



A Case Study from SEEDS' work

Akshvi

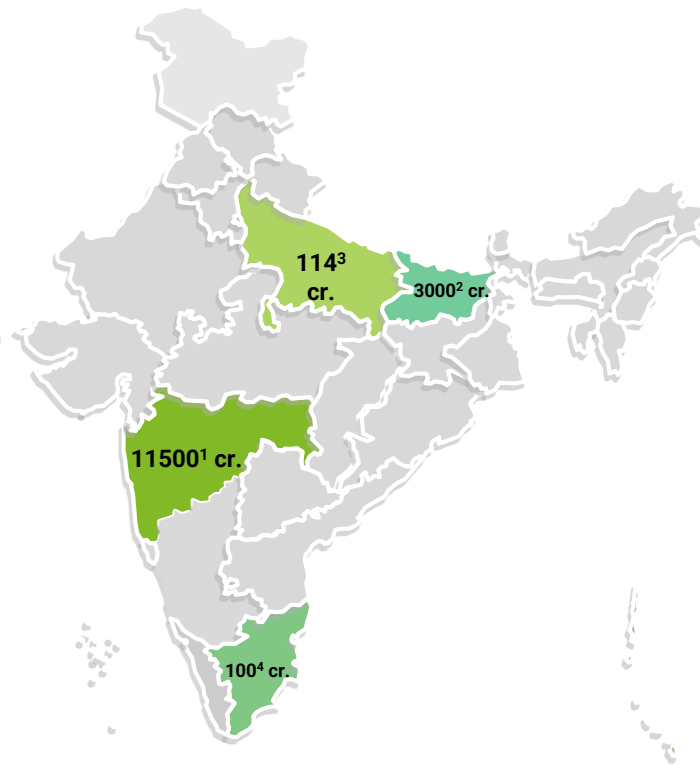
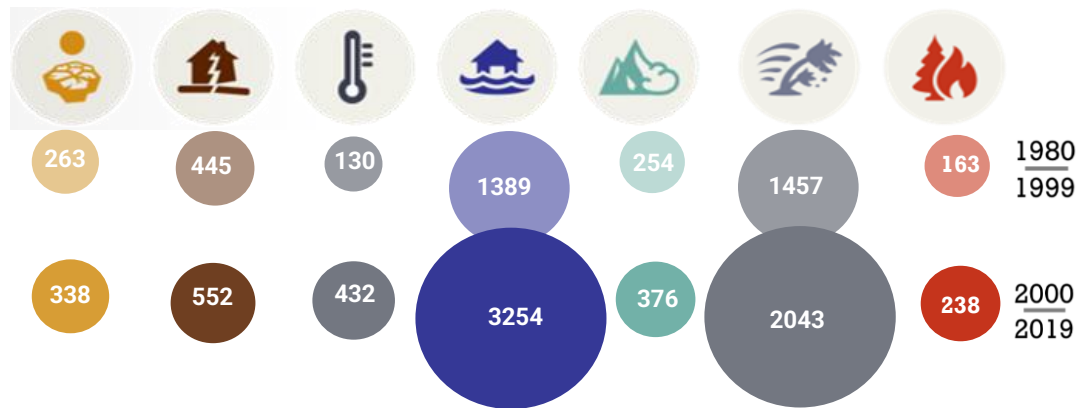
A digital Public Infrastructure for
Disaster Management



The number of disaster events have been doubling every decade



An 88*% surge in weather events across India has led to a significant increase in disaster spend ...



