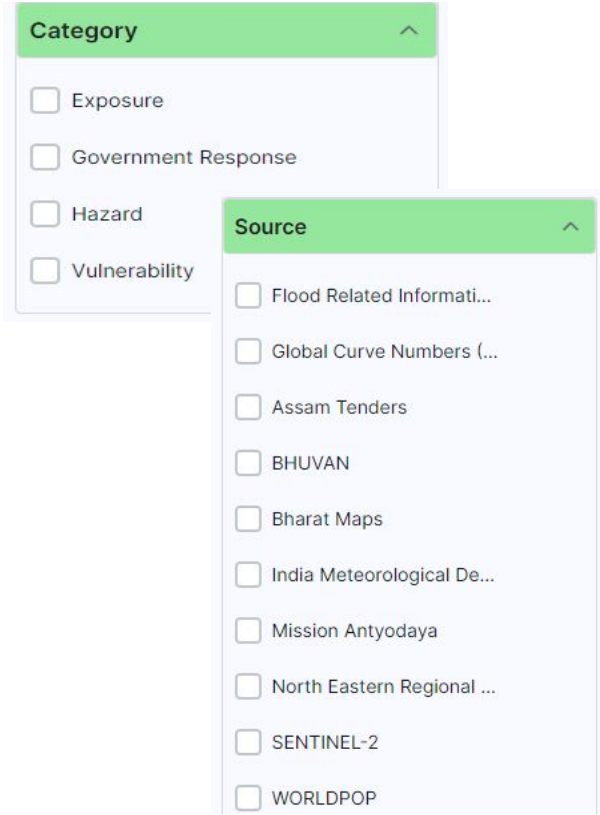
Bharat Maps, NESAC, Assam Flood Hazard Atlas*

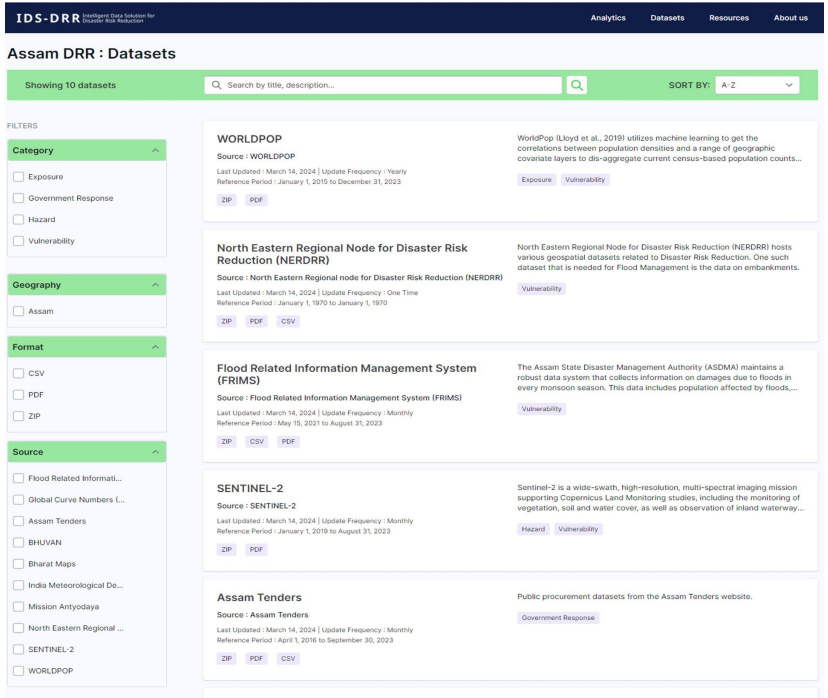
Coping Capacity (Govt. Fiscal Response)



