Digital Convergence
USP2030

Interoperability in action

A workshop series for developing and testing standards for integrated social protection systems

Social protection systems interoperability with early warning systems

March 24, 2026 | 12:00-14:00 GMT

Global Gateway

Co-funded by:

European Union

german cooperation
DEUTSCHE ZUSAMMENARBEIT

Coordinated by:

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

International Labour Organization

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GROUPE AFD

fiap

Anita Mittal
GIZ

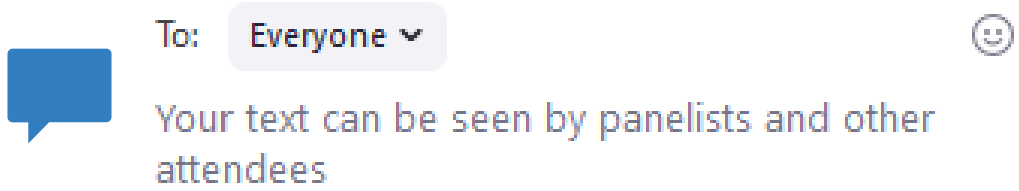
Opening Remarks

Welcome

Housekeeping Rules

- Ask your questions in the Q&A box

- Share any comments or resources in the chat



- Simultaneous interpretation is available

Select the language in the interpretation icon on control bar (English, French, Spanish, Portuguese available)

- Session will be recorded

Agenda

12:00 – 12:10	**Welcome**
12:10 – 12:40	**Interoperability of SP-Systems & Early warning Systems**
12:40 – 13:00	**Countries**
13:00 – 13:30	**Solution Providers**
13:30 – 13:50	**Open Discussion**
13:50 – 14:00	**Closing & Next Steps**

Interoperability in action

A workshop series for developing and testing standards for integrated social protection systems

Social protection systems interoperability with early warning systems

Anita Mittal
GIZ

Joe Zaarour
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Edwin Gonzales
OpenSPP

TBD
Cambodia

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Rwanda

Gabirela Nobre
PRISM

David Wilkie
Chatterbox

Nina Bekele
Google

About the Initiative

The **Digital Convergence Initiative (DCI), launched in Sept 2021,** is a joint effort by USP2030 to support the **digital transformation of social protection systems**.

Coordinating partners with funding support from EU in addition to BMZ

Co-funded by

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german cooperation
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fiap SISTEMAS PÚBLICOS PARA EL MUNDO

Expanding Community with other Stakeholders

International Organizations

DPGs

Country Representatives

Private Sector

Similar Other Initiatives

External Experts

Our Approach

Knowledge sharing

Open and collaborative **digital knowledge base** on digital social protection

Knowledge products:
- ✓ Case studies and reports
- ✓ Guides and toolkits
- ✓ Learning briefs

Events:
- ✓ Webinars
- ✓ In-person workshops and conferences

Global technical standards

Global effort to harmonize **technical standards for interoperability**

- ✓ Transparent, multi-stakeholder, consensus-building processes to **develop standards**
- ✓ Open **digital repository** of technical standards
- ✓ Engagement with solutions providers and practitioners to **promote adoption**

Country implementation support

Digital transformation and interoperability **country support**

- ✓ Direct **implementation** in twenty one selected countries
- ✓ The **Helpdesk** as a technical support facility for expanded outreach to countries to guide on Digital Transformation

Capacity development & training

Strengthening institutional and human **capacity**

- ✓ Structured **peer learning** opportunities through cross-country exchanges
- ✓ Modular, adaptable and practice-oriented **training programs,** designed for country-specific contexts

Interoperability in Action Workshops

Workshops series by DCI to demonstrate **live interoperability** of SP-Systems with other systems for effective and efficient delivery of Social Protection (SP) programs.

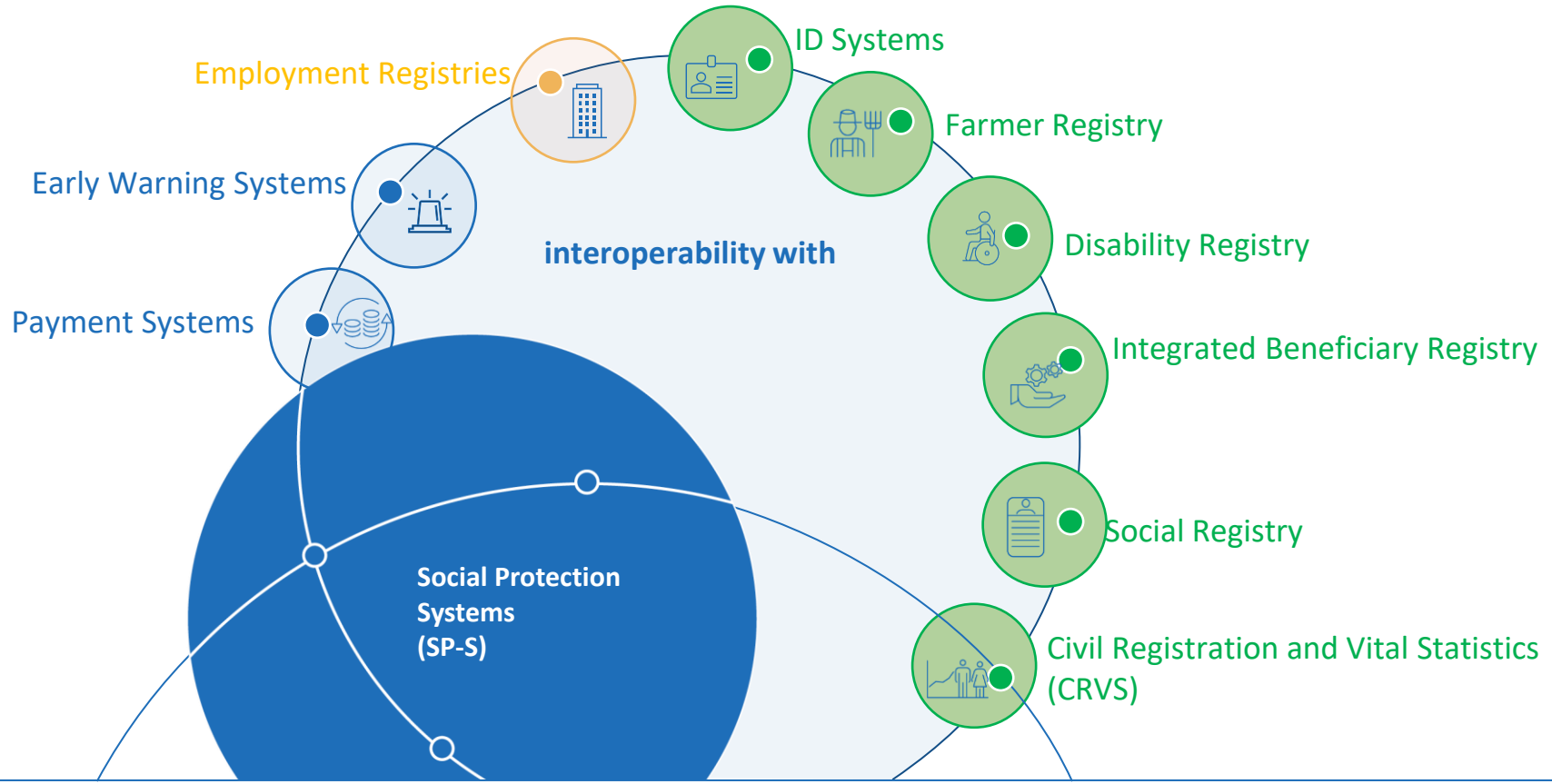
Deep dive into one interface showcasing SP system interaction with other systems
(eg payment, CRVS, ID, Farmer Registry, Disability Registry, Social Registry, Employment systems):

- Share the understanding of process workflow, data elements, and technical APIs that are required for interoperability.
- Create awareness on the benefits of interoperability through use-cases
- Demonstrate live the interoperability using digital public goods for some use cases
- Hear from the stakeholders and subject matter experts on the topic

Recordings of Past Sessions Available

[Past Events – Interoperability in Action]

Interoperability Standards Interfaces



Joe Zaarour
WFP

Context Setting

Moderation

Discussions designed to stimulate a free exchange of ideas among those interested in the topic and to assure those supporting the work that it rigorously examines its strategies,

Joe Zaarour | Digital social protection advisor - WFP Program division, School Meals, Social Protection and Nutrition

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Disclaimer

- We do not endorse any products or solutions; they are introduced for discussion purposes only.
- Data minimization, protection, privacy, security, and consent remain essential and context-specific. “Open-source” is relative and should be interpreted carefully.
- Today’s discussion aims to stimulate a free exchange of ideas and to ensure that strategies and results are rigorously examined.
- The content does not necessarily reflect WFP’s policies or views.

Recap from last webinar

- Effective EWS requires translating diverse hazard inputs (satellite, hydromet, AI/ML models) into forecast-based, actionable risk levels.
- Decision thresholds, scenario models, and multi-source validation enable timely alerts and activation of predefined early-action measures.
- Interoperability across technical, operational, institutional, and purpose-driven layers is essential for linking EWS with social protection systems.
- Challenges remain: siloed systems, uneven data quality, insufficient local grounding, legacy infrastructure, lack of standardisation, slow activation.
- The gap: inaccurate or untimely forecasts, high deployment costs, poor integration, limited adaptation to local contexts — all hinder timely, accountable early action.

Setting the scene

Why: Anticipatory action + risk-informed social protection + proactive decisions.

What: Floods, droughts, storms, compounding risks.

How: Public-good shared infrastructure that reduces duplication and spreads operational costs.

When: Predictive modelling, deterministic modelling, real-time signals.

What we'll explore

- From research to climate resilience: Google partnering with governments and the humanitarian sector to enhance climate forecasting accuracy.
- Community-level risk communication (openEWS):Responsible dissemination of risk data using SMS, Voice (IVR), and MNO integrations.

Edwin Gonzales

OpenSPP

Use Cases: Demonstration

A demo of interoperability use cases between early warning systems and SP systems

Use Cases for Demonstration

No.	Use Case	Description / Notes
1	**EWS request aggregated numbers such as total households**	EWS needs to get total poor households in a possible affected area, to assess potential support needs in case of a flood. **Key flow:** EWS → Social Protection System (Search) .
2	**EWS notify an SP system of possible flood in order to send extra cash to affected families**	A threshold is reached, the early warning system push an alert to the SP system with affected area location in order to release extra payment. **Key flow:** EWS -> SP system (notify).