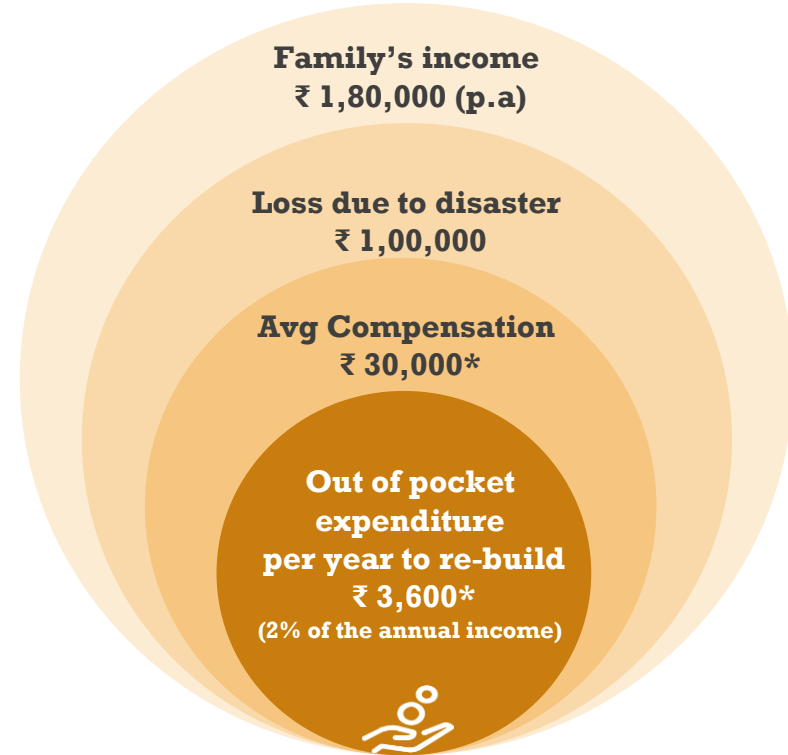
*Source: CSE India, 2022 - <https://www.cseindia.org/in-just-nine-months-in-2022-india-witnessed-some-form-of-natural-disaster-almost-every-day>

1. Rupees of relief fund announced by the State post 2021 floods
2. Rupees of relief fund announced by the State post drought in 2019
3. Investment by the State
4. Rupees provided for drought mitigation over a span of 5 years

A household affected by disaster requires 19 years* to recover from the loss and damage



Losses experienced by a small set of 2,040 households in India is almost **~2.5 times** higher than the prescribed compensation rates



*Patankar, A, 2019, "IMPACTS OF NATURAL DISASTERS ON HOUSEHOLDS AND SMALL BUSINESSES IN INDIA", ADB Economics Working Paper Series, No.603.

*Assumption: A household will use only 2% of income every year to rebuild shelter or livelihood provided a minimum income continues to flow.

WHAT PROBLEM WE WANT TO SOLVE, AND FOR WHOM

300+ million

For all vulnerable households in India, we want to:

1. Enhance pre-disaster resilience and preparedness
2. Reduce post-disaster recovery time, while ensuring adequacy

These problems exist primarily because we don't have:

Accurate, inclusive and timely availability of **data** at the household granularity

OUR APPROACH TO SOLVE THE PROBLEM



Build a Digital Public Infrastructure (DPI) that targets:

1. **AGENCY:** Enabling households to self-report their (vulnerability and loss) data, giving them the agency that is currently missing.
1. **SCOPE:** Creating an ID for the household and capturing a 360 degree view of their loss, spanning direct and indirect/invisible losses.
1. **SCALE:** Targeting all vulnerable households in India (~300 million households).

Our goal is to cover entire disaster lifecycle, not just "relief"...



Private Players

- Insurance firms
- Banks/Lenders
- Businesses
- ...



Donors / Aid Agencies

- Domestic and International agencies
- Corporate
- Individual



NDMA / SDMA / DDMA

- Disaster Management Authority at National / State / District levels



Other Govt Agencies

- National Inst of Disaster Mgmt
- India Meteorological Dept
- Line Depts (Agri, Health...)
- ...