Assam Tenders, SDRF Allocation (ASDMA)*

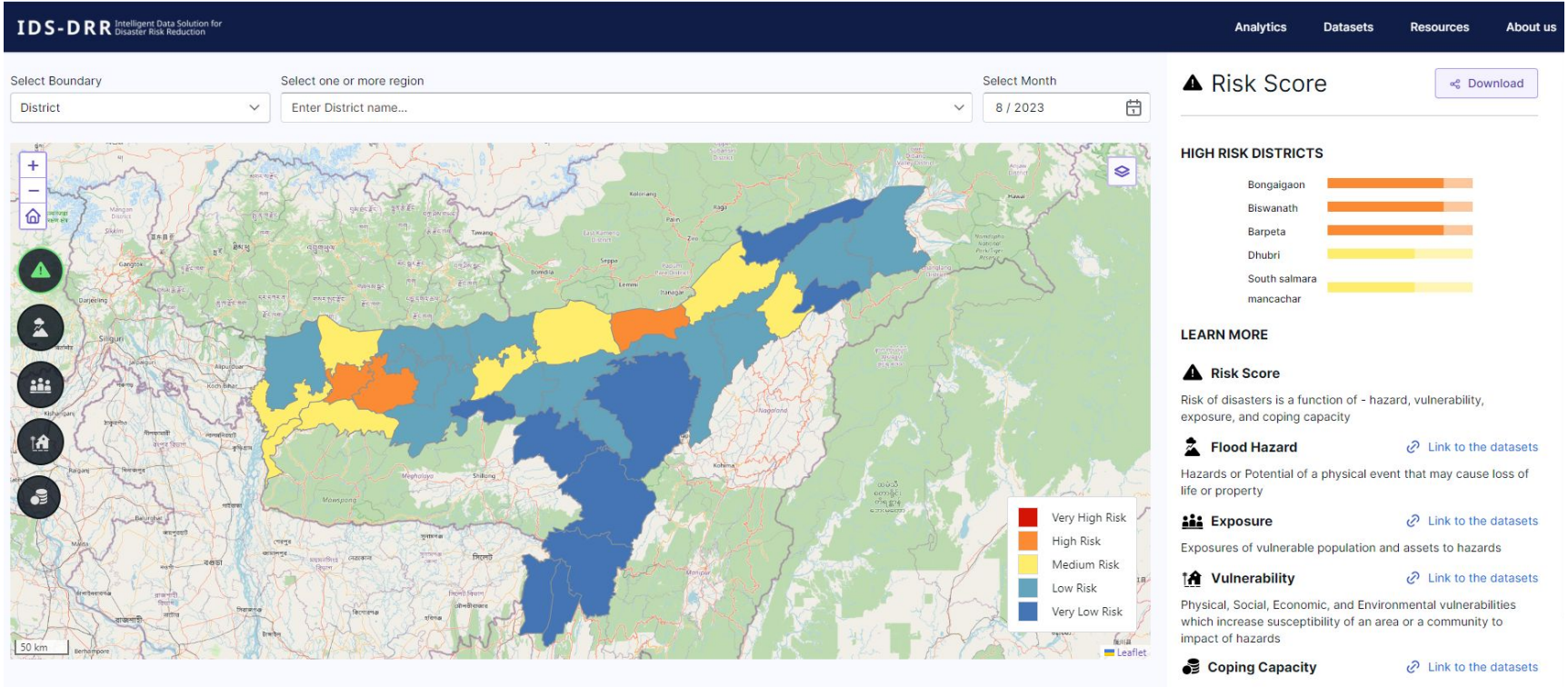
Flood data ecosystem
Single point for all data



