Digital Convergence
USP2030

Talking interoperability
A dialogue series for advancing interoperability in the social protection sector

Early warning to early action: interoperable systems for shock-responsive social protection

January 20, 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

THE WORLD BANK

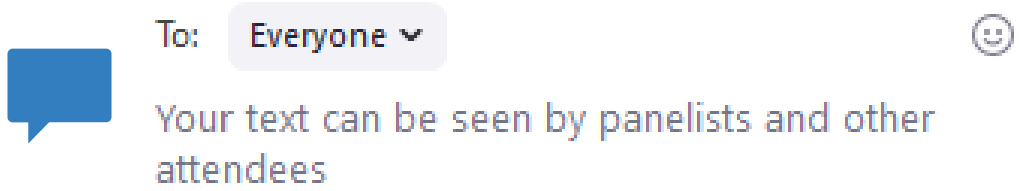
EXPERTISE FRANCE
GROUPE AFD

fiap

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	**Introduction**
12:10–13:10	**Presentations**
13:10–13:40	**Discussion**
13:40–14:00	**Q&A and Closing**

Talking Interoperability #22

A dialogue series for advancing interoperability in the social protection sector

Early warning to early action: interoperable systems for shock-responsive social protection | January 20, 2026 | 12:00-14:00 GMT

Presenter

Joe Zaarour

WFP

Presenter

Alexander Jäeger

World Bank

Presenter

Mulder Mukutmula

Malawi

Presenter

Sandy Gordon

Costa Rica

Discussant

Athanase Akumuntu

Rwanda

Discussant

Nina Bekele

Google

Moderator

Kim Arora

GIZ

Digital Convergence USP2030

Co-funded by

European Union

german cooperation DEUTSCHE ZUSAMMENARBEIT

Coordinated by

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

International Labour Organization

THE WORLD BANK

EXPERTISE FRANCE GROUPE AFD

fiap SISTEMAS PÚBLICOS PARA EL MUNDO

About the Digital Convergence Initiative

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

Co-funded by:

Coordinated by:

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 e.g. Talking interoperability
- ✓ 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 seventeen 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

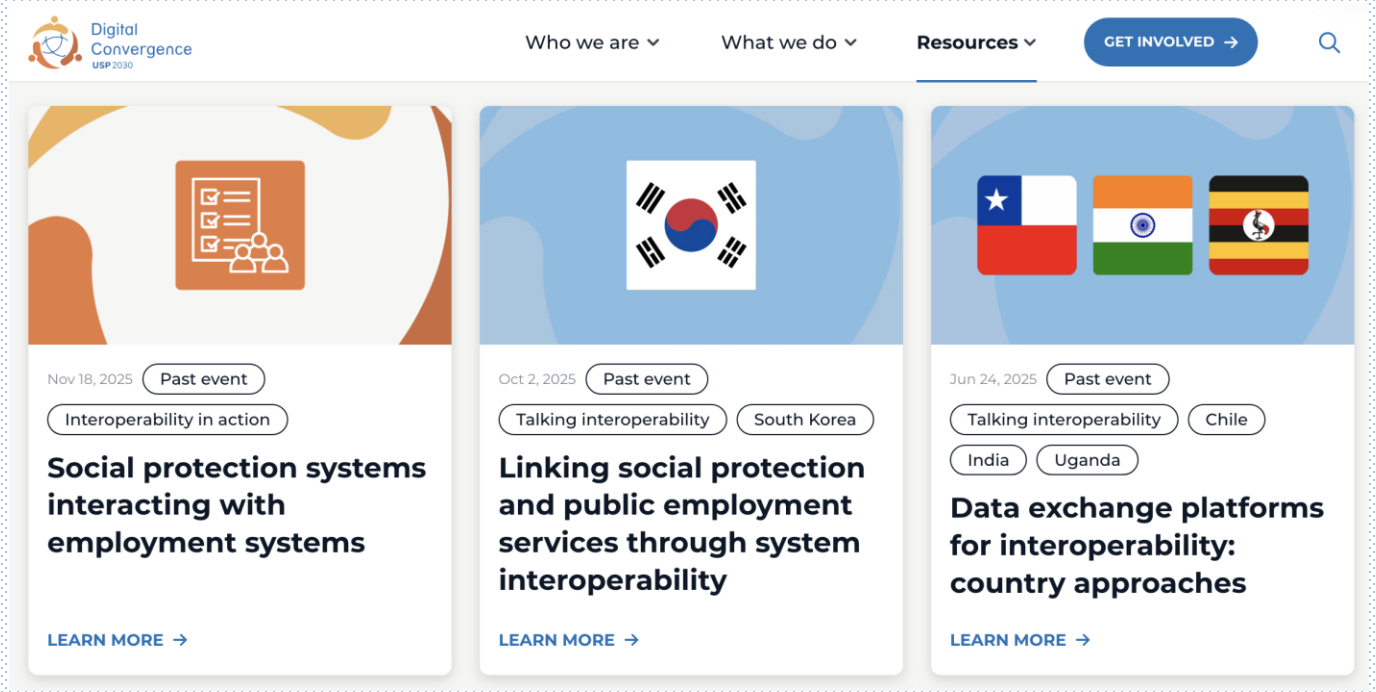
Talking Interoperability

A **dialogue series** by the DCI to facilitate **in-depth technical conversations** around integrated and interoperable social protection information systems across countries

Deep dive into country-level system to:

- Share the technical nuts and bolts of how agencies have designed their social protection information systems for interoperability
- Understand how agencies have tackled the major challenges to interoperability
- Brainstorm potential solutions to remaining bottlenecks

Recordings of past sessions available



[Events – Talking Interoperability – spdci.org]

Joe Zaarour - WFP

Why Early Warning Matter

WFP
World Food Programme

SAVING LIVES
CHANGING LIVES

Acting early reduces the human and economic impacts of predictable shocks.

Countries increasingly face overlapping climate, market-related and other hazards.

Pre-agreed actions linked to forecasts make response faster, more targeted, and more cost-effective.

Anticipatory Action enables pre-agreed support before expected shocks to reduce impact.

Early warning systems monitor and forecast risks that may drive hunger or humanitarian crises.

Translating Data into Actionable Forecasts

Risk Knowledge

- Understand who and what is exposed to hazards.

Hazard Monitoring and Forecasting

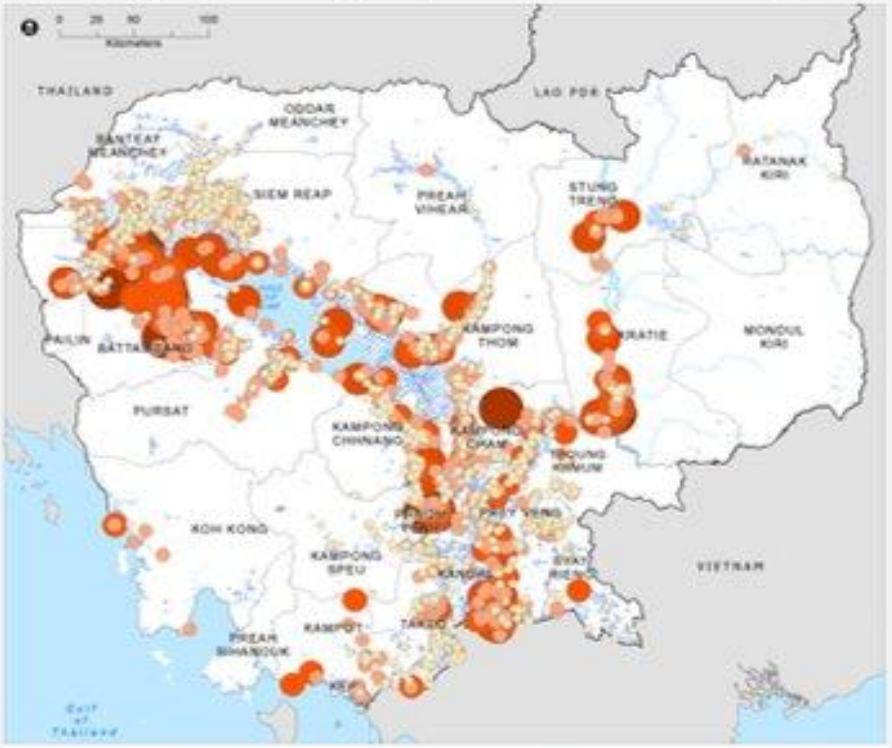
- Tracking evolving risks in real-time.