Households / MSMEs

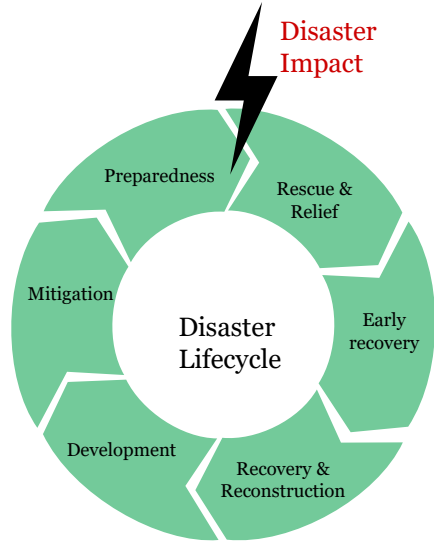
- Rural and urban households
- Micro enterprises linked to households



NGOs

- Nonprofits and Civil Society organisations

...and the targeted use-cases span multiple stakeholders in the ecosystem



	Preparedness	Rescue & Relief	Recovery & Reconstruction	
Households / MSMEs	Report Baseline Data	Report immediate Household needs	Report Household losses	View eligible benefit schemes and allotted benefits
Gram Panchayat	Assist in Baseline Data collection	Conduct Rapid Needs Assessment	Verify Reported Losses	Plan and disburse funds for recovery
NDMA/ SDMA/ DDMA	Identify Vulnerable Households	Drive/coordinate Relief Distribution	Consolidate Reported Household Losses (under PDNA)	
NGOs	Assist Vulnerable Households to Build Back Better	Drive/coordinate Relief Distribution	Identify and facilitate recovery needs	
Line Depts (of Govt)	Collect baseline data of different sectors		Identify and report Infrastructure Loss/Needs (under PDNA)	
Insurance firms	Identify vulnerable households		Verify Insurance claims	

* PDNA: Post Disaster Needs Assessment

Akshvi: One common infrastructure/platform at the national level



KEY USERS



Private
Players



Donors / Aid
Agencies



NDMA /
SDMA /
DDMA



Other Govt
Agencies



NGOs

APPLICATIONS

Dashboards

Benefits App

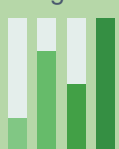
Donor
platforms

...

Insights

Action

Insights



Loss
Registers



Wallets



Loss database

Akshvi

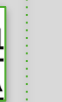
Data

Alerts

DISASTER AFFECTED ENTITIES



Households



Public
/common
infrastructure

...

Govt Apps/
systems

Other DPIs
(Agri...)

