ASPIRE locally led monitoring

Tracking household resilience trajectories using the RISE resilience ladder

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About ALL ACT

ALL ACT is an initiative working to optimise existing finance, expertise and delivery mechanisms to support agile responses to loss and damage, led by communities made vulnerable by climate change.

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Cover photo: community members in Madhya Pradesh, India using the CRISP-M tool for planning watershed structures. Credit: H&K Communications/IIED

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Timely social protection support can protect communities most affected by compounding climate risks. But just linking these programmes to anticipatory action does not guarantee real-world outcomes. To close this delivery gap, we developed the ASPIRE locally led monitoring (LLM) approach. Moving from upward compliance-based monitoring to downward accountability, ASPIRE LLM empowers households to assess whether support is timely, adequate and inclusive. At its core is the RISE resilience ladder, which tracks household trajectories (progress, stagnation or slippage) across repeated shocks. Connected to a global Observatory, this locally generated evidence allows policymakers and funders to course correct delivery, ensuring climate finance builds verifiable, sustained resilience.

Contents

Figures

Tables

Abbreviations

AI	Artificial intelligence
ASPIRE	Anticipatory Social Protection Index for Resilience
CRISP-M	Climate Resilience Information System and Planning for MGNREGS
LLA	Locally led adaptation
LLM	Locally led monitoring
MGNREGS	Mahatma Gandhi National Rural Employment Guarantee Scheme
NRI	Normalised Resilience Index
RMI	Resilience Magnitude Index

Summary

Climate change is fast becoming a systemic development crisis. For communities most affected, more frequent, overlapping and compounding risks are undermining livelihoods, food security and human development. This is eroding hard-won development gains and pushing households deeper into poverty. Social protection programmes can help communities tide over these crises by providing additional support before shocks escalate. Because these programmes already have institutionalised delivery channels and are widely recognised and trusted, even modest adjustments to their design, timing and delivery can enable them to help people prepare for, cope with and recover from climate shocks. Our economic modelling reinforces this, showing that taking early, anticipatory action through social protection is significantly more cost-effective than reactive, post-disaster humanitarian responses, reducing losses and yielding a much higher benefit–cost ratio.

To help governments navigate the complexities of building these systems, we developed the Anticipatory Social Protection Index for Resilience (ASPIRE) toolkit. ASPIRE is a diagnostic toolkit designed to identify system and programme gaps and inform practical, context-specific solutions for early action. It provides a two-level assessment, evaluating national policy and systems readiness, as well as the specific design and functioning of existing social protection programmes. This helps stakeholders identify exactly where opportunities already exist and which gaps would need to be addressed through investments or reforms. Building on these diagnostics, we co-develop an ASPIRE Roadmap with country governments to sequence the technical, institutional and financial building blocks required to make early action possible at scale. However, as countries transition from planning to implementation, a critical missing link has emerged: diagnosing system readiness does not automatically guarantee that those improvements will translate into better outcomes for households.

Delivering real-world resilience depends on whether support is timely, whether it is adequate, whether people can practically access it and whether its protective effects hold up across repeated shocks. Unfortunately, conventional monitoring frameworks are ill-equipped to answer these questions. Traditional systems are heavily oriented toward upward compliance, measuring what programmes aim to deliver (such as funds disbursed or total households reached) rather than what households actually experience on the ground.

This top-down approach creates four issues: (i) performance is judged by administrative actors rather than the beneficiaries themselves, failing to capture the local realities of how support is received; (ii) standard metrics fail to capture timeliness and adequacy, which are the fundamental pillars of anticipatory action because support that arrives late cannot prevent distress coping; (iii) conventional monitoring struggles to identify exclusion; it tracks those who received support but offers no visibility into who was left behind due to documentation barriers, digital exclusion or discrimination; and (iv) current systems treat resilience as a static condition rather than a dynamic trajectory. They fail to capture whether households are moving forward, becoming stuck or sliding backwards as risks intensify. Addressing this gap requires a fundamental shift. We must measure differently by moving from upward reporting to downward accountability.

ASPIRE locally led monitoring and the RISE resilience ladder

To bridge this delivery gap, we developed the ASPIRE locally led monitoring (LLM) approach. ASPIRE LLM is a community-grounded methodology designed to track whether investments in early action and system reforms are actually resulting in sustained upward movement for households. The approach draws on operational lessons from our CRISP-M pilot for India's MGNREGS social protection system, which successfully used a 'people plus technology/AI' model to verify the functionality of resilience assets over the last mile. ASPIRE LLM adapts this logic for the broader spectrum of anticipatory social protection, treating households as the most credible assessors of what works.

The organising framework at the heart of ASPIRE LLM is the RISE resilience ladder. The ladder is designed to make household trajectories visible over time, acknowledging that resilience is a dynamic journey of progress, stagnation and slippage. It captures absorptive, adaptive and transformative dimensions of resilience across four distinct rungs:

- **R1: risk exposed:** households face high vulnerability and limited buffers, where even moderate shocks trigger distress coping and irreversible losses.
- **R2: impact absorbing:** households possess basic absorptive resilience and cope better when support is timely, but their recovery remains fragile and susceptible to compounding shocks.