Warning and Communication

- Delivering timely alerts to decision-makers and communities

Preparedness and Response

- Activating predefined measurements when thresholds are met.



Spatial analysis and map preparation was done by WFP Cambodia.

World Food Programme

SAVING LIVES
CHANGING LIVES

From Forecasts to Decisions

- Forecasts must be converted into clear risk levels and actionable scenarios.
- Decision thresholds guide when anticipatory measures should start.
- Combining models with local knowledge strengthens the relevance of actions.
- Transparent criteria ensure timely and accountable activation.

WFP
World Food Programme
SAVING LIVES
CHANGING LIVES

Machine Learning for Early Warning Systems

Why Interoperability is Essential

- Effective early action depends on systems exchanging data reliably.
- Shared standards and workflows reduce delays & prevent inconsistencies.
- Interoperable systems allow early warnings to trigger social protection actions.
- Clear roles, agreements, and protocols ensure safe coordinated data exchange.

Data Quality For Effective Interoperability

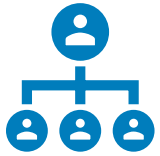
Accuracy
Data correctly represent real–world values

Completeness
All required fields and attributes are present

Timeliness
Information is updated frequently enough for operational use

Synchronization
Systems refresh data on agreed schedules.

Provenance
Each data set is traceable to a verified source



Governance
Access, privacy, security, life-cycle considerations and responsible use

WFP
World Food Programme
SAVING LIVES
CHANGING LIVES

A WFP Intervention Toolbox for Early Warning Systems

Framework for Policy and Analysis

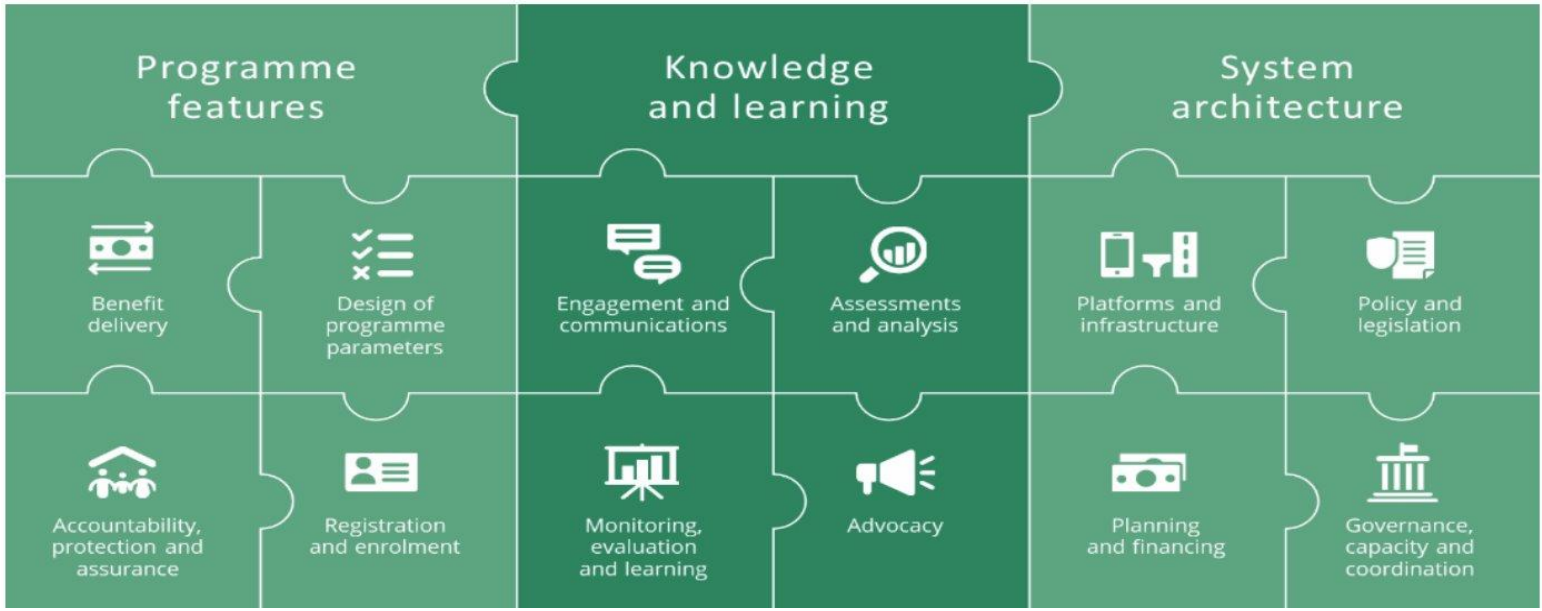
- SOP: Strengthened information, coordination, and early-action planning at national and sub-national levels.
- SRSP Methodology: Assessment of system capacities and readiness to identify gaps, opportunities, and pathways for strengthening emergency response.
- Financing Mechanisms (IFIs / Macro Insurances):Pre-arranged/ flexible funding for timely activation. and flexible funding options that enable timely activation.

Tools and Data Insights

- Climate Monitoring & Forecasting Platforms such as PRISM for climate and hazard surveillance.
- AI-Driven Hazard Modelling such as Google Flood Hub providing predictive flood-forecasting capabilities.

Data Repositories

- Combine climate, market population and vulnerability data sets to support decisions.



Examples of Early Warning Systems and Data Pipelines

WFP
World Food Programme

SAVING LIVES
CHANGING LIVES

- HungerMap LIVE: Real-time food security indicators and trends.
- PRISM: Hazard–vulnerability overlays for early action planning.
- AIMS: Tracks post-shock impacts and community resilience.
- Geospatial Platforms (e.g., GeoNode/DataCube): Support spatial analysis for targeting and monitoring.

- Satellite imagery for flood, drought, and land-use changes.
- Long-term rainfall time series for drought monitoring and triggers.
- Food security early warning, market trends, and scenario analysis.IPC: Standardized classification of acute food insecurity.

- National Meteorological Agencies: Localized hazard forecasts and alerts.

One Size Does not Fit All – Country Examples

WFP
World Food Programme
SAVING LIVES
CHANGING LIVES

- Models, indicators, and data pipelines must be tailored to country systems and hazards.

- National stakeholders—meteorological, water, housing, space, social protection, disaster agencies—require aligned workflows.

Malawi is institutionalizing anticipatory action through national dialogue platforms, technical working groups.

Tools used: Climate Monitoring & Forecasting Platforms, PRISM

Rwanda is leveraging flood models predictions for landslide management and overlaying population, social hazards and infrastructure datasets.

Tools used: Google Flood Hub providing predictive riverine/flood-forecasting and spatial data analysis and visualization like ESRI.

When Alerts Become Actionable

Pre-defined thresholds determine when support measures should activate.

Lead time guides what type of assistance is feasible.

Activation requires readiness: financing, logistics, and SOPs already in place.

Without prepared systems, even the best warnings cannot translate into action.