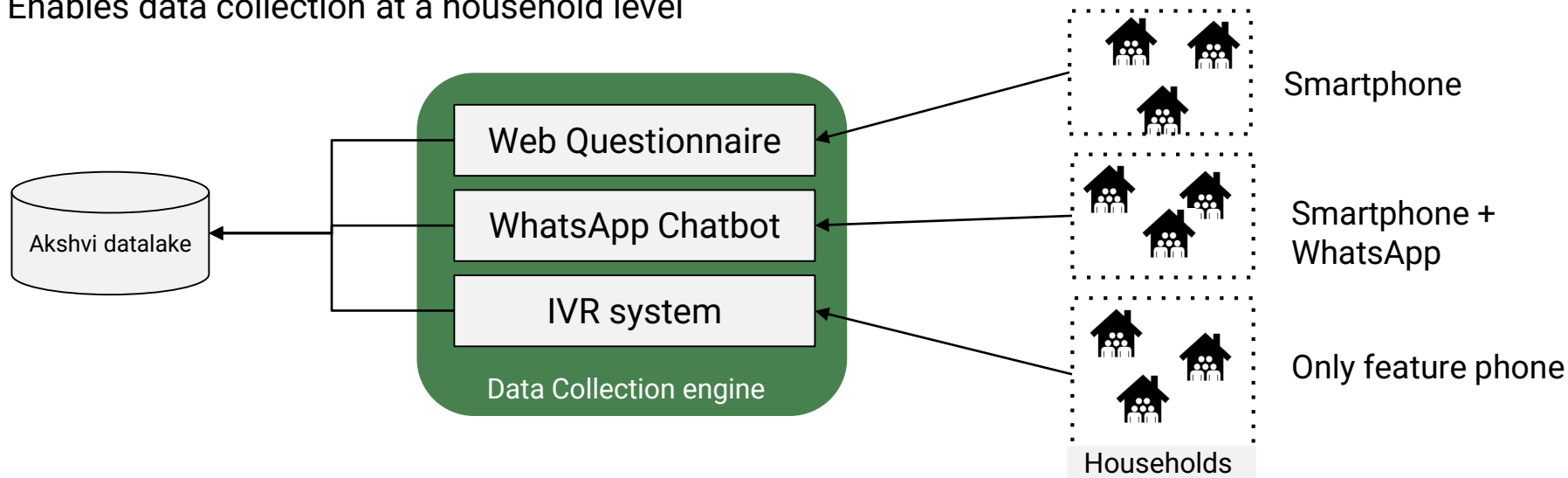
Secondary data
stores

Aadhar

EXTERNAL SYSTEMS

Key component: Household Data collection Engine

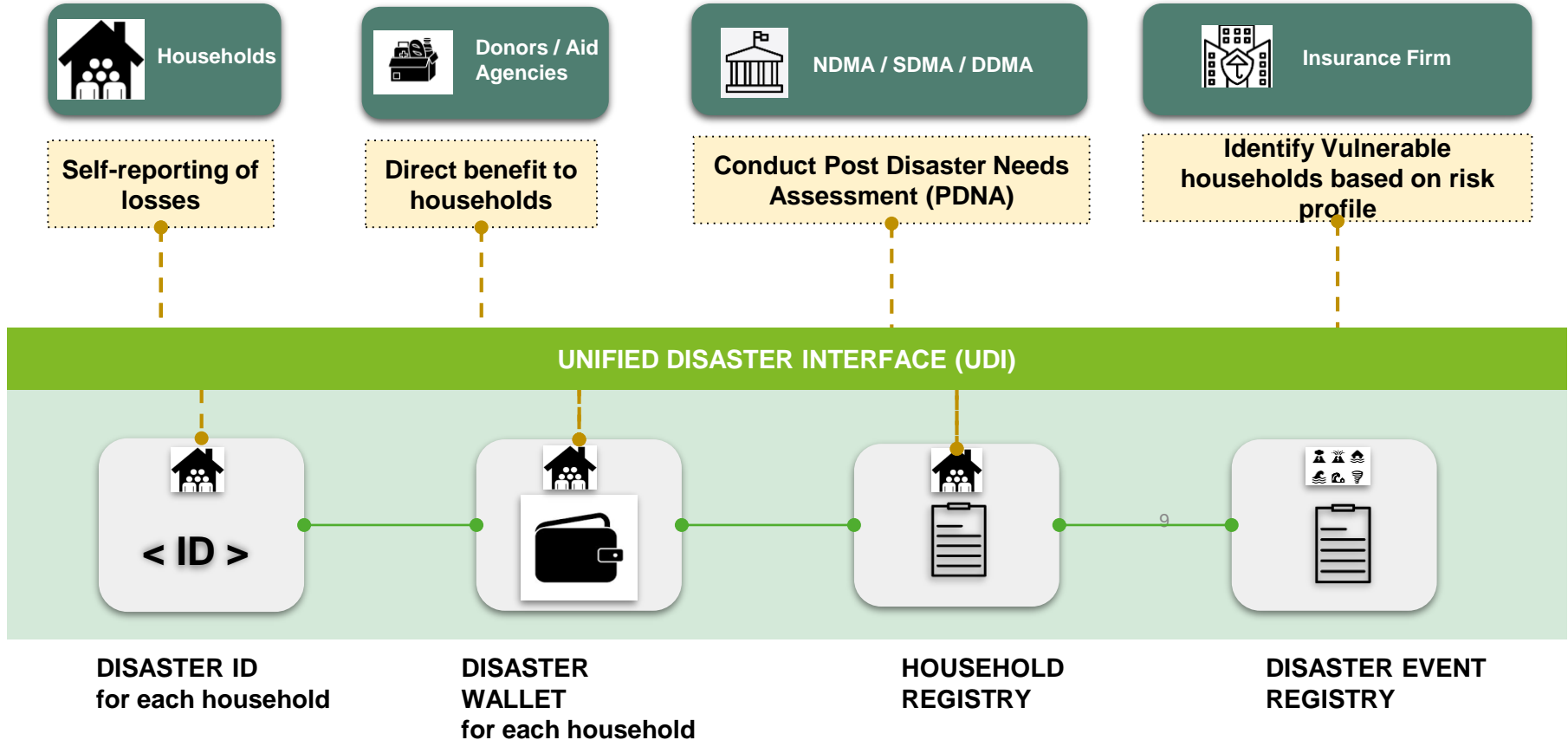
Enables data collection at a household level