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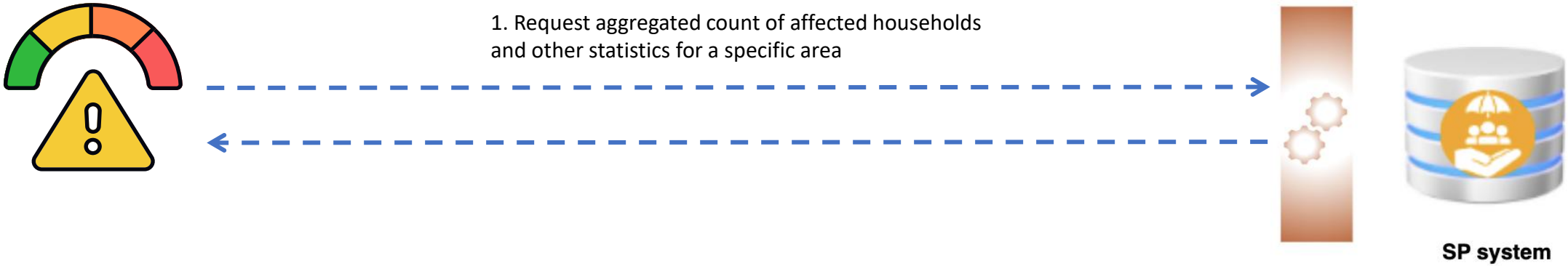
EWS request aggregated counts – PRS.EWS.01

1



1 Demonstration 1

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EWS notify SP system of possible flood – PRS.EWS.02

2

1. notify alert possible flood with affected area

2. identify affected beneficiaries and release payments

SP system

4. Release payment before flood

2 Demonstration 2

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SP System – Aggregated Impact

URL	{host}/aggregated-impact	Method	POST
Headers	Authorization: Bearer (JWT Access Token)	Content-Type	application/json

Request

```
{
  .....
  "request": [

     "affected_area":[{
        "type" : "polygon",
        "coordinates": [
           [67.02,34,.05],
           [67.02,34,.05],]
     }],
     "aggregation_dimension": [
         "gender",
          ......
     ]
       ....
```

Response

```
{
   ....
            "message": {
              "ack_status": "ACK",
              "records": {
                    "total_individiduals":1600,
                     "total_households":500,
                     "by_gender":{
                           "male":700,
                           "female":900
                     }
                    ....
            }
    .......
```

Early Warning System – Notify

URL	{host}/notify	Method	POST
Headers	Authorization: Bearer (JWT Access Token)	Content-Type	application/json

Request

```
{
....
 "alert" : {
      "hazard_type" : "Flood"
      "severity_level": "high",
      "affected_area": {
          ......
              }
          ]
      }
}
```

Response

```
{
    .....
        {
          .....
        {
            "message": {
                "ack_status" : "ACK",
                "timestamp":"2026-03-24T10:20:02Z"

.....
```

Gabriela Nobre

WFP

WFP: PRISM

PRISM, dashboard for climate risk and impact analysis. A deep dive into PRISM, how it works and how integration with other data enhance anticipatory action

WFP's PRISM: Monitoring weather forecasts for Anticipatory Action

An example of data integration for climate risk monitoring

Gabriela Nobre | GIS & Remote Sensing Unit - WFP Food Security & Nutrition Analysis Division

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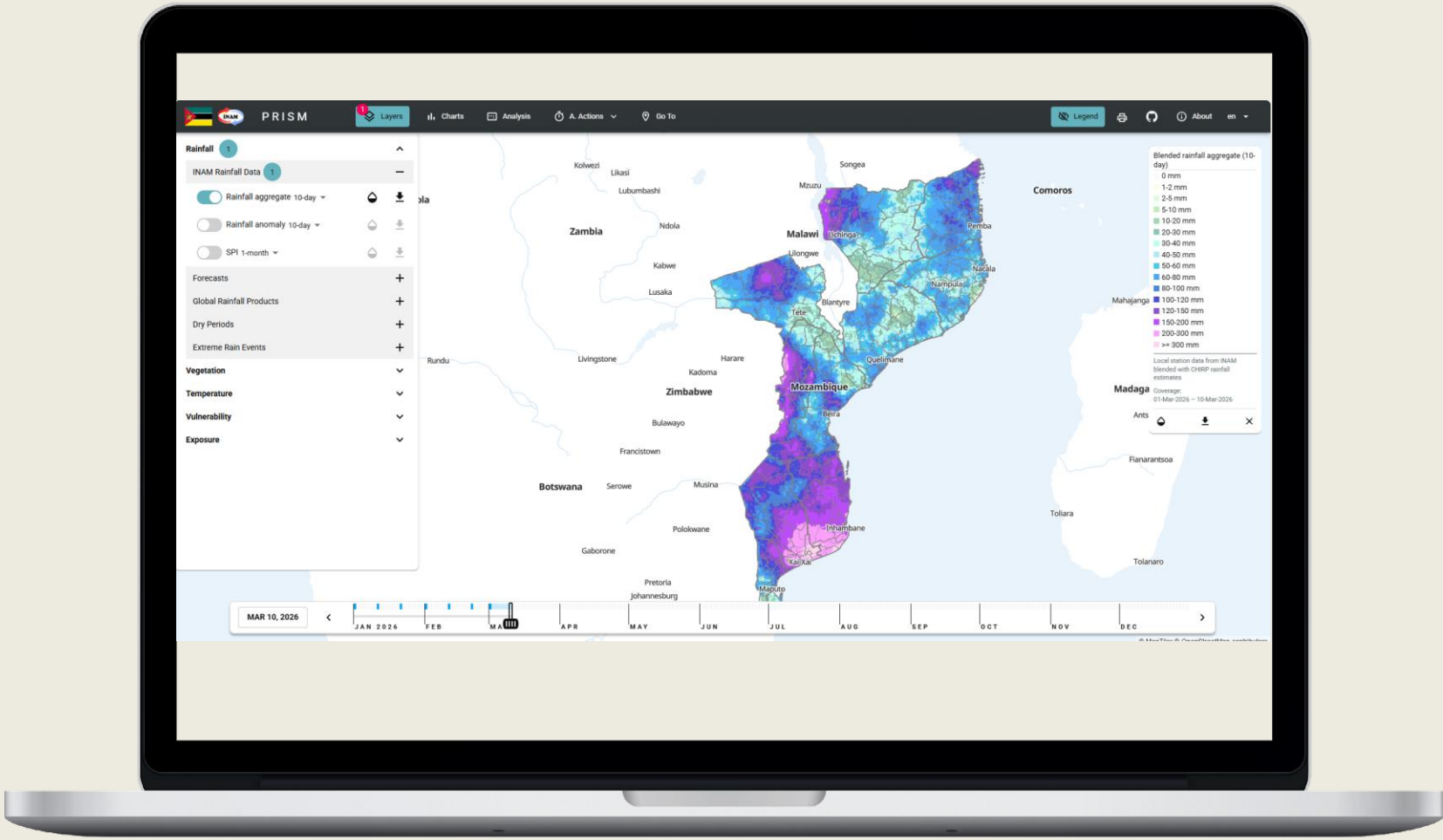
PRISM: Dashboard for climate risk and impact analysis



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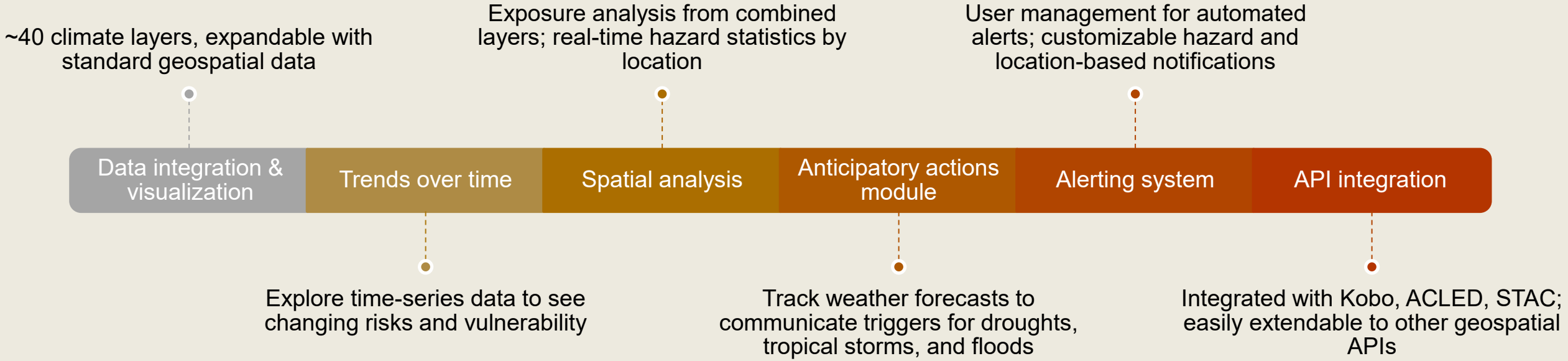
PRISM Key Features