Alexander Jäeger – World Bank

The Challenges when going beyond Early Warning

The Delivery Challenge

- **Alerts without response mechanisms** have minimal impact
- **Speed and scale** are the real challenges in crisis response
- **Building new systems during a crisis** is inefficient an ineffective

The Last Mile Problem

- Identification, targeting, and payment **systems must be ready** to deliver meaningful **services in time**
- **Coordination** across actors (government, international institutions, NGOs) is **complex**

The Additionality of Social Protection Systems

Why Social Protection Systems?

- **Existing infrastructure** saves resources and time
- Providing **national ownership, rights-based approach and long-term sustainability** before and after shocks
- **Regular interface** with vulnerable populations

Shock-Responsive Social Protection

- **Vertical expansion**: Increasing benefits to existing beneficiaries
- **Horizontal expansion**: Adding new beneficiaries temporarily
- **Core Components**: Registries, targeting mechanisms, payment systems

Integrating Early Warning and Social Protection Systems

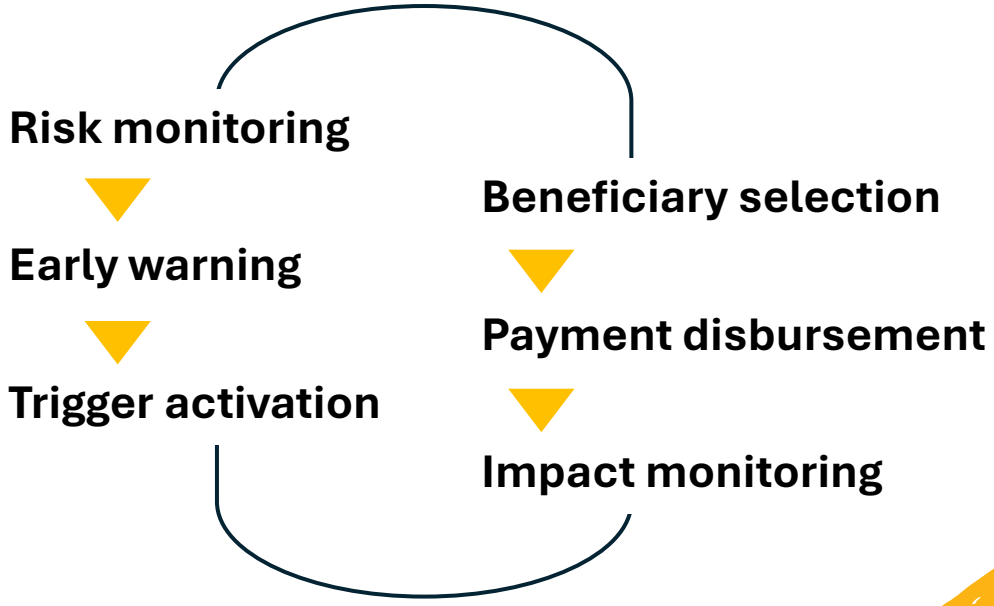
Technical Integration Points

- **Linking hazard forecasts** to **social registry data**
- **Geographic and vulnerability** overlays for **targeting**
- **Automated trigger mechanisms** with human oversight
- **Real-time tracking of response effectiveness**

Institutional Integration

- **Multi-stakeholder coordination**
- **Pre-agreed roles** between meteorological, disaster, and social protection agencies
- **Integration in disaster risk financing strategy:** Deciding on financing structure (contingency financing from government budget and donors, insurance solutions et al.)

Connecting parallel process structures



Feedback loops
for continuous improvement

Impact: Lives Saved & Costs Reduced

Direct Impact of response

- **Faster response:** Assistance within days instead of months
- **Reduced asset depletion:** Households don't sell livestock or productive assets
- **Better nutrition outcomes:** Prevention of acute malnutrition
- **Reduced displacement:** People can stay in their communities

Economic Efficiency

- **Cost-benefit ratio:** $1 invested in anticipatory action saves $2-7 in response
- **Reduced need for expensive emergency interventions**
- **Lower long-term recovery**

System Strengthening

- **Stronger national institutions for future shocks**
- **Improved government capacity and credibility**

Key Messages

Early Warning Predicts Risk

- EWS tells us what's coming, where, when, and how severe—but only if systems can act on that information

Social Protection Delivers Response

- Existing SP systems provide the infrastructure, reach, and efficiency needed to turn warnings into rapid assistance

Interoperability Connects the Two

- Technical and institutional integration enables data to flow and triggers to activate—safely and at speed

Invest Before Crisis Strikes

- Building systems during normal times is the real breakthrough—not scrambling during emergencies

Evidence Supports the Approach

- Anticipatory action through SP systems saves lives, protects assets, and is efficient.

Malawi

Malawi:

From Early Warning to Social Support – Strengthening Livelihood Resilience

Linking Disaster Risk Financing with
Social Protection Systems

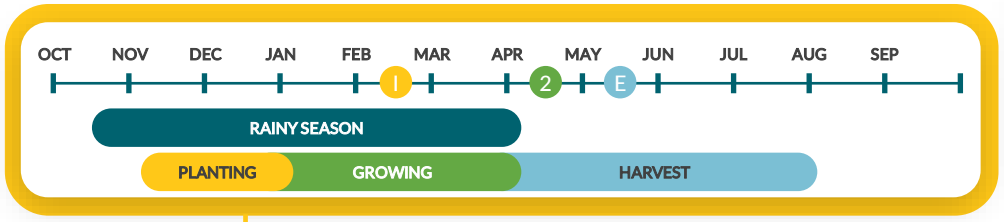
Disaster Risk Financing & Insurance Program

SUPPORTED BY WORLD BANK GROUP

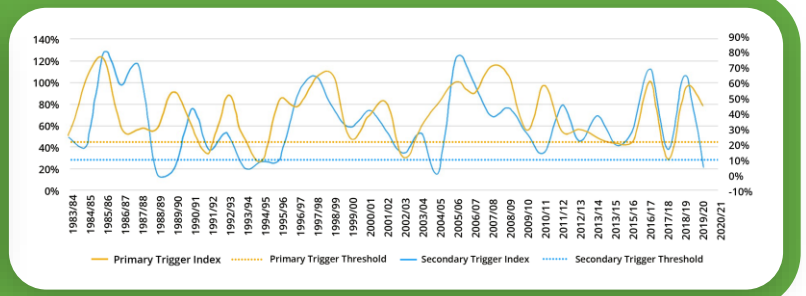
Global Shield Financing Facility

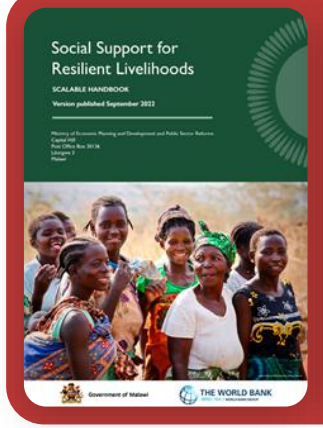
The Scalable Story

The Malawi Social Support for Resilient Livelihoods Project aims to improve the resilience of poor and vulnerable populations and strengthen the national safety net platform through the establishment of a **Scalable Safety Nets Mechanism with a pre-funded financing plan linked to existing operational plan**



1 2 3 4 5





African Risk Capacity
Sovereign Disaster Risk Solutions
A Specialized Agency of the African Union