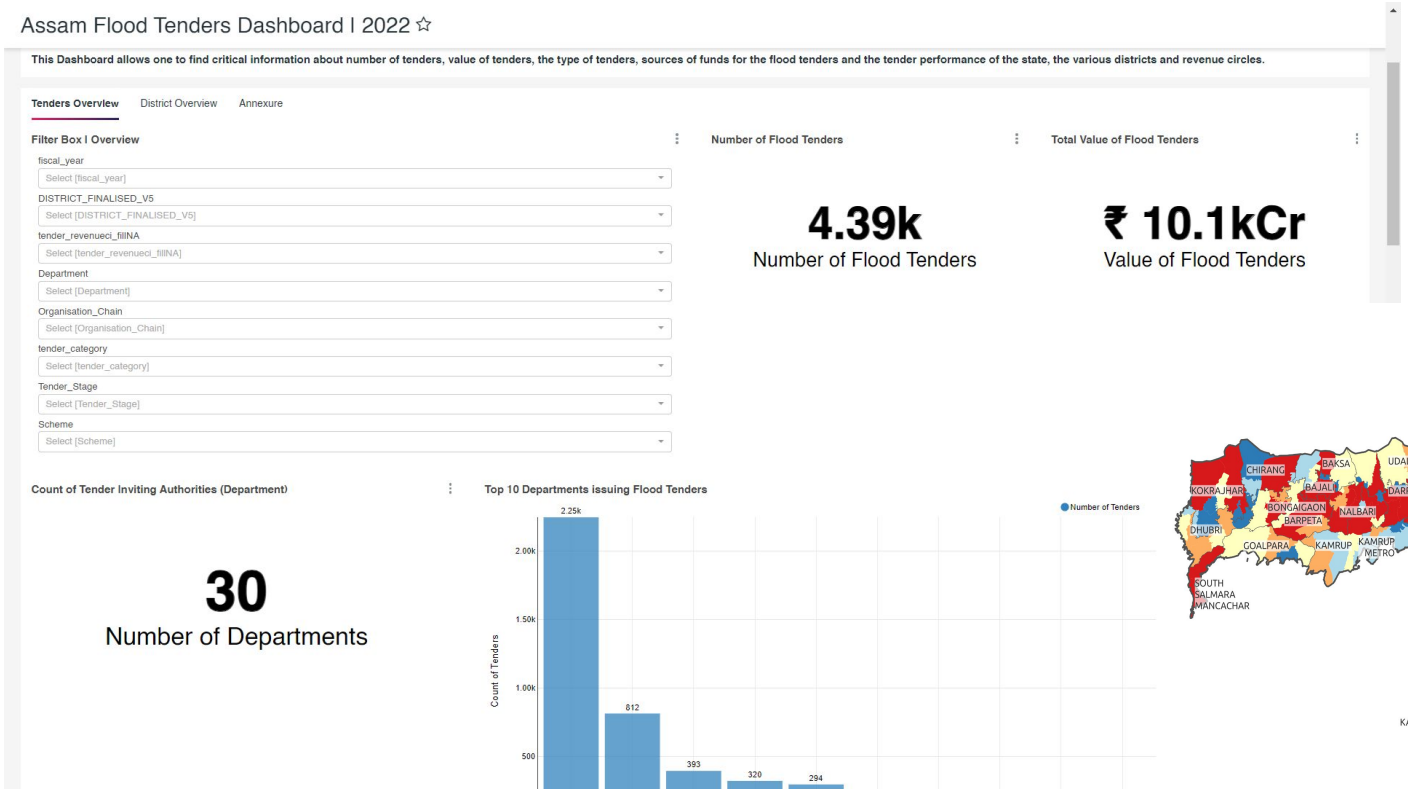


Interoperable
datasets

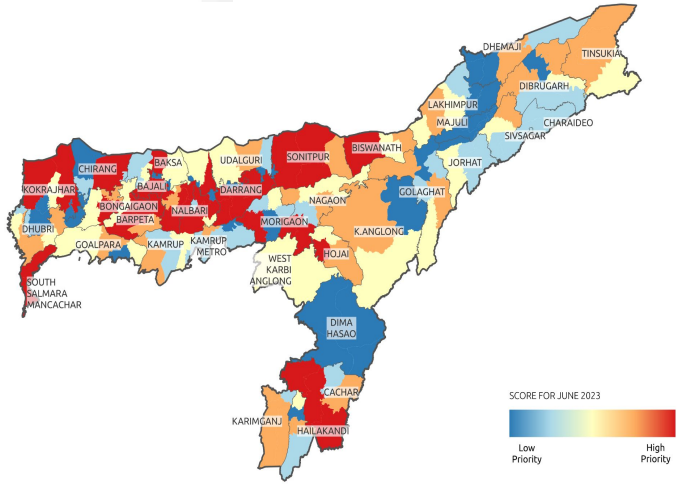
Leveraging Machine Learning
Actionable Insights