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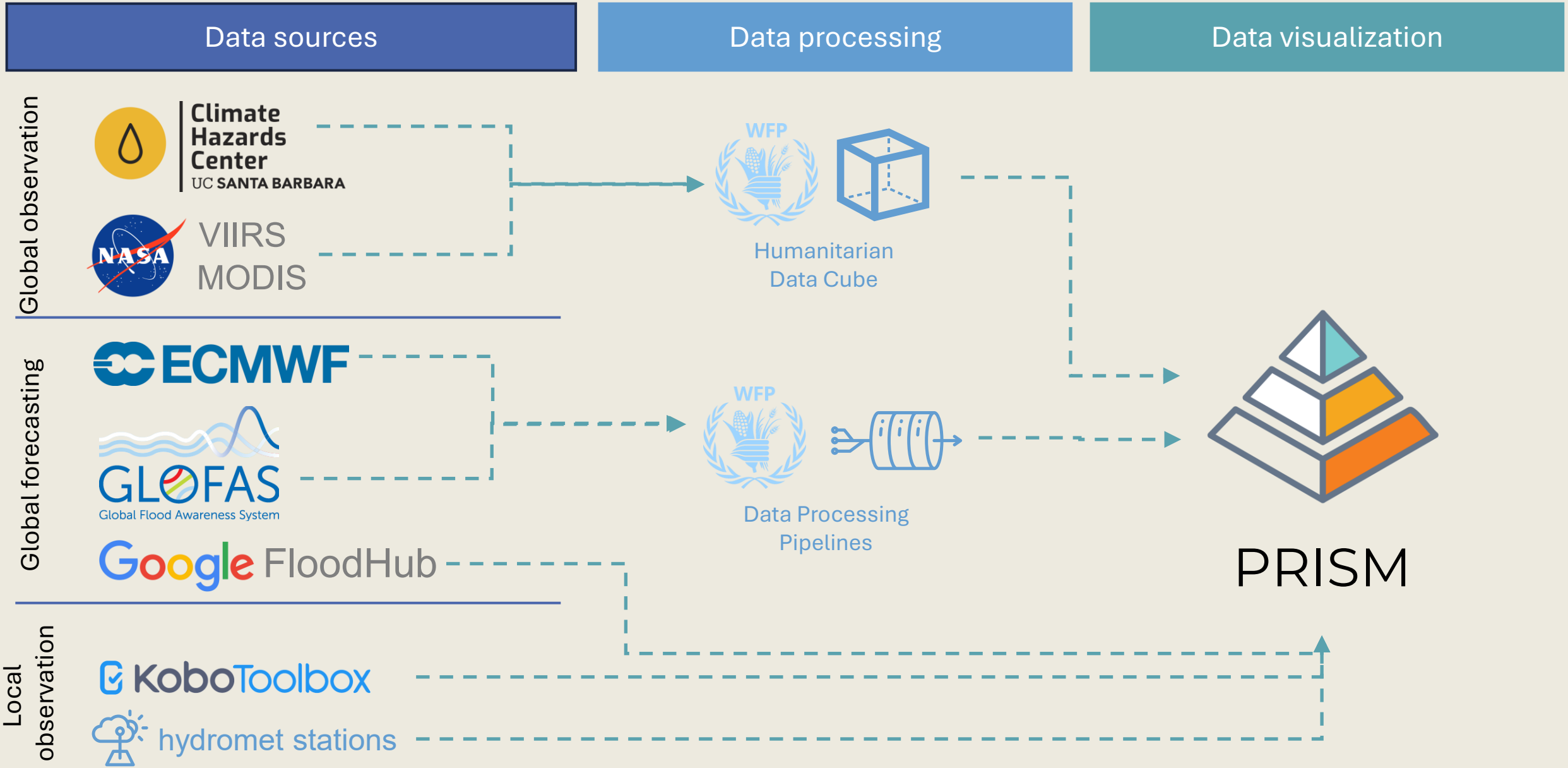
PRISM enables integration, visualization, and analysis of data from multiple sources



Workflow: flood forecasting for Anticipatory Action

STEP 1: Gather the data

Observations: Water level/river discharge station time series

Forecasts: Ensemble gridded river discharge forecasts

STEP 2: Evaluate forecasts and monitoring indicators

Review historical floods and river discharge levels

Determine statistically reliable thresholds for AA triggers

Assess the skill of the forecast over past events

Set trigger value based on forecast skill and consensus with stakeholders

STEP 3: Configure and setup data pipelines and tools

Configure monitoring pipeline

Setup data visualization platform

Configure alert system

Setup monitoring dashboard (PRISM)

STEP 4: Monitor forecast results for AA activation

Monitor trigger status via dashboard

Disseminate alerts

Communicate findings to stakeholders

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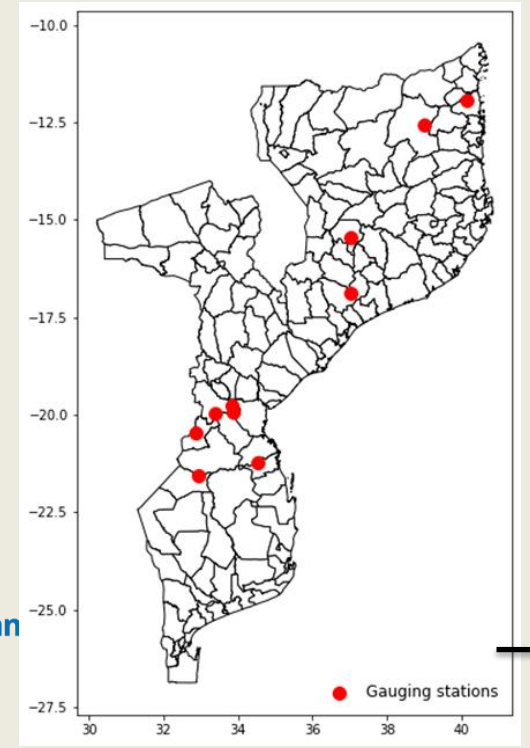
Step 1: Gathering data - an example from Mozambique

Data source	Availability	Variable	Provider
River Gauges	10 gauging stations across Mozambique	Water levels/River discharge*	DNGRH
GloFAS Reanalysis and hindcasts	daily since 1979 and twice weekly from 2003 for hindcast data	River discharge	ECMWF



GLOFAS
Global Flood Awareness System

Date	River Discharge (obs)	River Discharge member 0 (GloFAS)	River Discharge member 10 (GloFAS)
19-Dec-22	4.39	6	5
20-Dec-22	5.1	5.8	5.4
21-Dec-22	5.2	5.9	6
22-Dec-22	4.9	5.5	5.9
23-Dec-22	4.5	5	5.5

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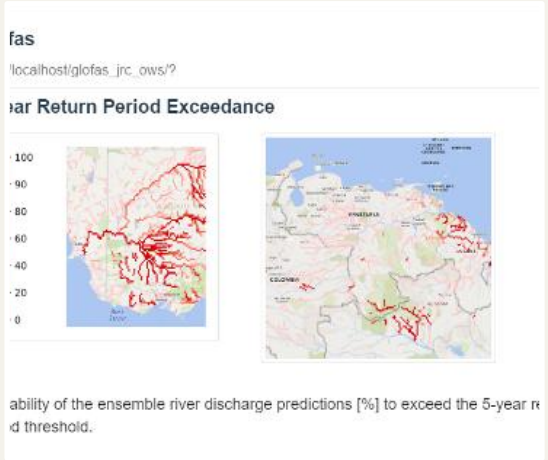
Step 2: Evaluate forecasts and setting thresholds

Define the occurrence of floods in both data sources. Thresholds can be determined in different ways, such as:

Local knowledge of the hydrological river network and monitored by national water authority



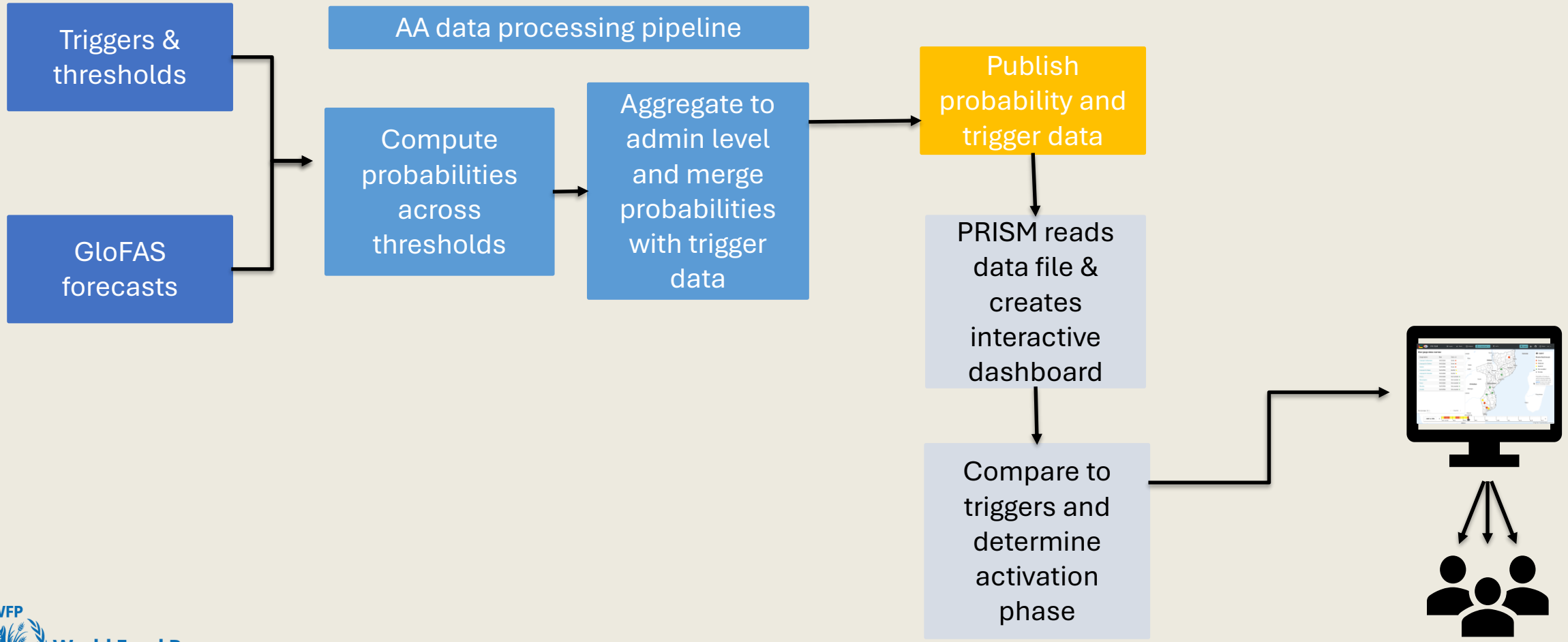
Based on return period

	Mozambique (Zambeze, Incomati, Umbeluzi, Limpopo, Pungue and Buzi Rivers)	people affected
1997	Central and northern Mozambique (Sofala, Tete, Zambezia, Manica and Nampula Provinces)	87 deaths and 300 000 to 400 000 people affected
1998/1999	Central and southern Mozambique (Sofala, Ingambane, Gaza, Nampula, Zambezia Provinces)	15 deaths and 400 000 people affected
2000	Central and southern Mozambique	800 deaths, 650 000 people displaced, 4.5 million people affected
2001	Central Mozambique (Sofala, Manica and	200 deaths, 220 000 people displaced and 550 000

Past impactful events

Performance of forecast is measured for every station, at every lead time, across every threshold to ensure operational viability.