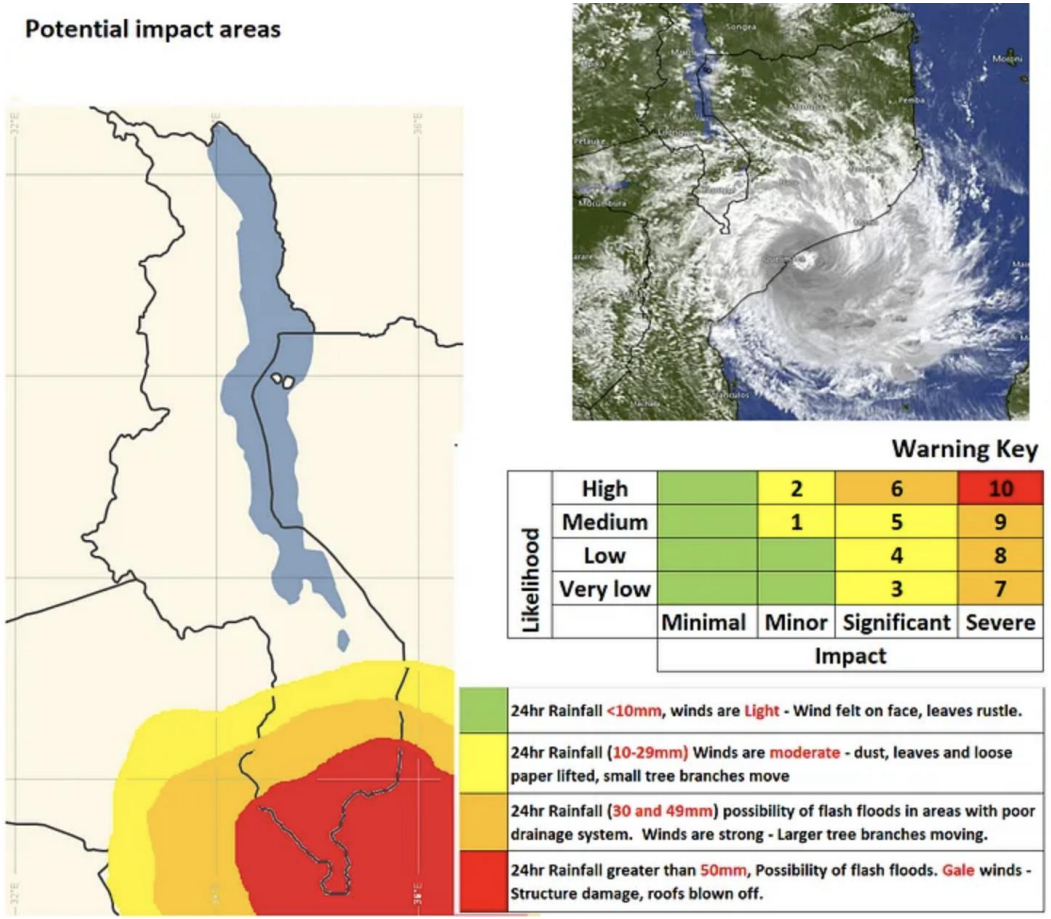
27

Malawi Early Warning System

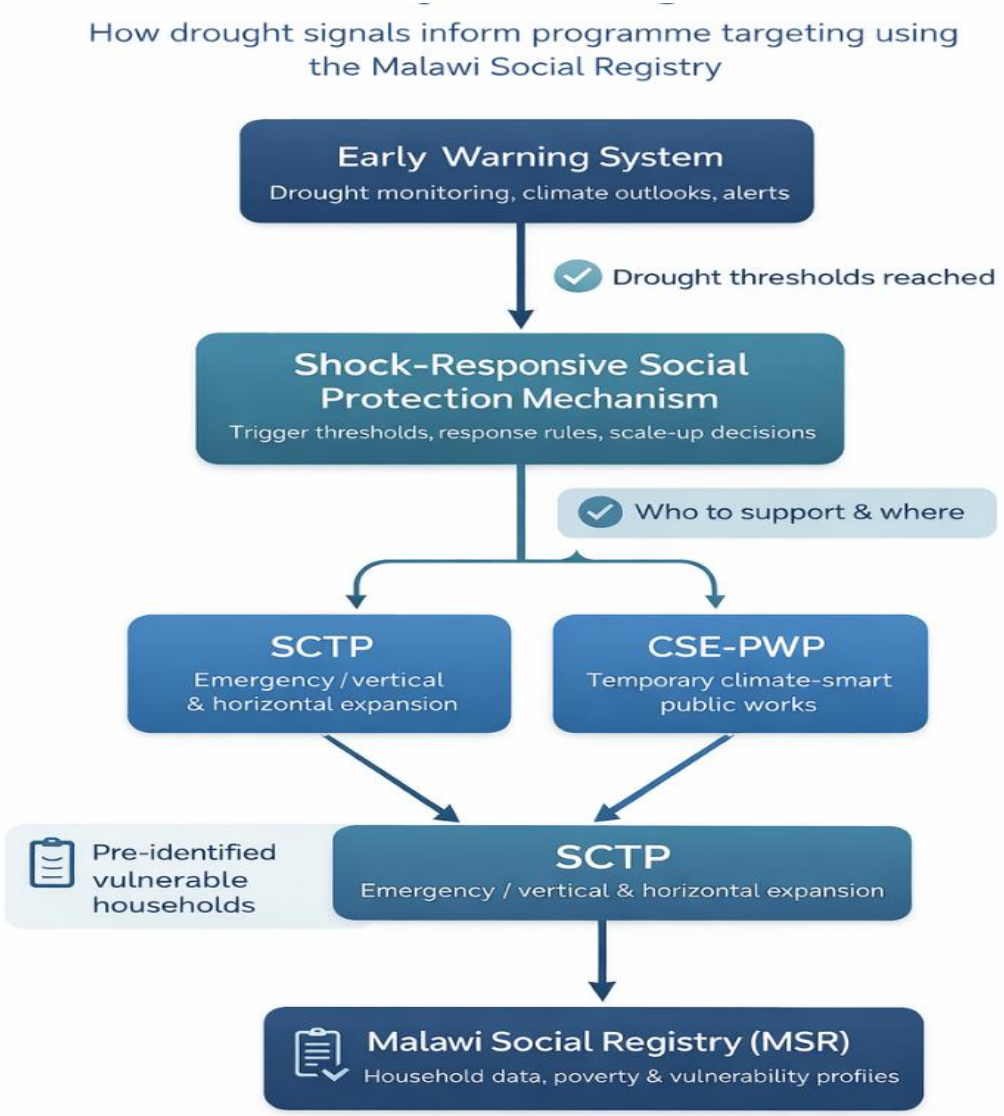
Malawi's Department of Climate Change and Meteorological Services (DCCMS), under the Ministry of Natural Resources and Climate Change, has successfully **piloted the Platform for Real-time Impact and Situation Monitoring (PRISM) tool** in five drought-prone districts.

PRISM tool **integrates multiple data sources including satellite imagery, rainfall patterns, soil moisture levels, vegetation health indices, and socioeconomic indicators** to deliver real-time insights into drought conditions and their potential impacts on vulnerable communities.

The pilot phase was conducted in Mangochi, Machinga, Zomba, Phalombe, and Nsanje—**regions historically affected by severe weather shocks and food insecurity**.