- **R3: stability building:** households exhibit adaptive resilience, displaying strengthened livelihood security, faster recovery times and the ability to adjust practices as risks evolve.
- **R4: empowered:** households demonstrate transformative resilience, facing fewer structural barriers, possessing stronger agency and sustaining their gains across repeated crises.

To determine a household's position on the RISE ladder, ASPIRE LLM uses a structured but low-burden measurement approach. It relies on a minimum dataset of 18 adaptable indicators structured around the 3P framework. This framework assesses **predisposing factors** (baseline structural conditions and vulnerabilities), **precipitating factors** (the frequency of shocks and the degree of shock containment) and **protective factors** (available buffers, recovery capacity, and enabling support).

By scoring these indicators on a consistent 1 to 4 scale, the LLM approach generates a Resilience Magnitude Index (RMI), which is then normalised into a composite score that determines the household's rung on the ladder. The methodology also employs a Structural Consistency Index (SCI) to measure the quality of resilience. The SCI acts as a diagnostic flag to identify skewed or fragile development. For instance, a household might show increased income but remain highly vulnerable due to severe health deficits or social exclusion. By interpreting these scores over repeated rounds, programme managers can identify whether a household is progressing, stagnating in a low resilience equilibrium, or experiencing persistent slippage that requires immediate intervention.

Locally anchored data collection

Generating this data at scale requires a collection model that is both credible and locally anchored. ASPIRE LLM achieves this through a village facilitation layer. Local volunteers support households through the reporting process, ensuring that the monitoring itself does not replicate digital or literacy based exclusion. This human element is supported by appropriate technology. The LLM tool utilises AI enabled smart prompting, skip logic and local language translation to keep reporting brief and highly relevant.

The data is verified through precise geo-referencing. Geo-location captures coordinates to validate delivery contexts, while optional geo-tagging allows communities to attach photos or videos of damaged assets or disrupted services. To ensure ethical implementation, the system is governed by strict 'do no harm' principles, enforcing meaningful consent, robust privacy protections and escalation protocols that shield households from retaliation when reporting exclusion or institutional failures. Data is collected through routine monitoring to track long term vulnerability, supplemented by light-touch pulse reporting triggered specifically during shock periods to assess the timeliness and adequacy of anticipatory action.

The ASPIRE Observatory

Data collection is only valuable if it drives decision making. To ensure that locally generated evidence influences policy and financing, the ASPIRE LLM feeds into a multi-tiered digital architecture known as the ASPIRE Observatory. The Observatory acts as the bridge between household realities and system-level accountability, linking quantitative ladder movements with qualitative community narratives to explain exactly why patterns of slippage or stagnation are occurring.

To maintain trust and security, the Observatory utilises a role-based access model across four tiers. At the community layer, highly aggregated views support local feedback loops and social audits, proving to households that their reporting has value. At the subnational operational layer, frontline implementers use the data to troubleshoot immediate delivery bottlenecks, such as clusters of payment failures. At the national layer, government institutions leverage the insights to coordinate responses, adjust policy and trigger contingency financing. Finally, at the global layer, the Observatory supports peer learning and allows international funders to track macro-trends, align their investments and reduce parallel reporting demands.

Operationalising the future of climate finance

ASPIRE LLM represents a fundamental evolution in how the success of climate action is defined and measured. Backed by Comic Relief, the entire end-to-end approach from the ASPIRE diagnostic to the RISE ladder and the global Observatory is currently being operationalised through a national pilot in Senegal. This pilot serves as the blueprint for scaling the model to eight other countries where the ASPIRE diagnostic has been conducted — and then to other vulnerable countries.

Operationalising this approach requires a shift in how institutions behave. Funders must align behind shared, locally led evidence streams rather than fragmented compliance exercises. Governments must embed this evidence into their disaster risk management and social protection frameworks. By committing to an LLM approach, the global community can finally ensure that climate finance and early action investments translate into verifiable, sustained and structurally sound resilience for the people who need it most.

Why locally led monitoring is important for delivering effective resilience

Climate change is rapidly undermining livelihoods, food security and human development, eroding hard-won gains and pushing households deeper into poverty. Social protection programmes can help communities tide over these crises by providing additional support before shocks escalate, including through anticipatory and shock-responsive mechanisms. But without a way to track the timeliness of the support received and communities' experiences of accessing it, even well-designed programmes can fall short of building true resilience.

1

1.1 Anticipatory social protection for building resilience

Social protection programmes have long been central to national development strategies for reducing poverty, addressing inequality and promoting inclusive growth. Today, nearly 45% of the global population is covered by at least one form of social protection.[1]

Because social protection programmes already have institutionalised delivery channels and are widely recognised and trusted, even modest adjustments to design, timing and delivery can enable them to help people prepare for, cope with and recover from climate shocks and generate major resilience gains.