Step 3: Configure operational monitoring



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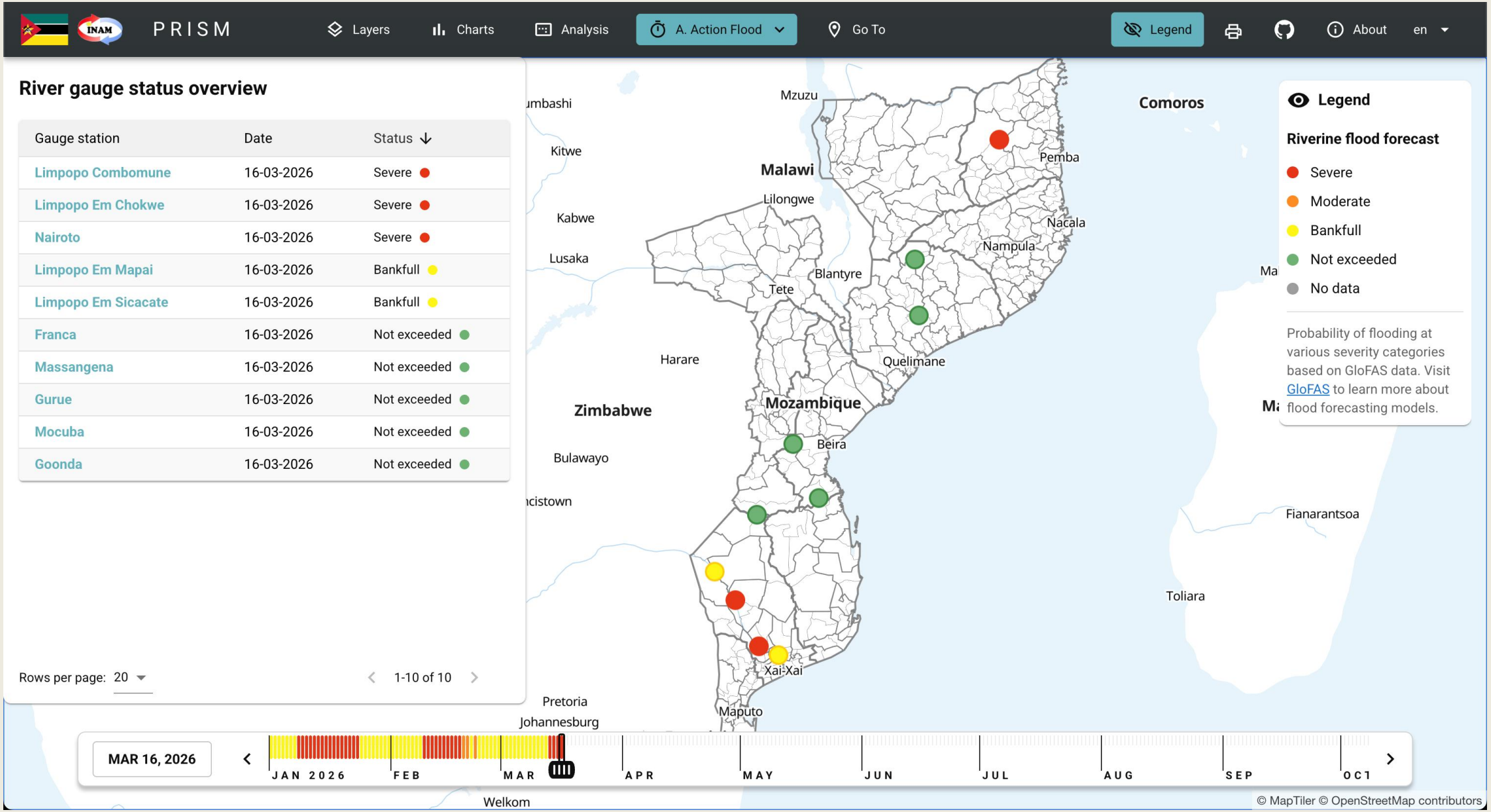
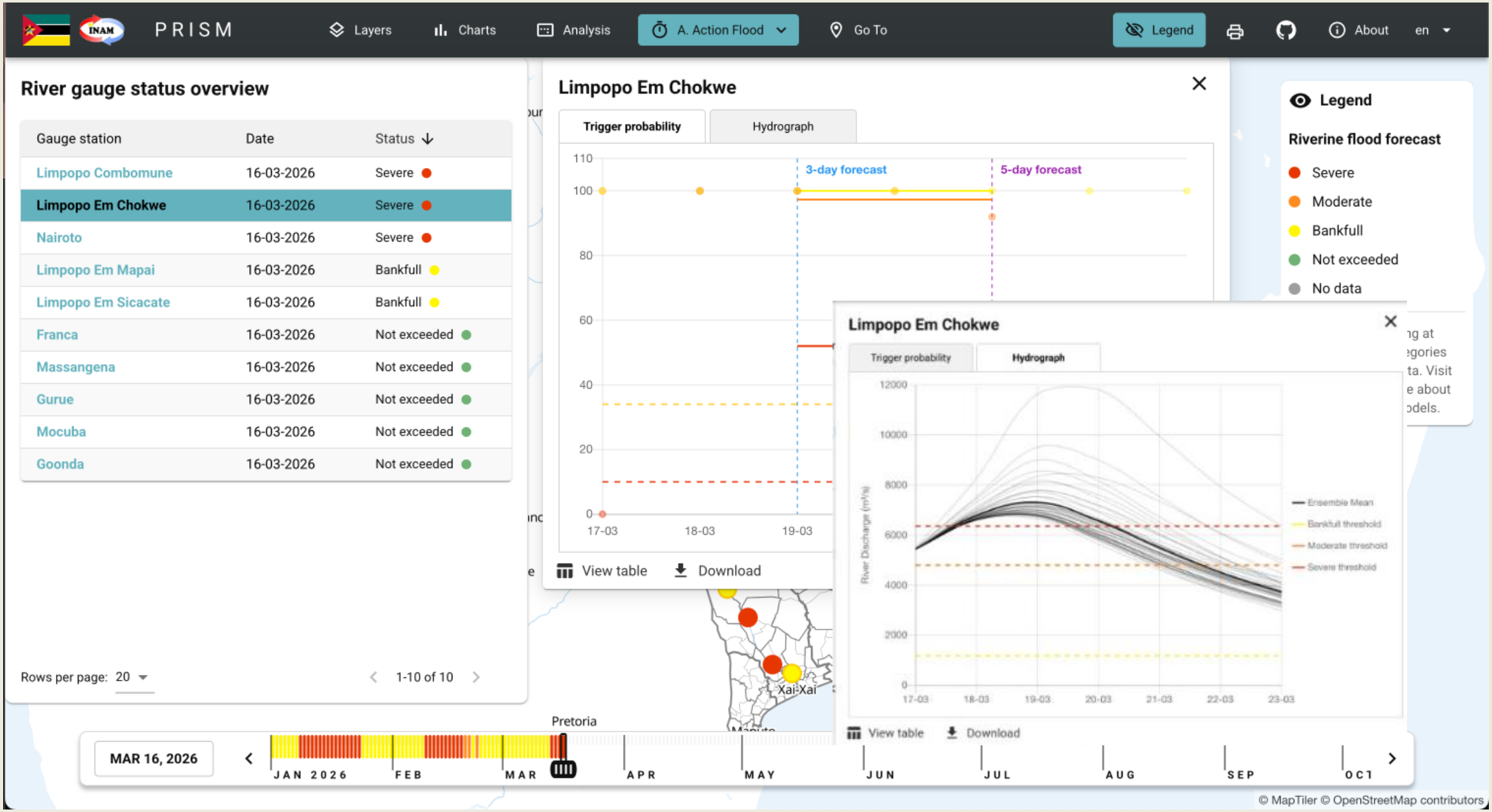
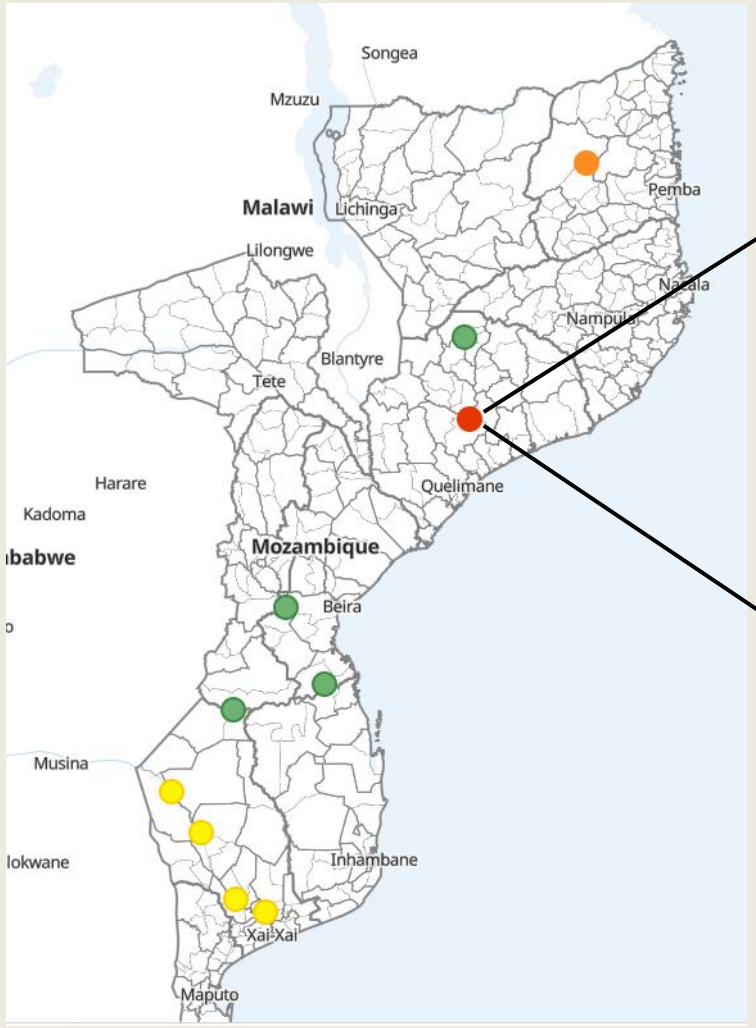
Step 4: Monitor forecast results for AA activation through PRISM