Who to target: Linking Malawi Social Registry to Shocks/disasters



Drought signals from the EWS

trigger

shock-responsive decisions,which

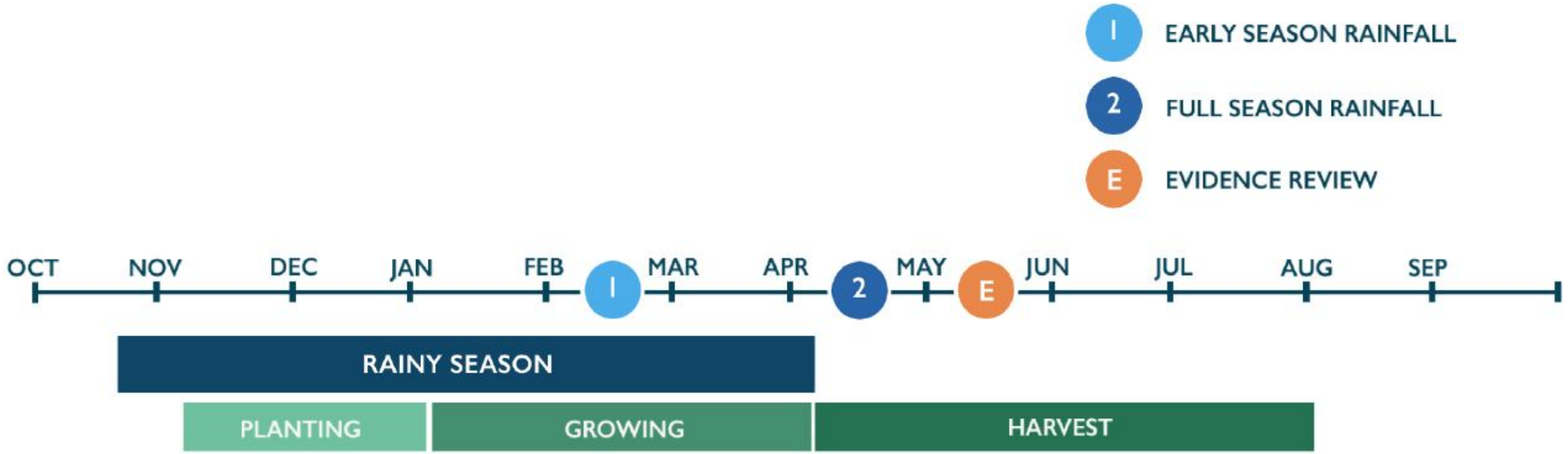
activate

Social Cash Transfer Program(SCTP) or Climate Smart Public Works Program (CSE-PWP)

using the

Malawi Social Registry(MSR) to quickly identify and target affected households.

Two Triggers are used to decide on scale up



- **The primary trigger** is based on a modeled hard trigger using satellite data to capture the impact of drought – EARLY AND FULL SEASON RAINFALL
- **The secondary trigger** uses ground conditions or "softer" sources as a fail-safe to capture impacts of drought not captured under the satellite-based trigger – EVIDENCE REVIEW

Five Triggers to Inform District Selection

1. Drought Risk
2. Food security/vulnerability
3. Poverty
4. Systems readiness
5. Other interventions

Shock Response Mechanisms

Background:

Making the SCTP shock-responsive is a key pillar of the government's Disaster Risk Financing Strategy.

Scalable Safety Net mechanism offers a valuable tool to provide additional assistance to the poorest households when affected by climate-related disasters.

Support to develop the SCTP scalable mechanism was provided by the World Bank through the **Social Support for Resilient Livelihoods project (SSRLP)**, with additional grant finance from the Global Shield Financing Facility.

Coverage: Designed to protect around **300,000 people** in selected districts at the onset of drought. It monitors rainfall and food insecurity, to deliver payouts before the lean season.

Scalable Mechanism

- **SOLUTION**: A mechanism to provide cash to vulnerable households following a drought (under the SSRLP financing scalable safety nets component)

- **OBJECTIVE**: Pre-agreed decision making processes and finance on lstand-by, to support quick delivery of relief

- **DELIVERY CHANNEL : Social Cash Transfer and Public Works Program**

- **TRIGGERING MECHANSIM**: There are two 'triggers' for determining when cash transfers will be made.

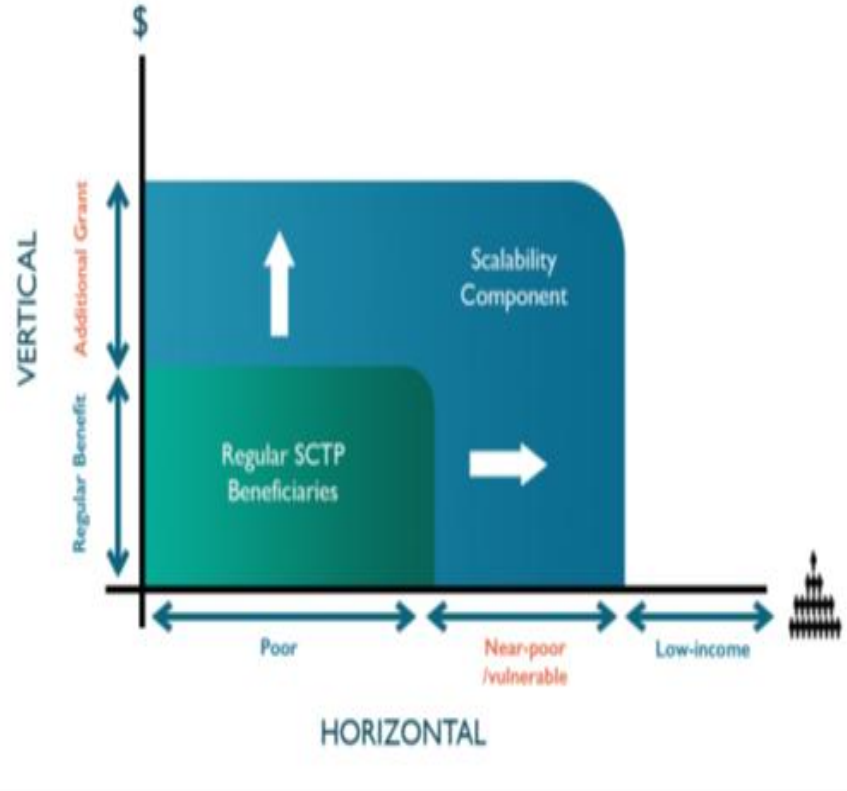
  - A **parametric triggering mechanism**, applied to six drought prone districts with targeting data and e-payments systems already established (**South: Chiradzulu, Blantyre, Thyolo, Mwanza, Nsanje Neno and Chikwawa Central: Ntcheu, Nkhotakota, North: Karonga**). Satelite data is used by DCCMS to determine if the trigger is met. This covers around 200,000 households.

  - An **evidence review** to determine if the parametric triggers represent the situation on the ground, and/or disasters other than drought have occurred (this also allows for scale up in districts beyond the initial 6).

- **VALIDATION:** A scalability report is prepared by the Taskforce assessing the results and finalising operational plans.

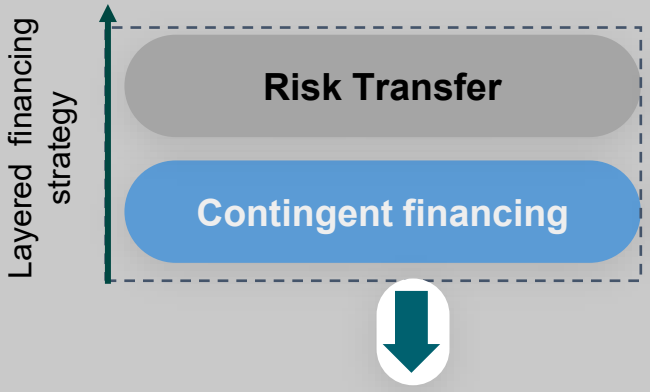
Parameters for Scale-Up

- The Scalable Mechanism uses existing SCTP structures to:
  - Provide additional grant money to existing beneficiaries (vertical expansion, VE)
  - Temporarily include newly eligible beneficiaries that have become transitory vulnerable (horizontal expansion, HE)
  - The HE beneficiaries come from the Climate Smart Public Works Program (in the majority of districts



Rural household coverage	17%
Transfer amount	MWK 50,000 (this changes according to the market value of maize
Duration	3 months

Overall Summary of Progress to date



US$22mn insurance coverage through ARC ltd, for governments scalable drought triggers in 9 named districts

US$37.5mn contingency finance from GoM's IDA allocation , to cover insurance deductible and for response in a wider range of districts / perils

Provides protection for:

Model data: Rainfall & food insecurity to deliver payouts before the lean season.