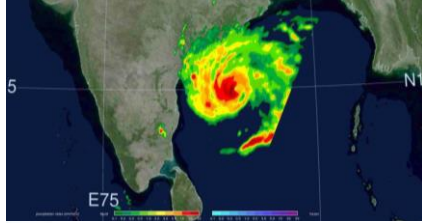
PREREQUISITES

1. Phone number list (segment wise)
2. Government mandate
3. Local/Hyperlocal awareness campaigns

We envision four building blocks and a **Unified Disaster Interface** that will enable a host of disaster related use-cases to be built on top



Cyclone Dana Nov 2024



Akshvi Intervention Dec 2024



Relief Distribution Jan 2025



Design Changes

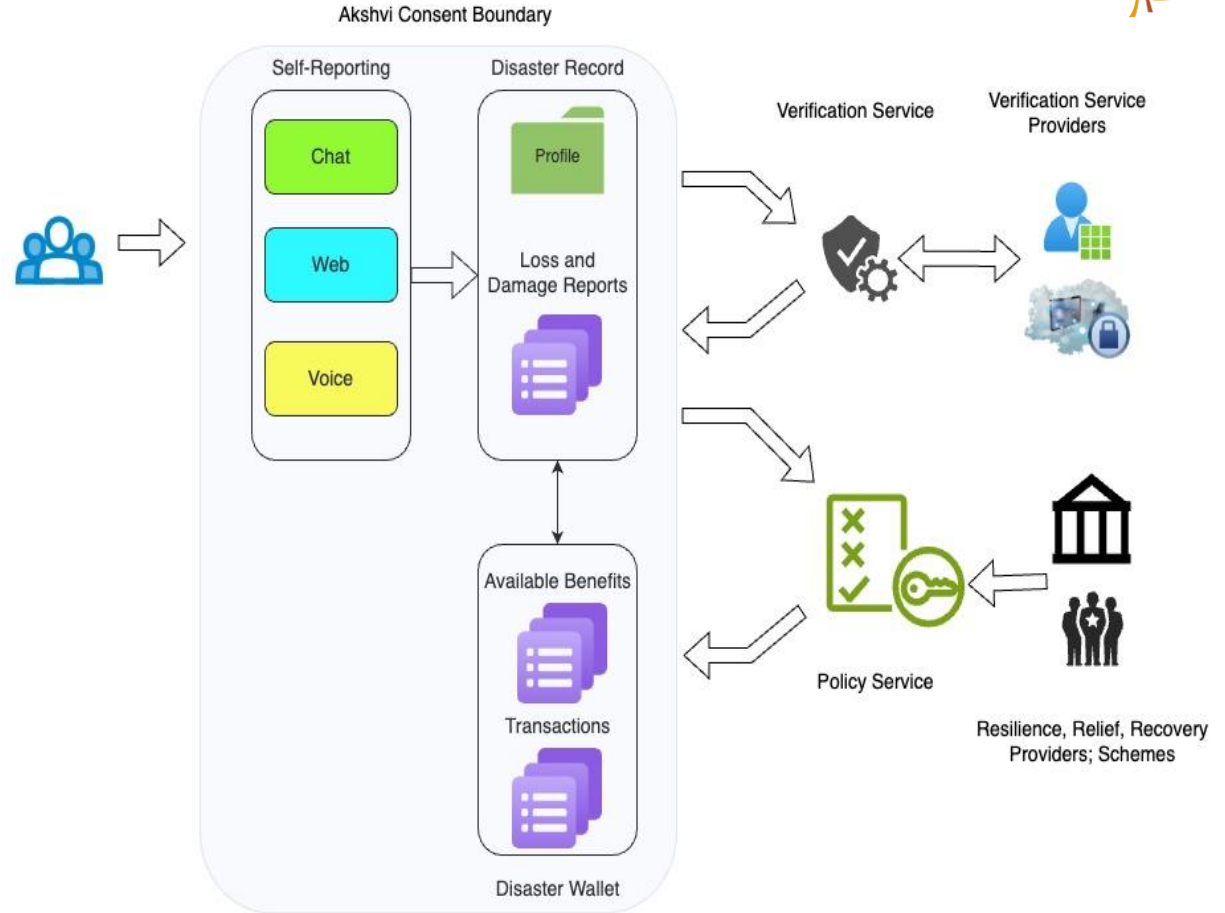
- ❖ Multimodal self-reporting approach refined: WhatsApp (primary), IVRs (supplementary), Kobo for assisted data collection.
- ❖ Enhanced data verification process with field volunteers and digital authentication.
- ❖ Pre-loaded wallets in the form of benefit distribution