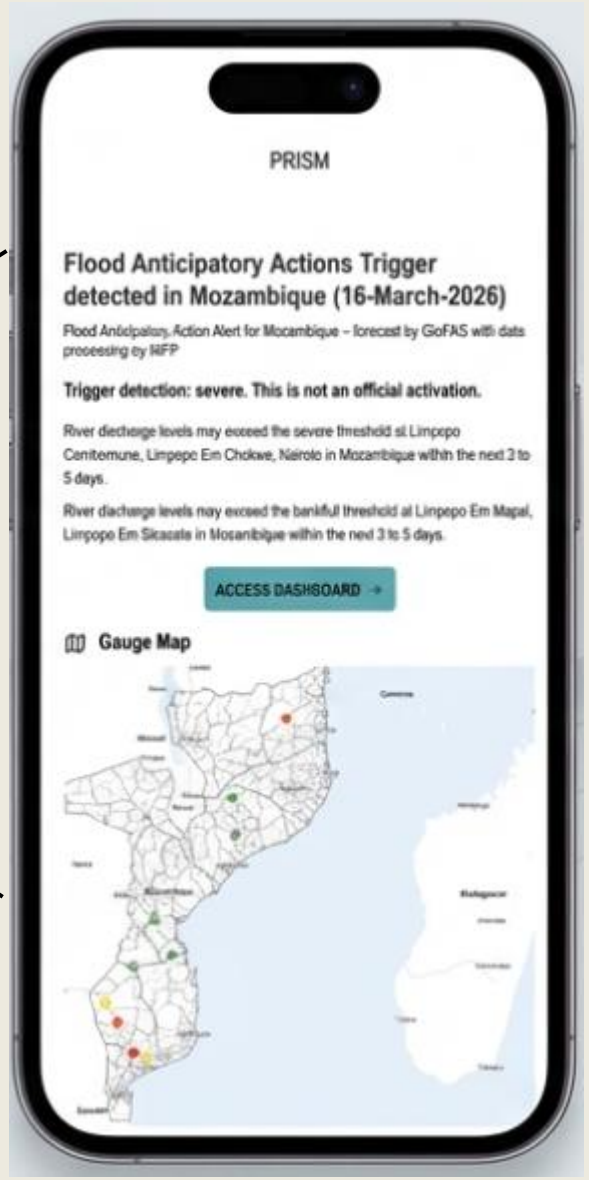


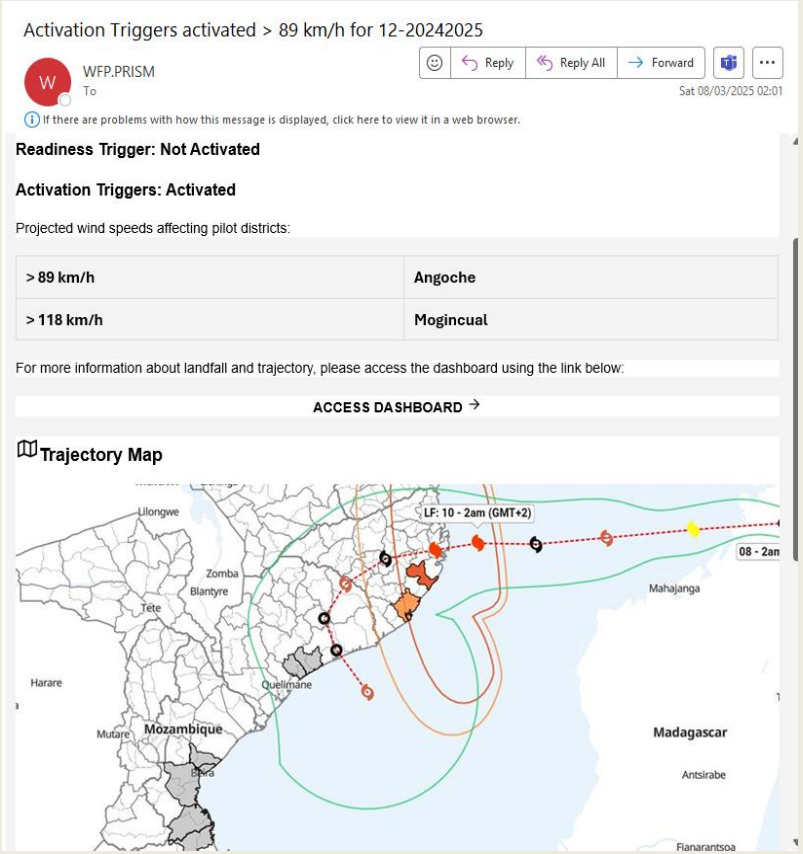
Step 4: Monitor forecast results for AA activation through PRISM



Step 4: Monitor forecast results for AA activation through PRISM alert

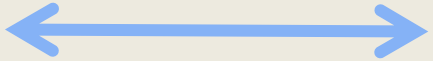






PRISM provides technical detection, but official activation of Anticipatory Action relies strictly on government mandate

Use case: Interoperability of social protection & climate risk information systems



Social protection information system

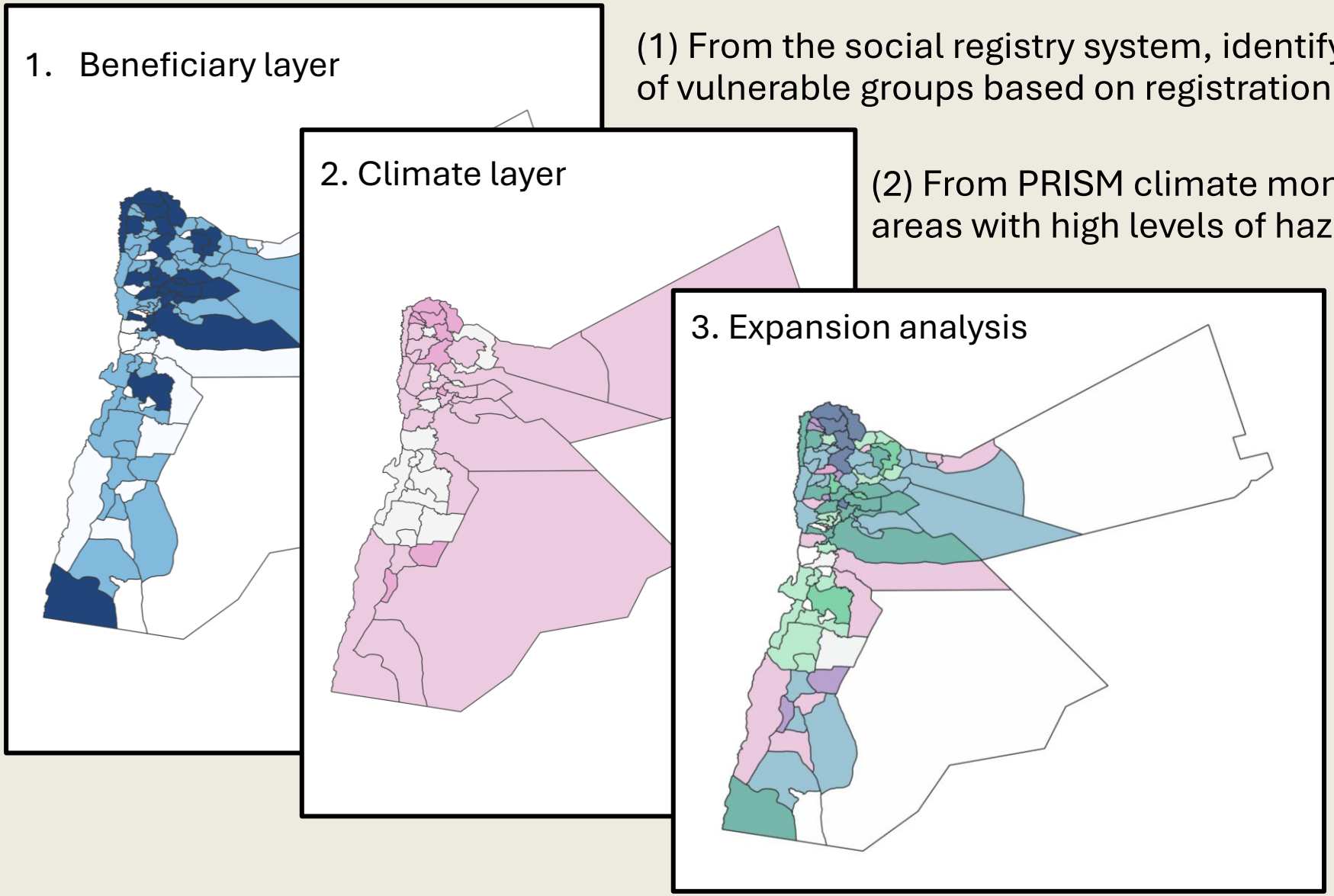
- Schemes and programs
- Beneficiaries database management - registration, enrolment based on eligibility

Climate risk information system (e.g. PRISM)

- Historical hazard (e.g. flood/drought frequency and severity over an area)
- Current hazard monitoring data (e.g. rainfall/flood extent during last 2-10 days)

SP systems query the Climate Risk Information System with area, timeframe, and hazard to assess household exposure and adapt benefits.

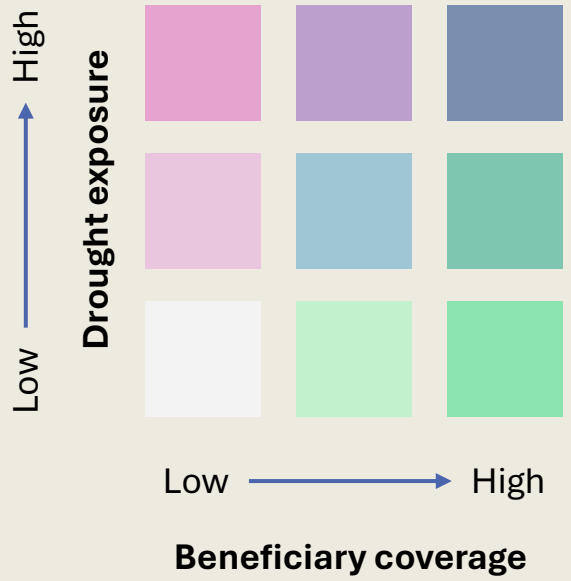
Example: Social protection & climate risk information systems



(1) From the social registry system, identify areas with low/high coverage of vulnerable groups based on registration statistics or poverty estimates

(2) From PRISM climate monitoring systems, identify areas with high levels of hazard exposure (ex: drought)

(3) Hazard exposure + beneficiary coverage analysis to identify potential expansion



Thank You!

PRISM	Definition/Purpose
	Key Capabilities
	AA workflow
	AA PRISM Dashboard
	SP → PRISM Interoperability

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Athanase Akumuntu

Rwanda

Country Input: Rwanda

Rwanda's implementation of early warning and integration with other systems

Rwanda Integrated Early Warning Information System (EWIS)

MARCH 2026

What is Early Warning System?