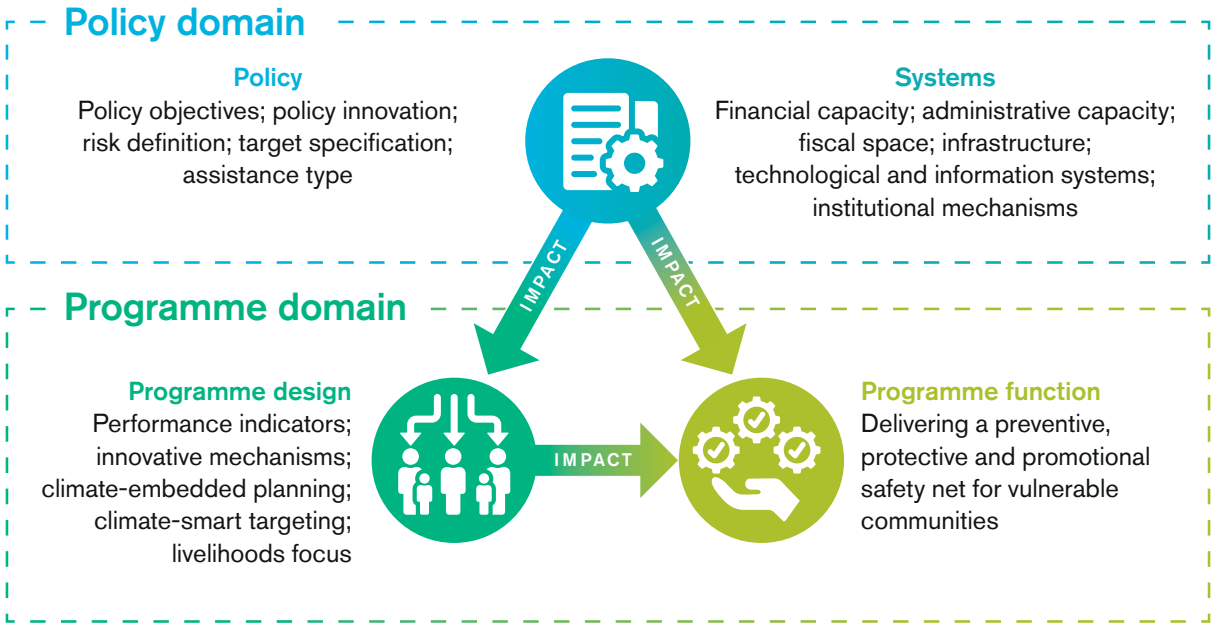
Evidence from countries such as Kenya,[2] Ethiopia[3] and Bangladesh[4] suggests that social protection can help households maintain consumption and protect productive assets during severe climate shocks. Yet, despite this evidence, many countries still face challenges in scaling anticipatory support during crises. One reason is that all countries do not start from the same place. Climate risks differ significantly by geography and hazard type (drought, sea-level rise, flash floods, cyclones and heatwaves), and so do the vulnerabilities of different communities. Social protection systems also vary widely in coverage, comprehensiveness and institutional maturity. Some countries have robust national programmes, digital registries and financial infrastructure that can be rapidly scaled up during a shock. Others are still building basic systems, with limited coverage and weak administrative capacity.

To support governments and partners to navigate these differences, we developed the Anticipatory Social Protection Index for Resilience (ASPIRE)[5] toolkit (more details on the ASPIRE toolkit and how to use it can be found at www.iied.org/21901iied). ASPIRE is a diagnostic toolkit designed to identify system and programme gaps and inform practical, context-specific solutions to strengthen anticipatory and shock-responsive social protection and build resilience over the longer term.

ASPIRE provides a two-level diagnostic (see Figure 1): it assesses national policy and systems readiness, and the design and functioning of specific social protection programmes. This helps stakeholders identify where key building blocks for early action are in place, and where investments and reforms are needed.

We applied ASPIRE toolkit across nine countries (Bangladesh, Brazil, Ethiopia, Ghana, India, Malawi, Pakistan, Senegal and Uganda) and 27 social protection programmes[6] to assess readiness and understand where support would be needed to enable anticipatory or early action. We also developed the economic case for early action through social protection programmes in these countries. Our economic modelling[7] shows that, in severe (1 in 20 year) shocks, existing social protection mitigates only around 2% of losses. The modelling further demonstrates that taking early action through social protection is significantly more cost effective

Figure 1. Policy and programme levels of assessment under ASPIRE



Source: Bharadwaj et al., 2023

than reactive, post-disaster responses. Humanitarian response can reduce losses to about 59%, while anticipatory direct benefit transfers can reduce losses to 42% and early resilience investments to 27%. The corresponding benefit–cost ratios are 0.23 (existing social protection), 0.83 (humanitarian response), 2.06 (anticipatory direct benefit transfers) and 5.17 (resilience building investments).

Building on the insights from ASPIRE assessments, we are now supporting countries to design and deliver anticipatory responses through their existing social protection programmes. To provide the technical and financial assistance needed for this, we are working with country governments to co-develop an ASPIRE Roadmap. This process is designed to co-identify the technical, institutional and financial building blocks required for early action at scale. It is a country-led, deliberative process that brings together technical agencies, implementers, civil society, insurance companies and funders to identify current gaps and opportunities. Specifically, the Roadmap establishes a phased pathway for: (i) strengthening policy and legal frameworks; (ii) improving delivery systems such as registries and payment mechanisms; (iii) refining trigger-based programme design; and (iv) designing a risk-layering financing strategy that blends public resources, risk-transfer instruments and climate finance. With support from Comic Relief, this end to end approach is now being operationalised, starting with a national pilot in Senegal that has secured high level government buy in, serving as a blueprint for scaling up the model to other ASPIRE countries.