Results & Learnings

- ❖ 98% of self-reported data verified as accurate.
- ❖ IVRs had higher dropout rates; WhatsApp emerged as the preferred tool (62% usage).
- ❖ Improved efficiency in relief assistance with shorter turnaround time
- ❖ Refined verification methods to address misreporting concerns
- ❖ Continue to experiment with data collection, improving UX in terms of questionnaire length and challenges faced in the field

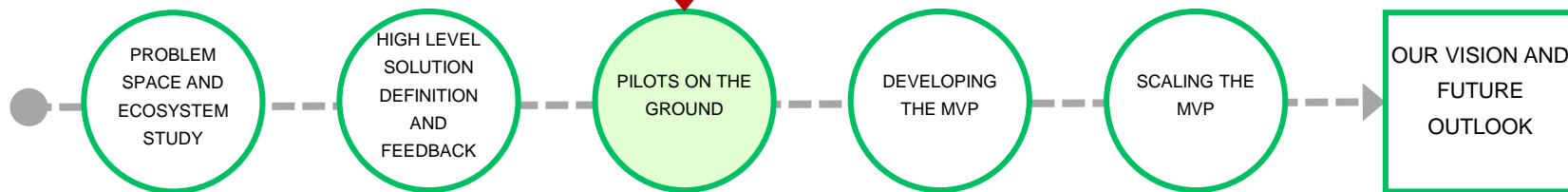
- ❖ Stakeholder consultations conducted pre-implementation.
- ❖ Training for field volunteers for raising awareness on self-reporting
- ❖ Appointment of independent data verification agents

Process & Steps Taken



WHERE WE ARE AND WHERE WE'RE GOING

WE ARE HERE!



VISION

Akshvi aims to provide a unified, scalable digital public infrastructure. This platform will integrate real-time data, self-reporting from citizens, and verification mechanisms to create a 360-degree view of disaster impact at a household level.



FUTURE OUTLOOK

Moving from siloed disaster apps to a holistic, interoperable system that enables communities to report data, governments to access verified information, and NGOs to provide targeted aid efficiently

Thank you



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