~600,000 people in **10 districts** protected by explicit mechanism with pre-arranged financing. Additional people protected by flexible funding

Covers vulnerable households on the **social cash transfer program** and the **climate smart public works program.**

CTs delivered through **digital accounts** offered by financial service providers

PROCESS & RESULTS

2021: Scalable handbook published by government, setting out **mechanism's triggers and financing plan**

2022: US$6.3m in contingent financing triggered for 400,000 people in 3 districts

2023: Investments in beneficiary registry and movement from manual to **digital payments** in majority of districts nationwide.

2023: $1m to cover 65,000 people in 1 district

2023: Successful **placement of risk transfer instrument** through ARC Ltd, for 23/24 and 24/25 seasons

2024: Large scale up in response to El Nino drought in multiple districts in June 2024, financing from package (insurance & contingent financing)

2025: US$3,451,901 was used to cover 64,000 in 3 districts from the insurance & contingent financing

C Other Shock-Responsive Interventions

Cyclone Freddy Response

- Cyclone characterized by severe floods and landslides.
- 9 districts and 2 cities affected.
- GoM devised a relief package to expedite the recovery process.
- VE cash transfers to SCTP **(31,835)** & CSPWP **(80,938)** beneficiaries
- HE cash transfers to non-ben **(81,784)**
- K50,000/month for 3 months

Price-Shock Emergency Urban Cash Intervention

- Devaluation of MWK by 44%
- Particularly worrisome for low-income households and workers who live on hand-to-mouth in the cities.
- Targeted the 4 cities of Malawi
- Cash transfer value of MK50,000/hh for 3 months.
- Targeted a total of **105,000** households.

Pre-established rules and financing helped speed response

A GoM Pre-agreed rules and processes made triggering scale ups very fast. It took around two weeks after the season end for all the relevant information to be compiled for approval.

Going Forward

1. **Nationwide**
Expand the mechanism from 8 districts to all 28.
Linking the trigger structure to other social protection programs (climate smart public work beneficiaries and/or graduation interventions).

2. **Flood Triggers**
The North and South of Malawi are flood/storm prone and look to develop a mechanism that will also address this concern.

3. **Fiscal Resilience**
Putting this alongside other DRF instruments builds financial resilience. Partners like GS-FF are fundamental, given macro-fiscal imbalances countries like Malawi experience in the face of many shocks.

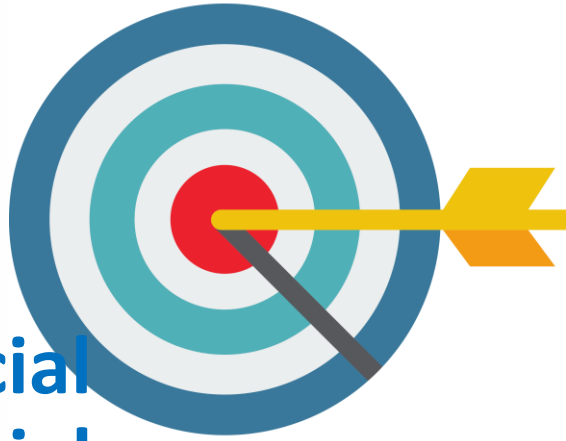
4. **Payout Evaluations**
An evaluation of the payouts already made will be extremely helpful to learn what is working currently, and what opportunities there are for improvement.

Costa Rica

GeoSinirube

Enero 2026

2.1 Overall Objective



Strengthen the responsiveness of the **adaptive social protection system** by developing a **geospatial technology** tool that allows for the identification of factors affecting sectors of the population living in **poverty, extreme poverty, and vulnerability,** with a precise territorial approach, through actions aimed at providing **comprehensive, permanent solutions** and disaster response (shocks).

2.2 Specific objetives

Design of the IT Structure

Create the technological architecture of the tool by defining requirements to provide effective information.

Improving Geographic Data Quality

Review, correct, and update household data in Sinirube to accurately integrate it into GeoSinirube.

Development of the Georeferenced Information Portal

Create a portal with interactive maps and dashboards that display social and demographic data, strengthening inter-institutional collaboration and optimizing resource distribution.

2.2 Specific objectives

Geospatial Analysis for Disaster Response

Include in aid programs for people living in extreme and basic poverty in areas at risk of emergencies.

Geospatial Analysis of Indigenous Territories

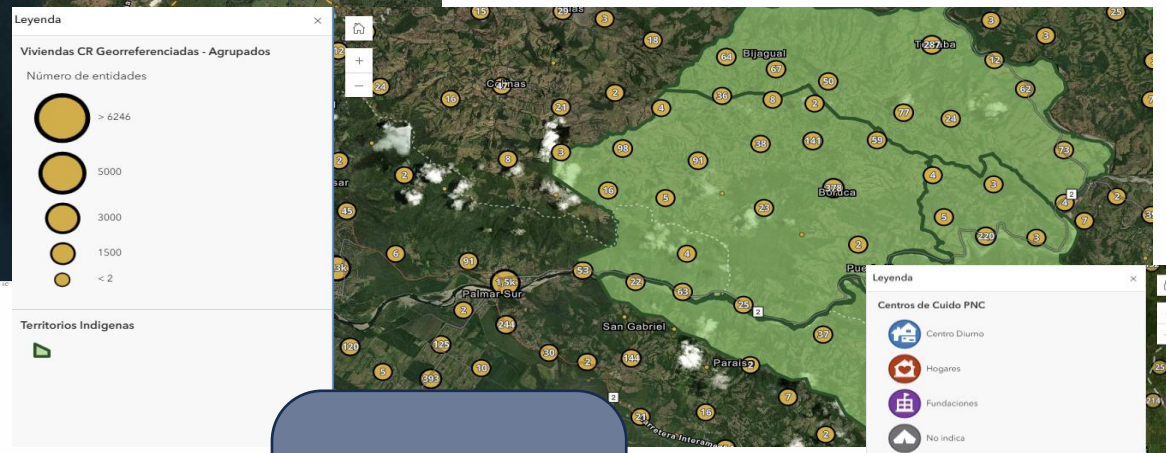
Design a system adapted to indigenous realities to measure poverty levels in these communities.

Registration of Services for Dependent Individuals

Integrate an updated system of care centers and services, improving the availability and quality of life for dependent persons and their families.