1.2 Closing the delivery gap: why we need locally led monitoring

As we applied the ASPIRE toolkit and engaged with governments and country stakeholders through the Roadmap process, an important priority area emerged. Alongside diagnosing readiness, partners also highlighted the need for a practical way to understand whether early action is actually working for households over time.

While the ASPIRE toolkit provides a structured way to identify what needs to change across policy, systems and programme design to enable early action, the readiness improvements do not automatically translate into improved outcomes for households. Delivering resilience depends on whether support is timely and adequate, whether people can access it in practice and whether performance holds over repeated shocks, beyond one-off events. This becomes even more important as governments strengthen anticipatory delivery, where timing, targeting and reliability are central to effectiveness.

Yet most monitoring frameworks remain oriented toward what programmes aim to deliver, not what households experience. They rely heavily on standard templates and aggregated reporting, which can miss exclusion, delays, adequacy gaps and how conditions shift over time. As a result, even where systems appear to be functioning, the most important questions for resilience often remain unanswered. This is the missing link in anticipatory social protection delivery.

Four gaps in existing monitoring approaches that are important to address:

1.2.1 Performance is often judged by those the support was not designed for

A major weakness in existing monitoring frameworks is who is doing the assessment. Whether a programme has met its objectives is typically judged through administrative reporting, periodic evaluations or external monitoring formats. These are useful, but they are often produced by actors for whom the support was not intended.

For anticipatory and shock-responsive social protection, this creates a blind spot. The people best placed to judge whether anticipatory support is effective are the beneficiaries themselves. They know first-hand whether support arrived when it mattered, whether it was usable and whether it helped avoid harmful coping. Monitoring, therefore, needs to treat households as credible assessors of what is working in practice.

1.2.2 Timeliness and adequacy of support

Conventional monitoring typically records whether transfers were made, how much was disbursed and how many households were reached. These measures are valuable but they do not consistently capture whether support arrived early enough to prevent avoidable losses, or whether benefit levels were adequate relative to household needs and the severity of the shock.

For anticipatory social protection, timing matters because early action is meant to prevent harm. When support arrives late, households may already have taken distress decisions that are hard to reverse. Monitoring that does not address these factors will struggle to assess whether anticipatory support is doing what it is intended to do.

1.2.3 Access, inclusion and exclusion

A further limitation is that monitoring often focuses on those who received support, with limited visibility for those who did not and why not. Exclusion is shaped by barriers such as lack of documentation, mobility constraints, discrimination, digital exclusion, language barriers, lack of information or social norms

that prevent women and marginalised groups from accessing entitlements. These barriers can be invisible within administrative systems but highly visible within communities. Without locally generated evidence, patterns of exclusion can go unnoticed and households most at risk may repeatedly miss out on the support intended to protect them.

1.2.4 Progress, stagnation and slippage over time

Resilience-building is a dynamic process. Households may strengthen their capacity gradually, but they can also fail to progress or slip backwards if shocks recur before recovery is complete, hazards intensify or climate stress compounds with other pressures such as food price inflation, ill health, debt, conflict or displacement.

Many monitoring systems operate as if conditions are stable. They rely on periodic reporting that often arrives too late to influence delivery adjustments when they matter most and they rarely capture trajectories — in other words, whether households are moving forward, becoming stuck or sliding back due to repeated shocks.

This is why the monitoring gap cannot be addressed simply by measuring better. It requires measuring differently, in a way that reflects how households experience risk and recovery over time.

To respond to this need, we have developed the ASPIRE LLM approach, a community-grounded way to track whether improvements in systems and programme design are translating into better household outcomes as risks intensify and compound.

The ASPIRE LLM approach draws on operational lessons from our earlier piloting of LLM through the CRISP-M[8] 'Climate Saathi' model[9] with India's Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), which was subsequently taken forward at scale by the Government of India. The CRISP-M model was designed to address last mile delivery and transparency challenges by moving monitoring beyond a top-down reporting exercise. It introduced a community led verification layer where a network of village volunteers (mostly women) used a mobile application to visit worksites, upload geo-referenced photos and flag maintenance issues in real-time. This 'people plus technology' approach allowed communities to verify reported progress against ground realities and ensure that resilience assets, such as check dams or ponds, remained functional.

ASPIRE LLM builds on these insights to make it work for anticipatory and shock-responsive social protection, and is designed to be globally adaptable. By embedding these community feedback loops into the ASPIRE Roadmap, governments can ensure that investments in early action, actually result in sustained upward movement for households on the resilience ladder. The rationale, design features and approach behind the ASPIRE LLM are set out in Section 2.

1.3 Why LLM matters for locally led adaptation and loss and damage

The relevance of LLM goes beyond social protection programmes. It can also strengthen how locally led adaptation (LLA) is implemented on the ground and how loss and damage is tracked, prioritised and responded to.

The effectiveness of LLA depends on whether adaptation choices reflect local realities and priorities, whether resources reach the people most affected and whether interventions reduce vulnerability in ways communities recognise as meaningful. In many contexts, evidence from communities continues to be gathered through occasional consultations or short-term evaluations, while decisions on planning and funding are made higher up. This can create a disconnect between what programmes report and what households experience. An LLM approach can help close this gap by empowering households to act as the primary sources of evidence and creating stronger feedback loops so that communities can see how their evidence influences decisions.