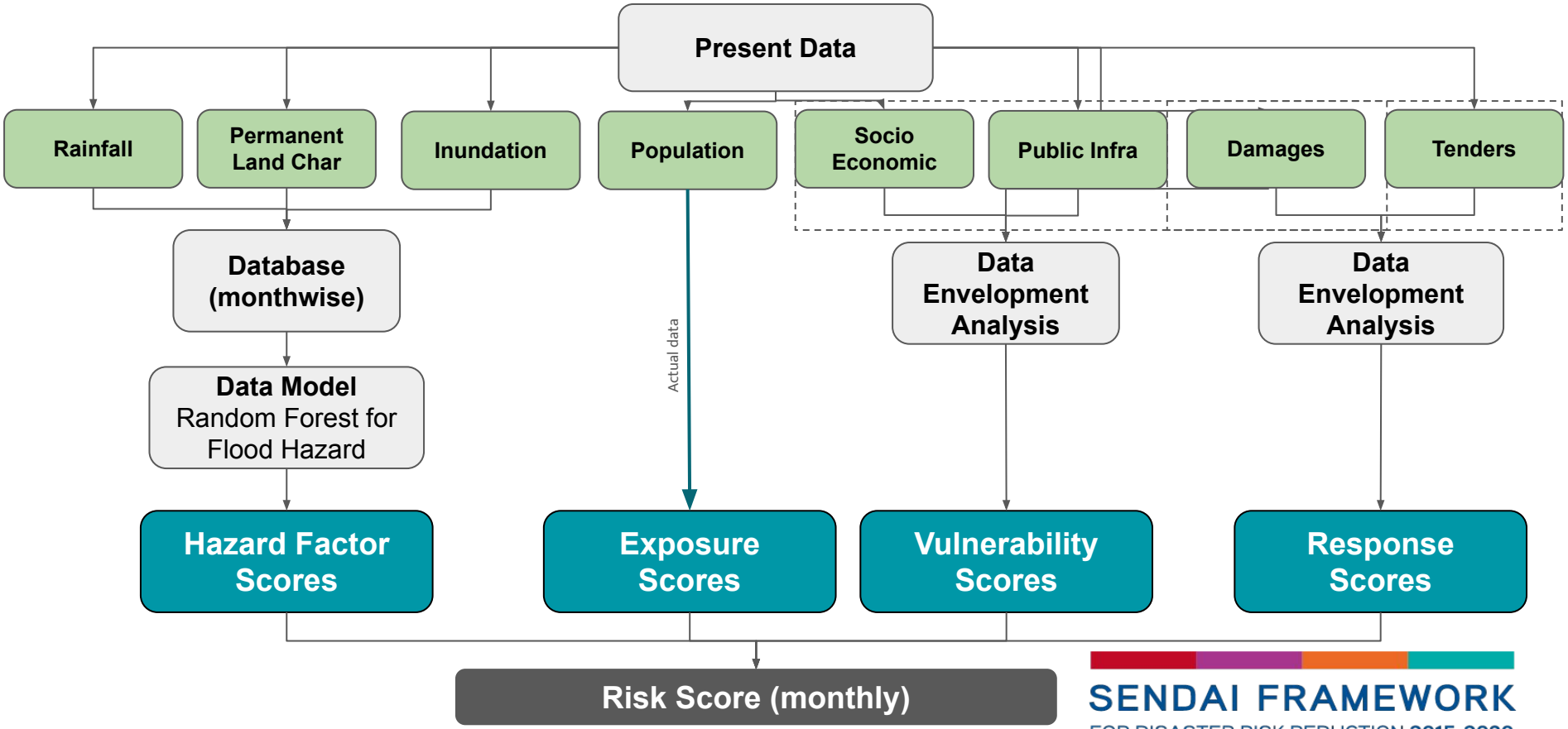
Flood tenders dashboard
IDS DRR



Data-driven
decision making



Our Approach to calculate the Scoring



SENDAI FRAMEWORK
FOR DISASTER RISK REDUCTION 2015-2030

IDS DRR
Roadmap Ahead

1. **Strengthening Capacity** of decision makers to leverage data for decision making at subnational and national level.

2. **Co-create Unified Data Access** for **city planning & administration** for different use cases

3. Replicate and deploy Intelligent Data Solution for Disaster Risk Reduction **in other vulnerable geographies in India and Asia**.

4. **Integrate and enhance citizen feedback loops** to strengthen participatory disaster risk reduction and green public finance management.

CO-CREATE AND STRENGTHEN **OPEN DATA** AND **CIVIC ENGAGEMENTS** WITH US

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