An Early Warning system (EWS) is an integrated system for monitoring hazards, predicting impacts, issuing timely alerts, and enabling communities and authorities to take early action to reduce disaster risks.

OR

An Early Warning System (EWS) is a risk-informed and communication system designed to alert the population about an impending hazard so that timely, effective and preventive actions can be taken.

Early Warning Systems: Structure & Objectives

Pillar 1

Disaster risk knowledge

Systematically collect data and undertake risk assessments

- Are the hazards and the vulnerabilities well known by the communities?
- What are the patterns and trends in these factors?
- Are risk maps and data widely available?

Pillar 2

Detection, observations, monitoring, analysis and forecasting of hazards

Develop hazard monitoring and early warning services

- Are the right parameters being monitored?
- Is there a sound scientific basis for making forecasts?
- Can accurate and timely warnings be generated?

Pillar 4

Preparedness and response capabilities

Build national and community response capabilities

- Are response plans up to date and tested?
- Are local capacities and knowledge made use of?
- Are people preapred and ready to react to warnings?

Pillar 3

Warning dissemination and communication

Communicate risk information and early warnings

- Do warnings reach all of those at risk?
- Are the risks and warnings understood?
- Is the warning information clear and usable?

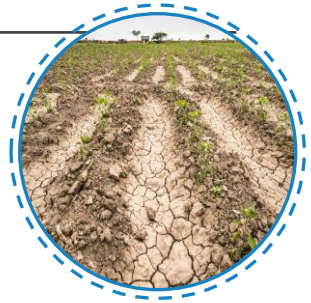
Rwanda risk profile

Floods

Landslides

Strong winds

Thunderstorms/ lightning



Drought

Earthquakes

Volcanic eruption

Fires

CBRNE

Human, crop and animal epidemics

EWIS – Overall System Architecture Overview

Desktop Based Capabilities

ArcGIS Desktop

System Administrator

Key Features

- Create and Manage users
- Create and Publish data, web tools & maps
- Manage data
- Geo-spatial Analysis Tools

ArcGIS Enterprise Web & Mobile Apps

ArcGIS Survey123, Workforce, Field Maps

MINEMA Data managers/operators

Key Features

- Risk Mapping
- Monitoring
- Dissemination & Communication
- Response

Application Server

- ArcGIS Web Adaptor
- Portal for ArcGIS
- ArcGIS Server
- PostgreSQL

ArcGIS Enterprise

EWIS GIS Technology

SOPs for landslides and storms

- **Landslides**
  - Induced by prolonged or heavy rainfall
  - Majority is classified as shallow, small and moving rapidly
  - Main factors to monitor: slope properties and hydrology
  - Factors considered for the model: heavy rainfall, slope, soil type, texture and depth, land coverage and proximity to road network

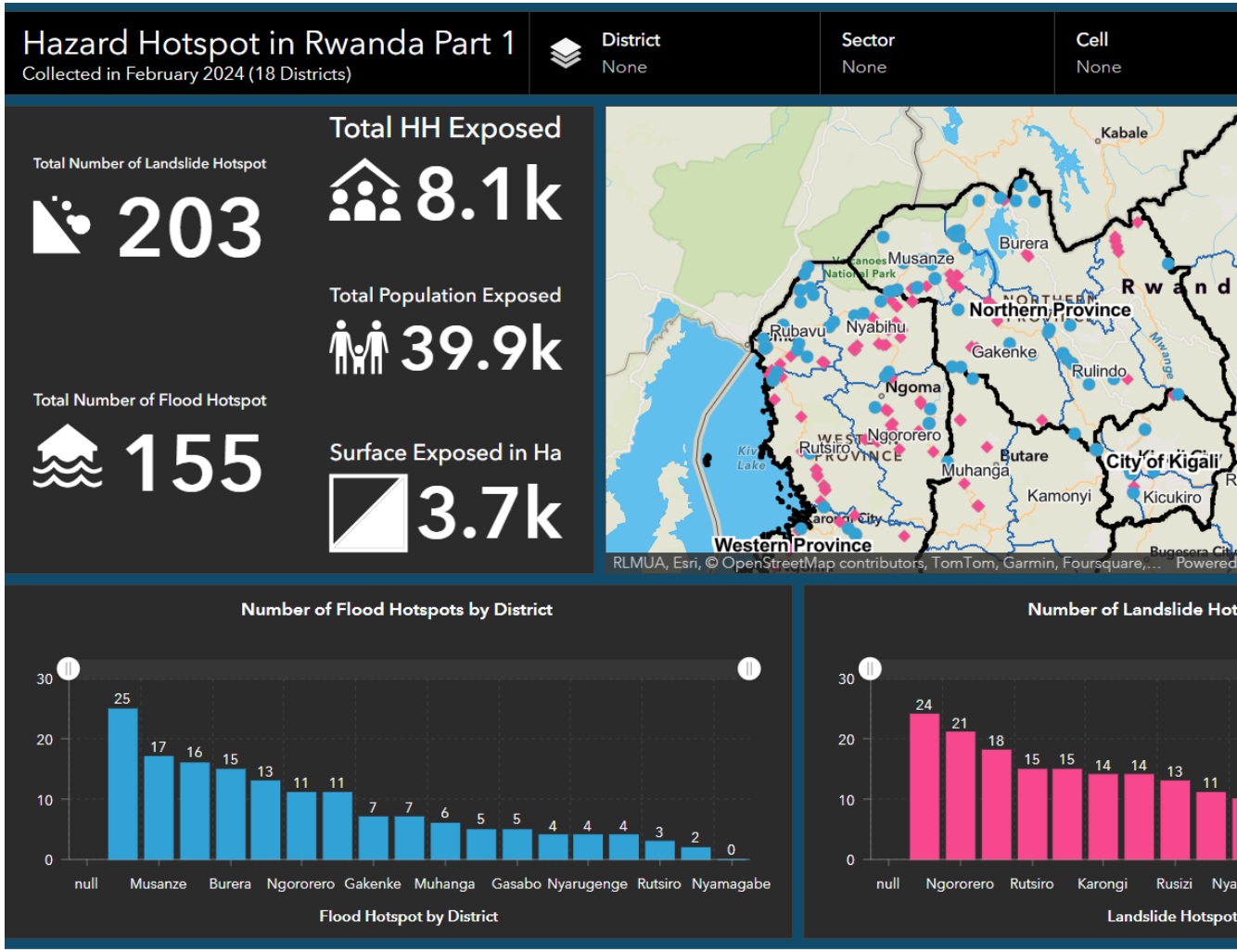
⇨ Real-time measurements of rain intensity required

- **Storms:**
  - Windstorm: wind shear, storm relative helacity, winds at 10m and vertical velocity
  - Hailstorm: cloud ice content, convective precipitation, relative humidity, wind shear, storm relative helacity, vertical velocity and wind at 10m
  - Thunderstorm: convective available potential energy, convective precipitation, relative humidity, wind shear, storm relative helicity and vertical velocity
  - Rainstorm: rainfall, relative humidity, wind shear, storm relative helicity, wind at 10 m and vertical velocity

1. RISK KNOWLEDGE

A. Risk Data:

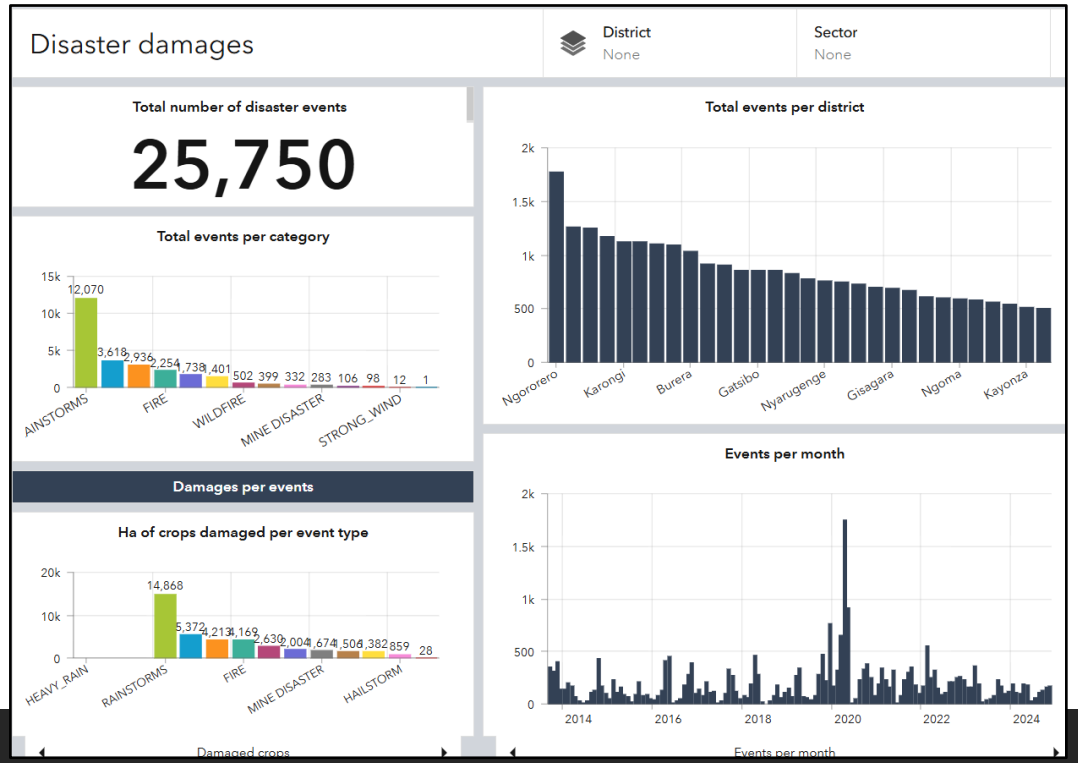
- Designed on top of ArcGIS offering functionalities of dashboards for all collected hazard hotspots
- Has the tool to collect hazard hotspots including spatial information in polygon which is dynamically updated and integrated into a dashboard under VCR Project.
- There is a standard dashboard user manual for Senior Managers