The same issues arise in loss and damage response. Loss and damage is experienced locally through lost assets and livelihoods, displacement, health impacts and non-economic losses, such as mental health impacts and loss of cultural practices. A persistent challenge in getting funding for the loss and damage being actually suffered by the community is the lack of regular and credible evidence that captures what is happening on the ground, where needs remain unmet, and where losses become harder to reverse because support arrives late or does not reach particular groups. Monitoring grounded in household experience can help document these realities and show where residual losses continue to accumulate over time.

This also matters for coordination and financing. LLA and loss and damage responses are often delivered through multiple programmes and actors operating in the same places. Without evidence that is comparable over time and across locations, it is difficult to see where interventions are complementing each other to create stronger outcomes. Establishing this evidence base is a key objective of ASPIRE LLM, which seeks to align various support mechanisms and financing streams behind a single, community verified assessment of resilience. The LLM approach, explained in detail in Section 2, provides the practical methodology for generating this evidence and making these household level outcomes visible to decision makers.

ASPIRE LLM: what it is and how it works

In this section, we set out the ASPIRE LLM approach and how it is designed to operate in practice. We explain how LLM complements the ASPIRE diagnostic tool by expanding the focus from system and programme readiness to assessing what households actually experience. This transition is the core component of the operational phase of the ASPIRE Roadmap, moving from the identification of national level building blocks to the delivery and monitoring of outcomes at the household level.

2

We introduce the RISE resilience ladder as the organising framework for tracking household trajectories over time. We outline what the ladder comprises, how it is measured through a minimum indicator set and how movement is interpreted across repeated rounds of monitoring. We also describe how the data can be generated through low-burden community reporting, drawing on operational learning from CRISP-M and the Climate Saathi model implemented with India's MGNREGS, and adapting that implementation logic for social protection and resilience outcomes. We then set out how geo-tagging and basic verification can strengthen credibility, and how technology and artificial intelligence (AI)-supported features can reduce the reporting burden and improve consistency, while keeping the approach simple and usable for communities and implementers.

2.1 What ASPIRE LLM is and what it adds to ASPIRE diagnostic work

The ASPIRE diagnostic tool helps countries and partners assess readiness across policy, systems and programme design, and identify what needs to change to enable anticipatory action. But the assessment cannot show whether those changes are translating into better outcomes for households once programmes are under stress and whether households are actually strengthening their resilience over time.

ASPIRE LLM fills this gap by sitting alongside the ASPIRE diagnostic tool to provide a practical way to track how anticipatory social protection is working at the household level. In simple terms, ASPIRE helps identify what needs strengthening to deliver early action and LLM helps track whether that strengthening is working in practice and where course correction is needed as risks intensify and compound.

LLM is shaped by three design choices. First, it is locally led. Households and communities are treated as credible assessors of what is working on the ground, because they are best placed to report what was received, when it was received, what barriers were faced and whether support helped avoid harmful coping and recover faster. Second, it is low-burden by design. LLM relies on a minimum set of questions that can be answered quickly and repeated over time, with optional inputs only where they clearly add value. This keeps monitoring feasible during periods of climate stress and reduces the risk that participation is limited to households with higher literacy, better mobile phone access or more digital confidence. Third, it is useful for decision making. LLM focuses on a small set of signals that implementers, programme managers and policymakers can act on, and links these signals to geography so patterns can be seen at subnational and programme-level and tracked over time.

The indicators that LLM tracks are aligned to how ASPIRE frames early action through social protection with two interlinked pathways (see Figure 2, page 13).

The first pathway is anticipatory support (cash, food or in-kind assistance) delivered before shocks, so households can take protective action before losses escalate. The second pathway is early resilience investments (measures such as public works, assets, employment and service-related support) that reduce vulnerability over time. In practical terms, LLM is designed to assess: (i) whether anticipatory support is reaching households early enough and at an adequate level to prevent harmful coping; and (ii) whether resilience-building measures are relevant, functional over time and actually reducing risk for households.