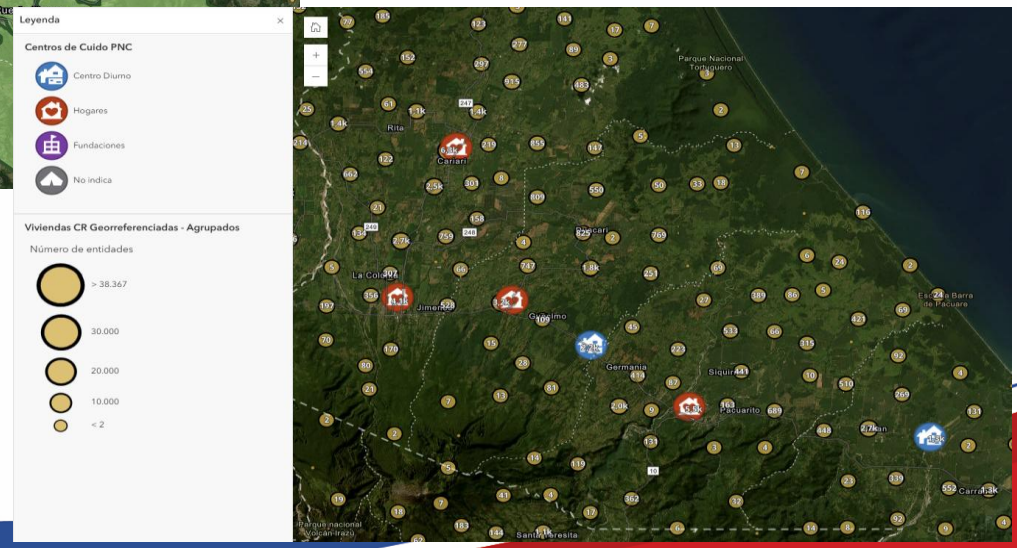
Products: GeoSinirube 1.0

CNE map



Indigenous Territories map

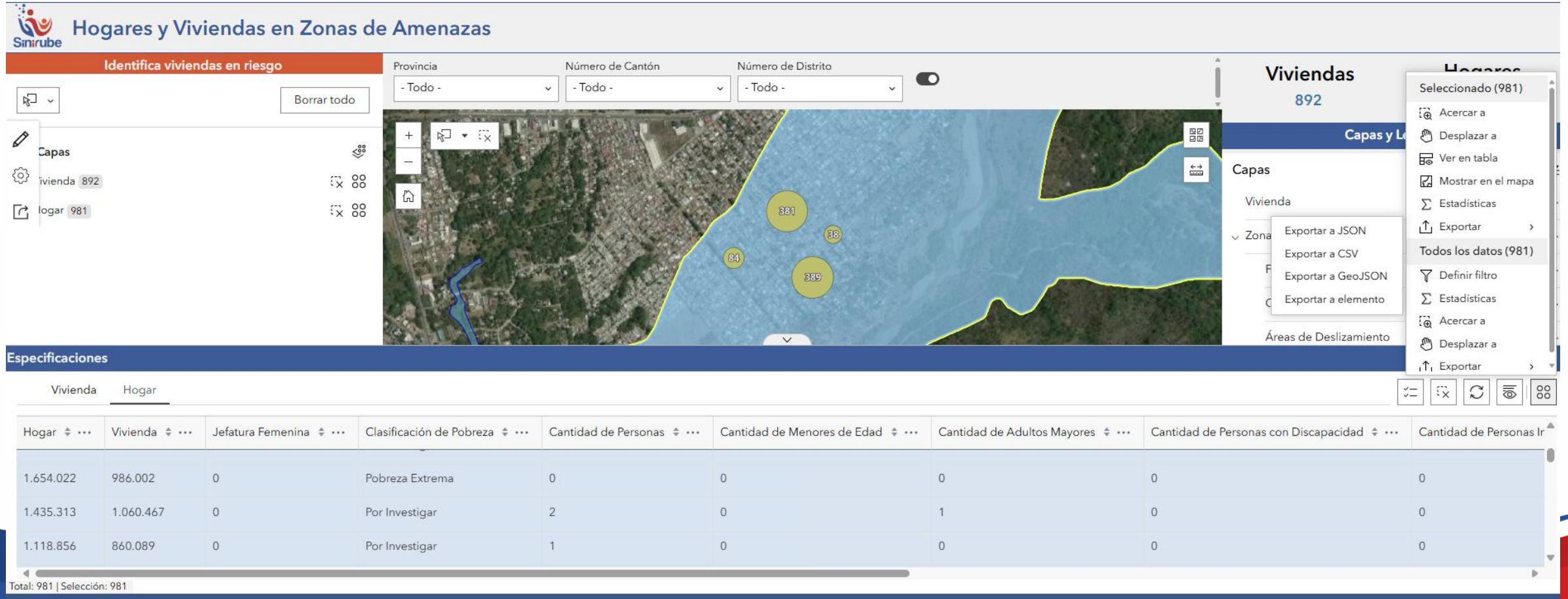
SINCA map



Products: GeoSinirube 1.0

Geospatial analysis component of hazard zones for disaster response (shocks) for the inclusion of the population exposed to emergencies