1. RISK KNOWLEDGE

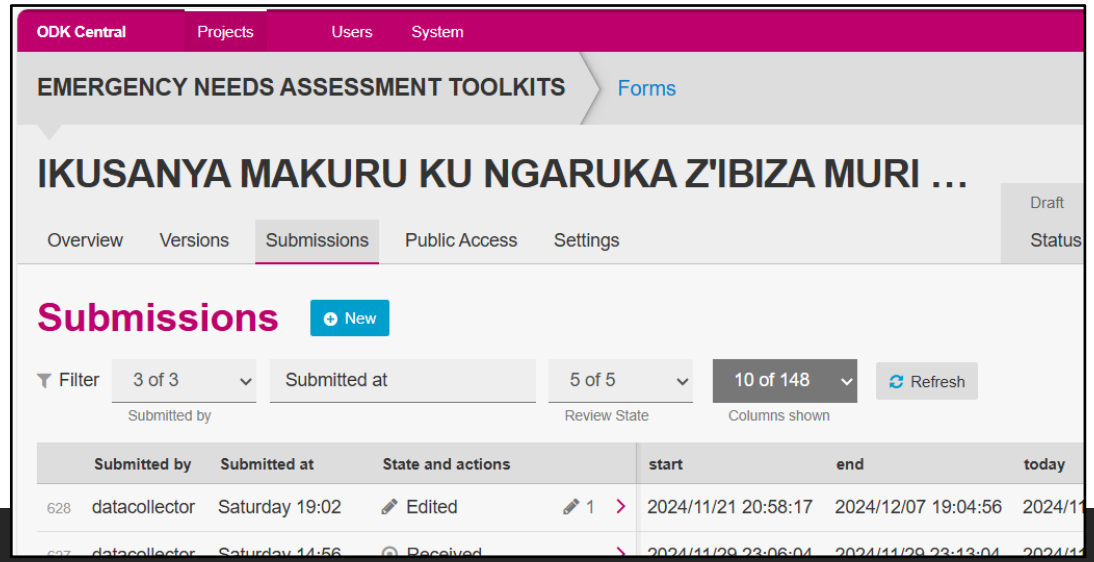
B. Disaster Impact Data:

- Developed and updated a Dashboard for disaster impact from Desinventar up to 30 November 2024.

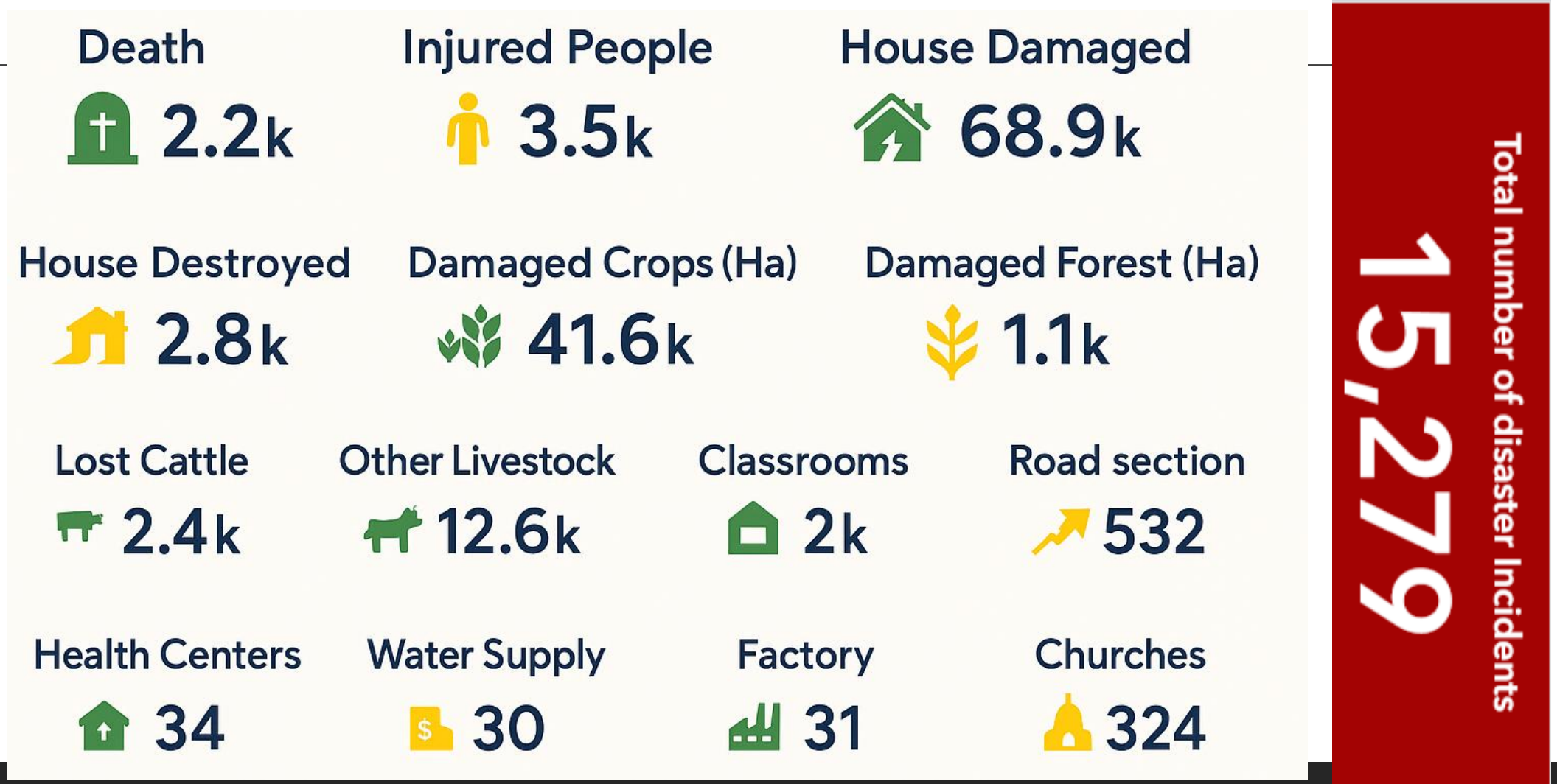


- Close follow-up on the reporting in the ODK tool and integrate it into a dashboard for better data analysis and decision-making. This will allow us to fade out the utilisation of third-party tools including WhatsApp and Desinventar as planned.

- Plan the refresh training with data collectors on ODK Collect



DISASTER IMPACTS IN RWANDA SINCE 2013 TO PRESENT



1. RISK KNOWLEDGE

C. Disaster Damages Pictures/Images :

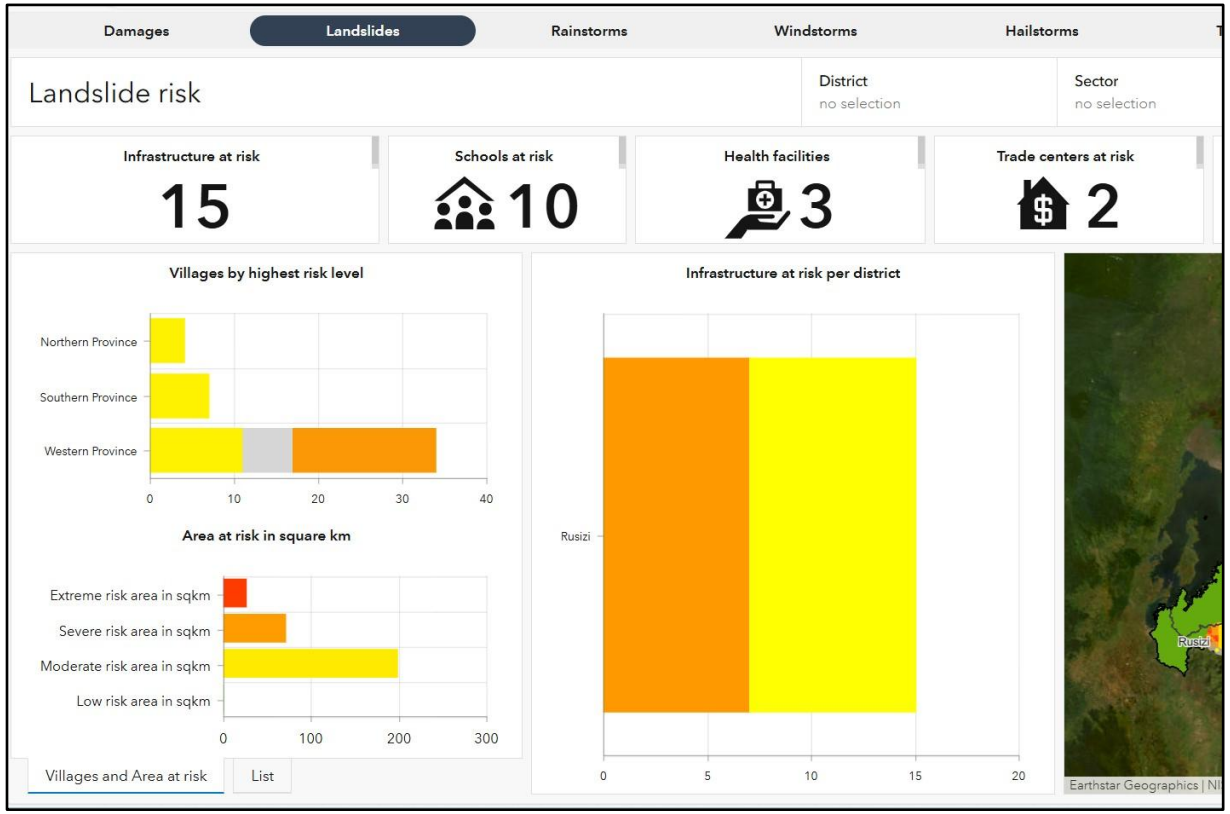
A databank for disaster damage pictures that help in reporting, analysis and decision-making. This data is organized by Year//Month/District and the access has been provided to staff and other users(MINEMA stakeholders)