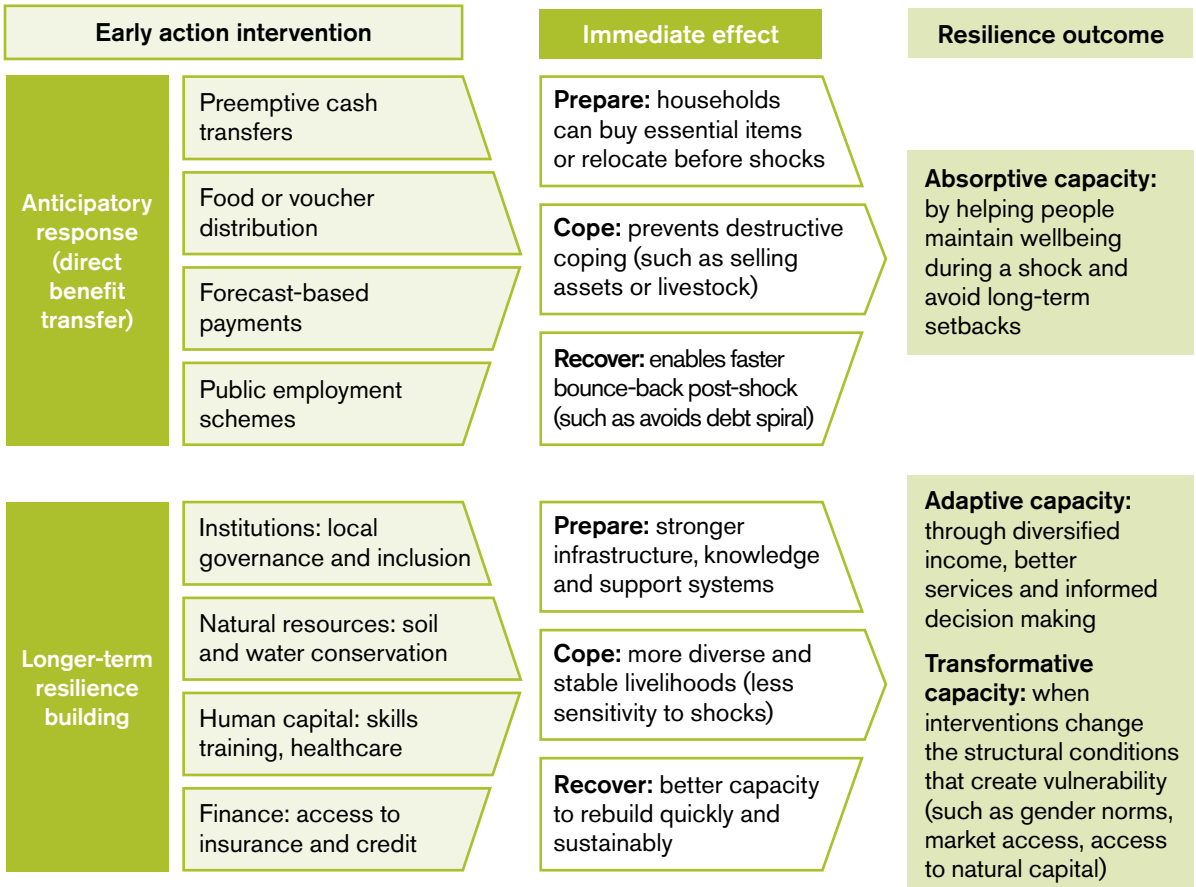
While the ASPIRE toolkit provides the diagnostic starting point, the ASPIRE Roadmap provides the bridge to implementation by sequencing the technical and financial reforms needed to make early action possible. By establishing the necessary policy frameworks, delivery systems and risk financing strategies first, the Roadmap ensures that the essential building blocks to deliver resilience are functional. LLM when deployed after that would serve as the vital final link in the chain, with a system to verify that these investments and reforms are translating into real-world progress and strengthening household resilience trajectories over time.

2.2 The RISE resilience ladder

The RISE resilience ladder is the organising framework for ASPIRE LLM. The name signifies the household's journey across four distinct rungs of the ladder: **risk exposed** (R1), **impact absorbing** (R2), **stability building** (R3) and **empowered** (R4). It provides a way to track whether households are moving forward, remaining stuck, or slipping back as climate risks intensify and compound. The purpose is to make household trajectories visible over time, so programmes can learn, adjust delivery and strengthen outcomes.

The ladder captures three patterns of change that matter for resilience. 'Progress' is when households strengthen their ability to manage shocks without resorting to harmful coping strategies and can sustain improvements over time. 'Stagnation' is when households remain at the same vulnerability level even when programmes are in place, often because support is irregular, not adequate, difficult to access or because resilience investments are not reducing the risks people are actually facing. 'Slippage' is when households drop to a lower rung because shocks recur before recovery is complete, hazards intensify or climate stress compounds with other pressures such as food price spikes, ill health, debt, conflict or displacement. Such 'up and down'

Figure 2. Pathways to resilience through early action intervention in social protection programmes



Source: Bharadwaj et al., 2025

movement is a common reality in climate-affected settings. The ladder allows monitoring to reflect that reality, rather than treating resilience as a one-off status.

Household movement on the ladder reflects the interaction of three factors: starting conditions (assets, livelihood security, services and inclusion), the intensity and frequency of shocks, and the support households can access in time, through anticipatory transfers and longer-term resilience investments. This is where anticipatory social protection becomes important. Timely and adequate transfers can prevent temporary shocks from becoming irreversible setbacks. Resilience investments, including public works and service-linked measures, can reduce exposure and strengthen livelihoods so that the next shock has a smaller impact. By tracking these interactions, the RISE resilience ladder serves as the primary technical tool within the ASPIRE Roadmap for measuring whether the phased investments in national systems are translating into sustained resilience at the local level.

Programmes such as India's MGNREGS illustrate how these pathways can reinforce each other in practice. The programme provides predictable cash support through employment during stress periods alongside community assets (for example, water conservation and land restoration works) that reduce vulnerability over time.[10,11] In our framing, these combined effects are what the ladder is intended to capture.

The ladder also translates resilience outcomes into observable signals grounded in household experience. At the lower rungs, limited buffers mean shocks quickly translate into distress coping and losses. As households move upwards, absorptive resilience tends to show up first, in other words, the ability to cope without harmful coping. Over time, adaptive resilience becomes clearer through preparedness, faster recovery and more stable or diversified livelihoods. Transformative resilience is reflected in reduced structural barriers, stronger agency and more predictable, fair and accessible support. The ladder, therefore, captures absorptive, adaptive and transformative dimensions, but does so through a trajectory lens.