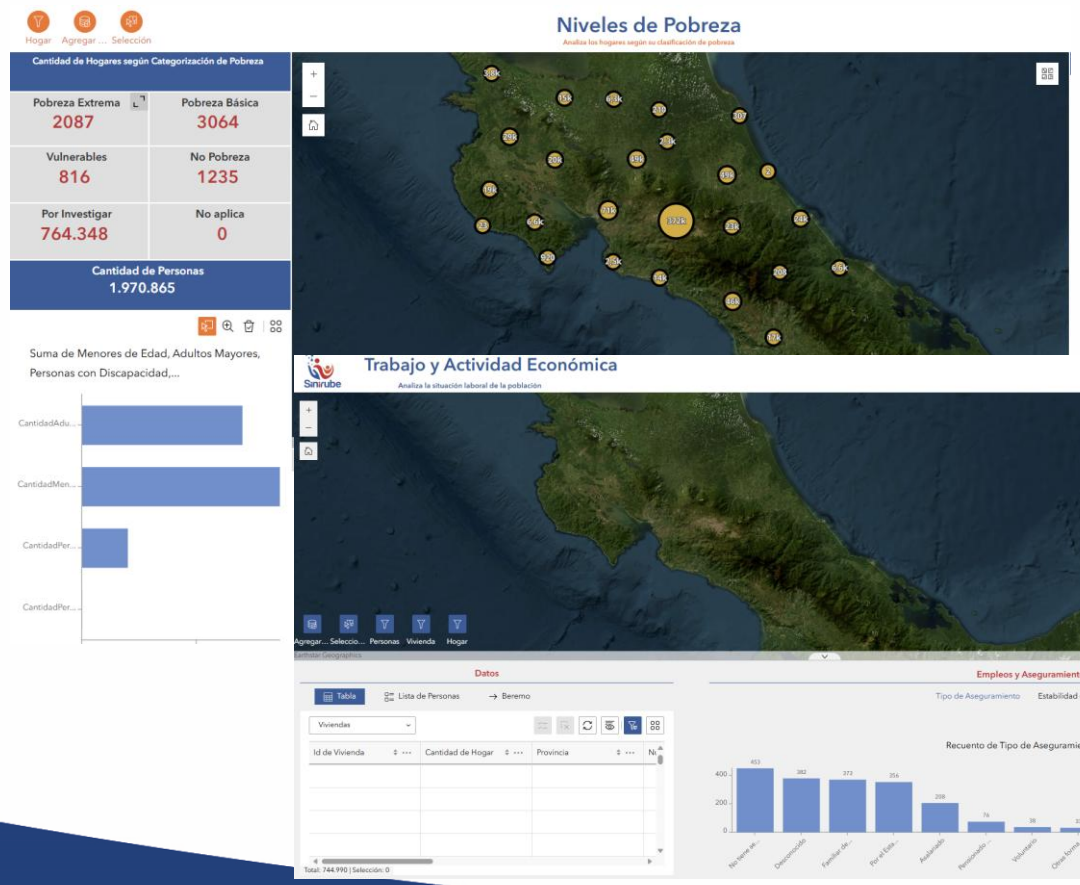
Homes map

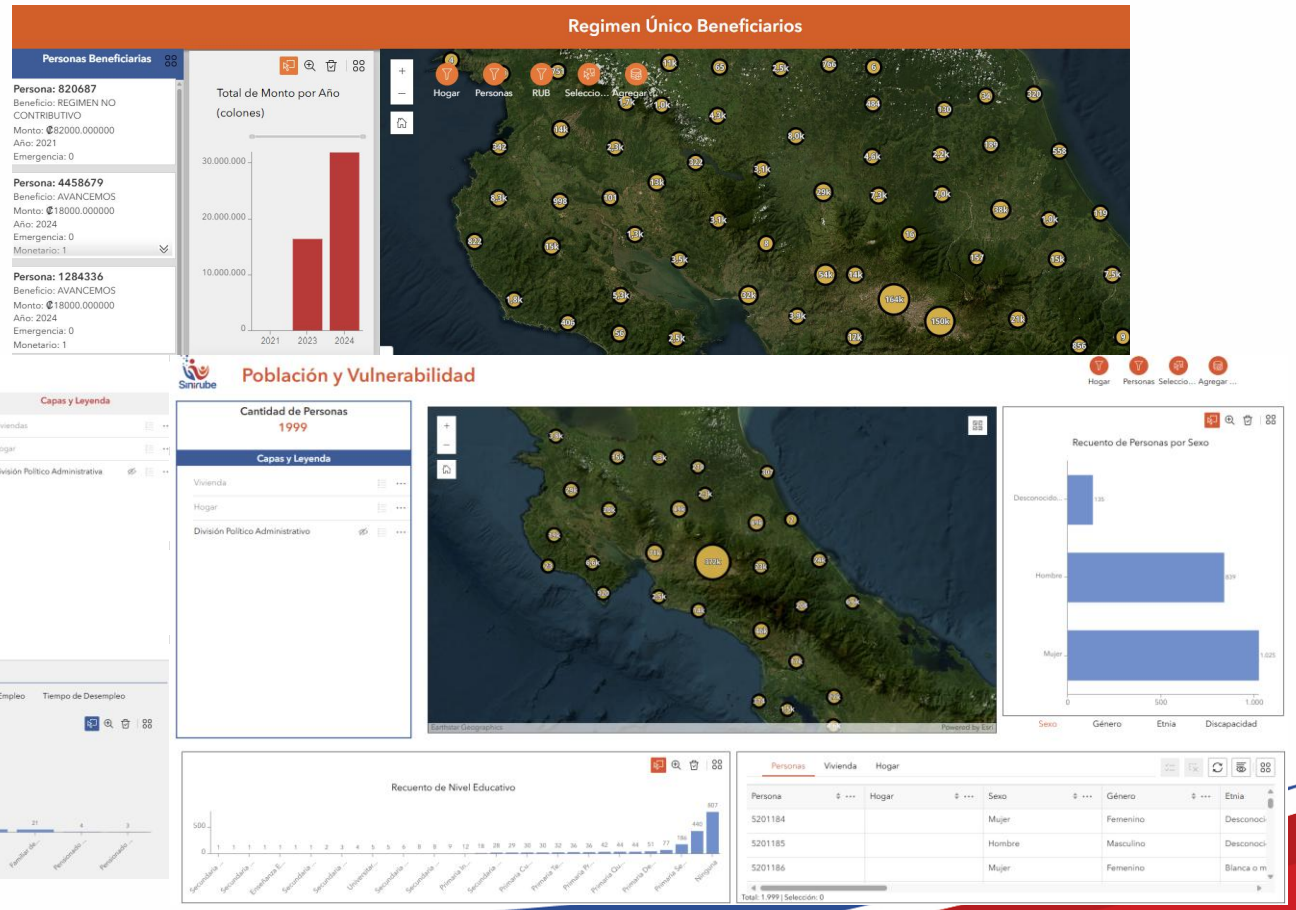


Progress: GeoSinirube 2.0

World Bank support consutancies:

1. Home and threat Dashboards (GeoSinirube 1.0)





Variables of multidimensional poverty dimensions incorporated into GeoSinirube

- **Housing**
  - Type of materials
  - Occupancy of housing
  - Tenure
  - Access to water
  - Access to electricity
  - Access to sanitation
  - Access to the internet

- **Population:**
  - Gender
  - Ethnicity
  - Age
  - Disability status
  - Female-headed households
  - Level of dependency
  - Level of education

- **Poverty levels:**
  - Household in poverty
  - Household in extreme poverty
  - Non-poor household
  - Household in vulnerability

Variables of multidimensional poverty dimensions incorporated into GeoSinirube

- **Social protection**
  - Insurance conditions
  - Teachers' pension
  - Judiciary pension
  - Treasury pension
  - Student insurance
  - Refugee insurance
  - Voluntary insurance
  - RNC pension
  - Family member of a pensioner
  - No insurance

- **Employment**
  - Formal
  - Informal
  - Unemployed

Deliverables

1. Database of georeferenced households
2. Integration of hazard zone maps provided by the CNE
3. Interfaces for interoperability with the ICE, to obtain geolocation data for households registered in Sinirube that have a NISE.
4. Interfaces for interoperability with ARESEP, to obtain geolocation data for households registered in Sinirube that have a NIS.

Deliverables

5. Updated document on interconnection protocols.
6. Shortened form for emergency care developed.
7. Agreements for interoperability with institutions signed.
8. Internal protocol for updating information.
9. Agreements with academia.
10. Contingency plan.

Discussion & Q&A

Next Webinar:

Feb 20, 2026
12:00 – 14:00 GMT

Registration via
socialprotection.org

Support the Initiative

Your input matters

- **Contribute your expertise** to our workstreams
- **Support** the process of **consensus building and harmonization of standards**
- **Spread awareness** about the initiative
- **Adopt the standards and other outputs** in your projects and share **feedback**

Forms of participation

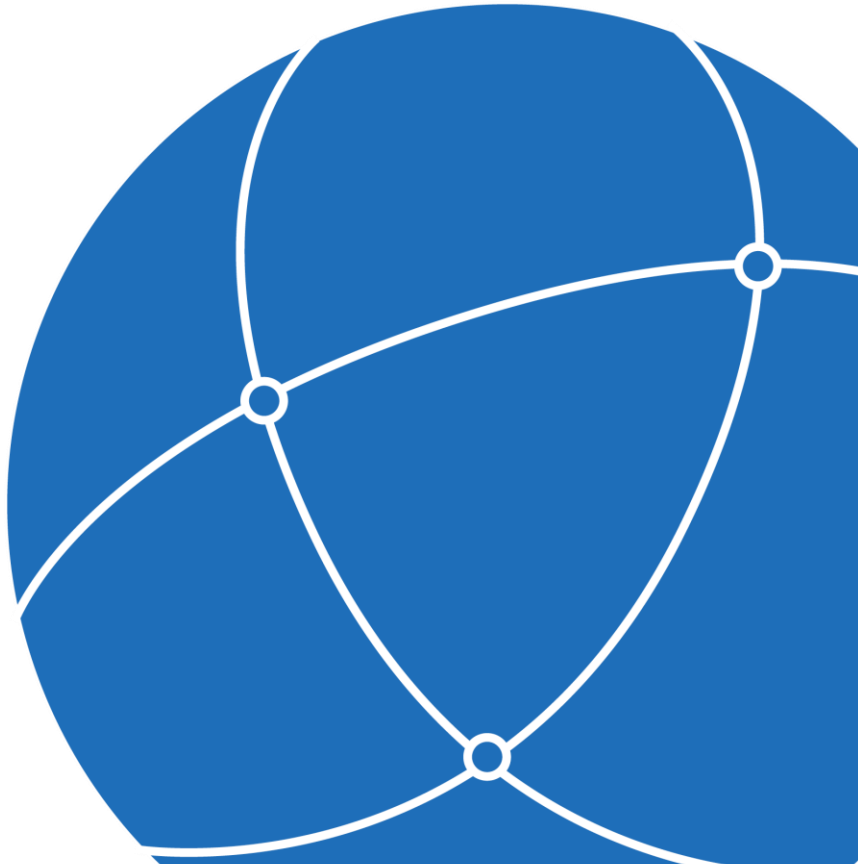
- **Share** existing **materials**
- **Review** outputs
- **Join** group **discussions** and workshops
- **Submit your draft standards** to DCI for consensus building through DCI standards committees
- **Join the standards committees**

Learn more and connect

The DCI is an **open, transparent and virtual community** which welcomes contributions from diverse stakeholders.

For more information, or to get involved:

- ✓ visit our **website**
- ✓ email us at **contact@spdci.org**
- ✓ or check us out on **LinkedIn**, **Gitbook,** and **Github**



Hosted by

socialprotection.org

know more and become a member by clicking here

Thank you