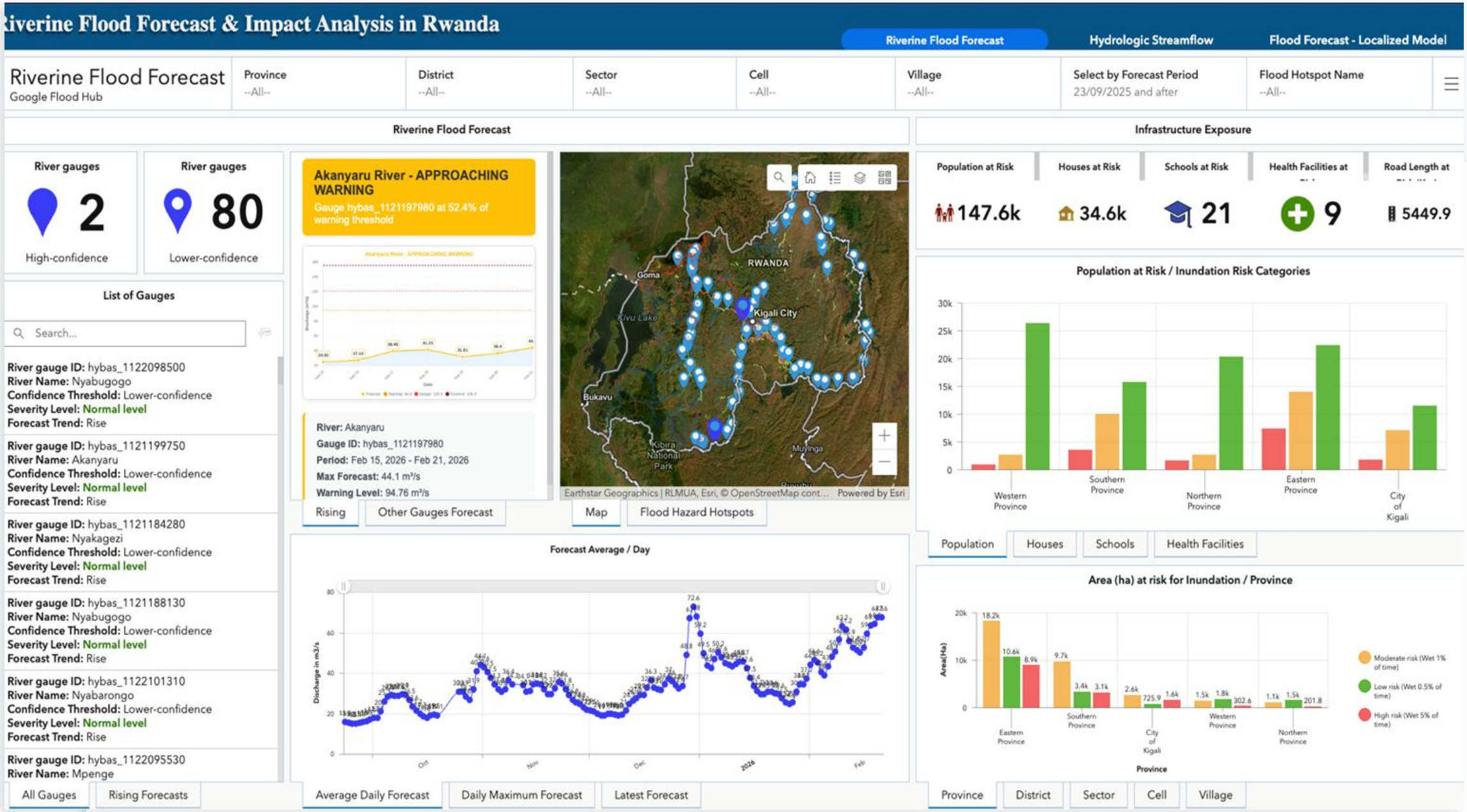
2. MONITORING

A. Early Warning Information System :

- Integrated with Weather forecast Agencies including Meteo Rwanda, RWB and RSA to improve interoperability of systems and feed the landslide and storms models within the EWIS.

- Staff that maintain the system and work on data side have been trained by the system developer (Esri Rwanda) for effective operationalization of the system.





https://ewis.minema.gov.rw/portal/apps/experiencebuilder/experience/?id=ed963897343c46fe903fa991094176f9&page=Flood-Forecast

Way forward Model Training

Transitioning from Infrastructure to Deployment

Automating Data Pipeline

End-to-end workflow for continuous data ingestion, quality control, and version-controlled storage

ONGOING

Feature Review & Selection

Systematic evaluation of hydrological, and catchment features for optimal model performance

PLANNED

Model Fine-tuning Setup

GPU infrastructure, baseline evaluation, and hyperparameter optimization framework

PLANNED

Integration Scripts

Orchestration linking data pipeline outputs to model inputs and real-time dashboard feeds

PLANNED

3. COMMUNICATION AND DISSEMINATION

A. Citizen Alert Protocol :

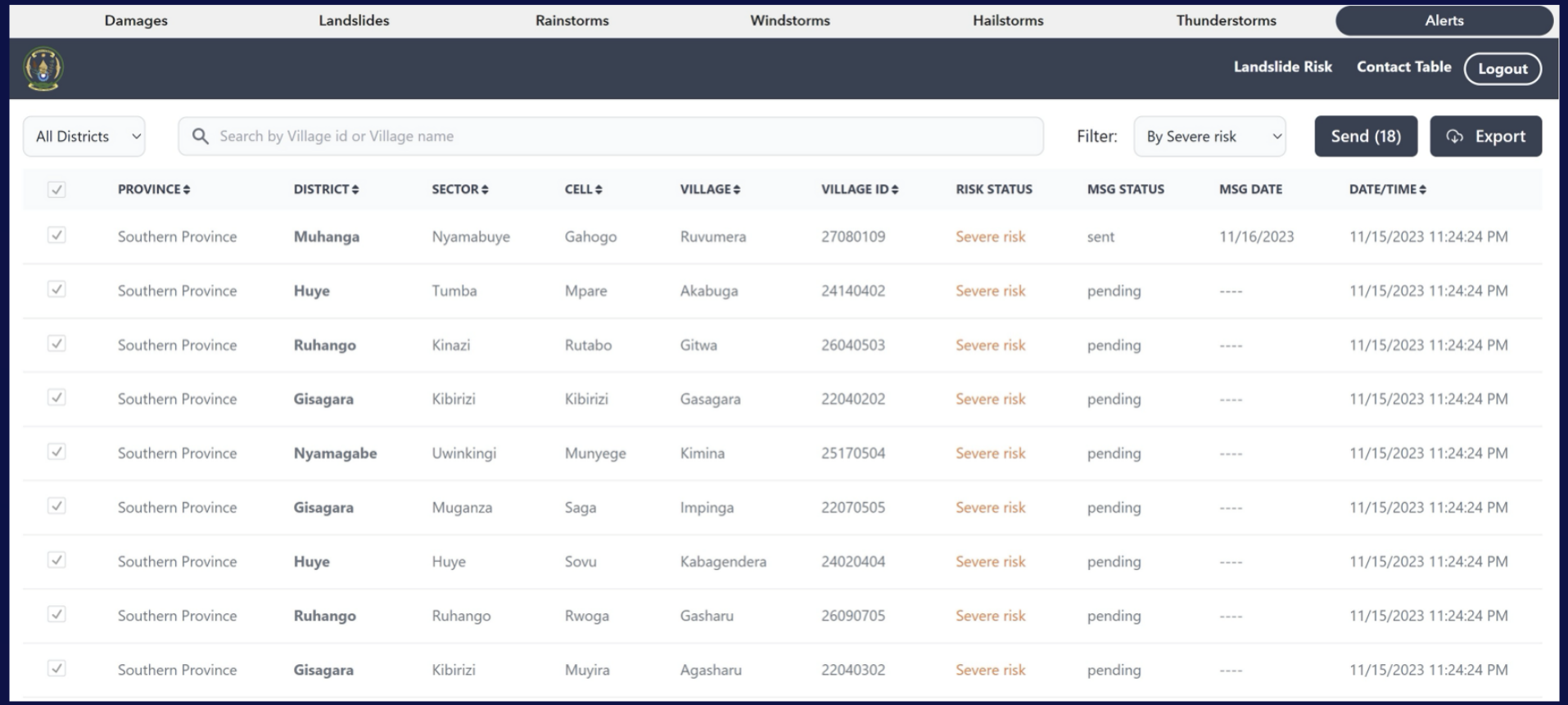
- EWIS has a module of notification, the notifications go to to local leaders and in return they warn the local population
- in collaboration with Mobile Network Operators through RURA, we implemented the **f**ramework for the dissemination of alerts to citizens.

- Developed the draft concept note for the establishment of an **Emergency Telecommunication Cluster** to discuss the effective partnership and collaboration as well as assess technological systems for **Cell Broadcast Center** implementation under the recently validated NETP.

- Continue collaboration with MTN to disseminate warning messages to specific groups through the Bulk SMS Platform.

Alerts

- List of villages is provided with their highest risk status.
- List can be filtered by district, risk level and village
- Village can be notified by email and sms



PROVINCE	DISTRICT	SECTOR	CELL	VILLAGE	VILLAGE ID	RISK STATUS	MSG STATUS	MSG DATE	DATE/TIME
Southern Province	**Muhanga**	Nyamabuye	Gahogo	Ruvumera	27080109	Severe risk	sent	11/16/2023	11/15/2023 11:24:24 PM
Southern Province	**Huye**	Tumba	Mpare	Akabuga	24140402	Severe risk	pending	----	11/15/2023 11:24:24 PM
Southern Province	**Ruhango**	Kinazi	Rutabo	Gitwa	26040503	Severe risk	pending	----	11/15/2023 11:24:24 PM
Southern Province	**Gisagara**	Kibirizi	Kibirizi	Gasagara	22040202	Severe risk	pending	----	11/15/2023 11:24:24 PM
Southern Province	**Nyamagabe**	Uwinkingi	Munyege	Kimina	25170504	Severe risk	pending	----	11/15/2023 11:24:24 PM
Southern Province	**Gisagara**	Muganza	Saga	Impinga	22070505	Severe risk	pending	----	11/15/2023 11:24:24 PM
Southern Province	**Huye**	Huye	Sovu	Kabagendera	24020404	Severe risk	pending	----	11/15/2023 11:24:24 PM
Southern Province	**Ruhango**	Ruhango	Rwoga	Gasharu	26090705	Severe risk	pending	----	11/15/2023 11:24:24 PM
Southern Province	**Gisagara**	Kibirizi	Muyira	Agasharu	22040302	Severe risk	pending	----	11/15/2023 11:24:24 PM

COLLABORATION

4. Anticipatory Action, Response and Risk Knowledge

- **Training of trainers:** In collaboration with Intervention Coordination staff and the WFP, we have conducted training of trainers at the community level (First responder teams) in the identified hotspots, to capacitate them with risk knowledge and anticipatory action intervention skills.

- Training of Senior Managers on the usage of the developed dashboards for effective decision-making.

- Continue with the improvement of the Risk Assessment tools in collaboration with the SP Directorate.

- In house training to share knowledge between colleagues.
- A project to integrate with Social Registry is underway, we recently had discussion with GIZ and MINALOC and the two-way integration is set to start in the new future

THANK YOU

Nina Bekele
Google

Solution Provider: Google

Intro to Google crisis reponse effort, and a deep dive into Google flood hub