In practical terms, the ladder has four rungs (see Figure 3), each reflecting a distinct resilience threshold:

- **R1: risk-exposed:** households face high exposure and vulnerability, with limited buffers. Even moderate shocks can trigger distress coping and losses that are hard to reverse.
- **R2: impact absorbing (absorptive resilience):** households cope better when shocks hit, particularly when support is timely and adequate. They are more able to maintain basic consumption and protect key assets, but remain at risk of slipping when shocks recur, intensify or compound.
- **R3: stability building (adaptive resilience):** Households strengthen livelihood security and buffers over time. They recover faster, make more forward-looking decisions and adjust practices as risks evolve. Resilience investments and services begin to translate into more sustained reductions in vulnerability.
- **R4: empowered (transformative resilience):** households face fewer structural barriers and have stronger agency, voice and options. Support systems are more predictable and accessible, and resilience gains are sustained across repeated shocks. Over time, this is reflected in reduced exclusion, stronger inclusion and improved ability to influence decisions that affect risk and wellbeing.

These rungs will help track household movement over time and assess whether anticipatory social protection is reducing vulnerability in a sustained way.

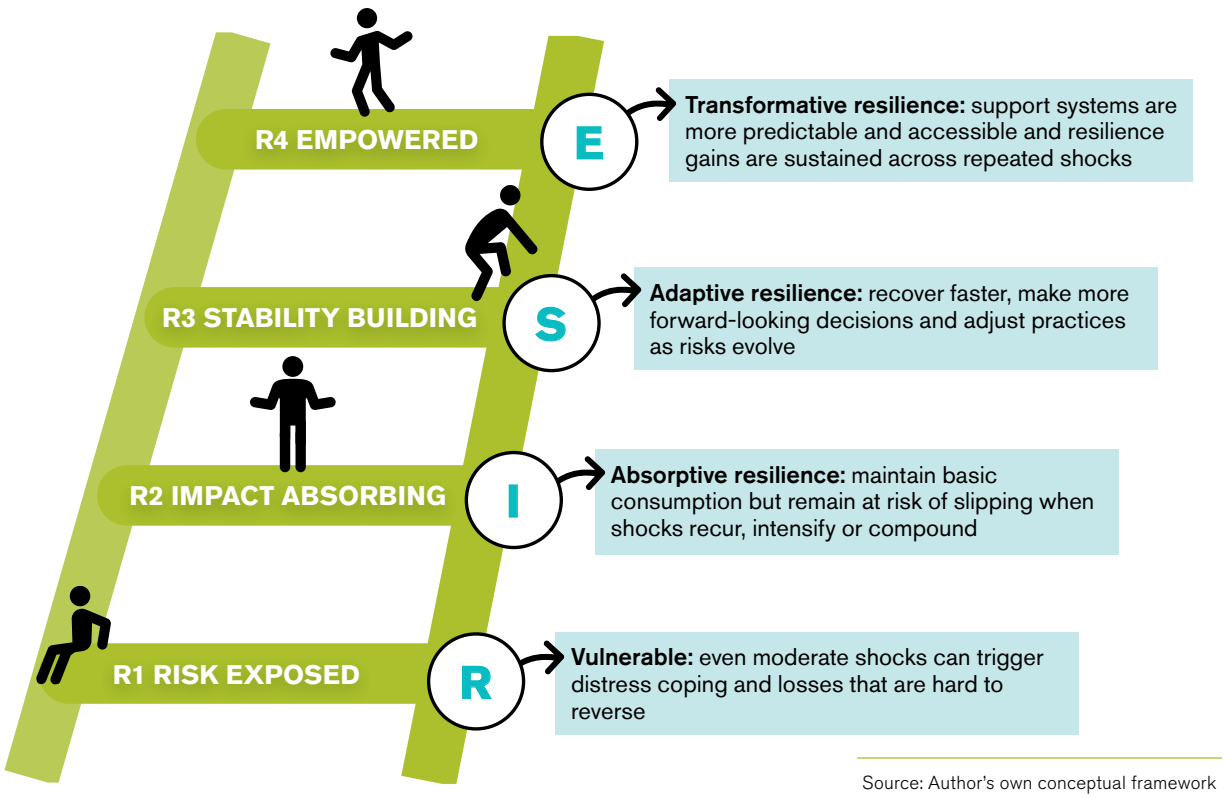
2.3 How the ladder is measured: indicators, scoring and calculation

This section sets out the measurement approach behind the RISE resilience ladder The RISE approach to measurement is simple enough to operationalise, but rigorous enough to be comparable over time. The design translates household reported information into a small set of scores aligned to the four rungs of the ladder (R1–R4) and the scoring can be repeated at regular intervals. This will make it possible to track progress, stagnation and slippage across reporting rounds, and to use the evidence for course correction, both during shock periods and in routine monitoring. We provide more detail on the assessment approach and methodology in Appendix 1.

2.3.1 The indicator set: minimum dataset

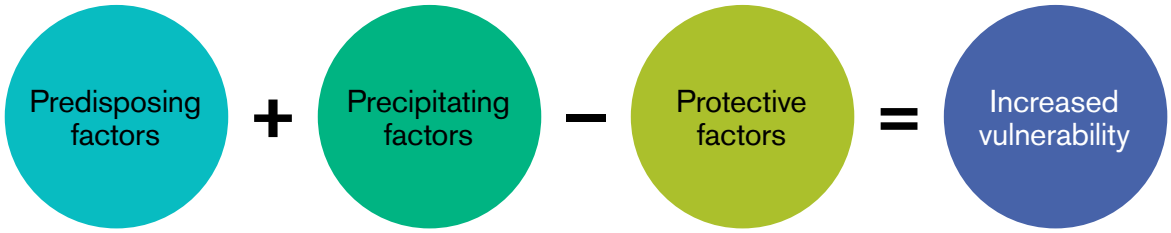
We have built the resilience ladder from a minimum household dataset of 18 indicators, structured around the 3P framework: Predisposing, Precipitating and Protective factors.[12] We use this structure because it reflects what shapes resilience in practice.

Figure 3. The RISE resilience ladder (R1–R4): household trajectories from risk exposure to transformative resilience



Source: Author's own conceptual framework

Figure 4. Interaction of predisposing, precipitating and protective factors



Source: Bharadwaj et al., 2024

- Predisposing factors describe the household's starting conditions and underlying vulnerabilities.
- Precipitating factors capture the shocks and stressors that push households down or keep them stuck.
- Protective factors capture the buffers, support and capacities that help households absorb impacts, recover and strengthen resilience over time (Figure 4).

We have proposed this 18-indicator minimum dataset based on our field research and operational experience across multiple country contexts (including Asia, Africa and Small Island States in the Pacific and Caribbean). At the same time, we recognise that contexts will differ.

The indicator set is therefore designed to be adaptable: countries and partners can modify or replace indicators that do not fit the local reality or add a small number of context-specific indicators, while keeping the overall structure stable enough to track change over time. This adaptability is a key feature of the ASPIRE LLM, allowing the national pilot in Senegal to refine the indicators to fit local livelihoods before scaling to other contexts.

The indicator set is deliberately kept to a manageable number so it can be collected quickly and repeatedly across monitoring rounds, including during or soon after a shock. As presented in Tables 1 to 3, the minimum dataset covers:

A. Predisposing factors (baseline structural conditions)

These indicators capture underlying vulnerabilities and starting conditions.

Table 1. Indicator set for capturing predisposing factors

Code	Indicator	What it captures (practical intent)
P1	Income stability	Whether income is regular/predictable or fragile/irregular
P2	Housing structure safety	Whether housing is hazard-resistant/safe versus high risk
P3	Access to healthcare	Whether healthcare is accessible and affordable in practice
P4	Education/skills (main earner)	The education/skills base shaping livelihood options
P5	Social exclusion/marginalisation	Persistent barriers linked to identity/remoteness
P6	Chronic debt burden	Whether debt is manageable versus chronic/high stress

B. Precipitating factors (recent shocks and shock containment)

These indicators capture recent shocks and whether losses were contained or escalated, using a defined recall period (for example, the last 12 months).

Table 2. Indicator set for capturing precipitating factors

Code	Indicator (recall period)	What it captures (practical intent)
Pr1	Climate shock frequency/severity	Whether shocks were frequent/severe or limited
Pr2	Livelihood loss due to shock	Whether disruption was major/prolonged or contained
Pr3	Major illness/disability shock	Whether health shocks created major disruption/costs
Pr4	Displacement	Whether displacement was repeated/permanent or did not occur
Pr5	House/land damage	Whether damage was major/destructive or minor/did not occur
Pr6	Food insecurity during/post shock	Whether there was chronic food stress or whether the household remained food secure

C. Protective factors (buffers, recovery capacity and enabling support)

These indicators capture buffers and enabling support systems.

Table 3. Indicator set for capturing protective factors available to community

Code	Indicator	What it captures (practical intent)
Prt1	Livelihood diversification	Whether livelihoods are single/fragile or diversified
Prt2	Savings/insurance/financial buffer	Whether the household has a usable financial buffer during shocks
Prt3	Social support networks	Whether networks are weak or strong and reliable
Prt4	Social protection access (schemes)	Whether access is partial/irregular or full/reliable
Prt5	Risk awareness and early warning use	Whether warnings are received/understood/acted on
Prt6	Collective participation	Whether households participate in groups/collectives

These indicators capture underlying vulnerabilities and starting conditions.

The indicator set is intended to function as a minimum dataset. It does not try to measure everything. It focuses on the household-level signals that most consistently explain resilience level and movement, and that can realistically be collected at scale without imposing a reporting burden. The set is also designed to remain stable across monitoring rounds, so that observed shifts reflect real movement rather than changes in measurement.

To keep the assessment comparable across locations while still allowing for context, ASPIRE LLM can include a small number of optional add-on indicators where necessary (for example, heat stress, coastal risks, pastoral mobility constraints or urban service disruption). Where additional indicators are used, they should be treated as contextual diagnostics unless explicitly integrated into the ladder score.

2.3.2 Scoring approach and what the scores mean

All 18 indicators are scored on a standard 1–4 ordinal scale. This simple scale is designed to facilitate low-burden household reporting (direct or assisted) while remaining consistent enough for aggregation and comparison over time. A core design choice is that indicators are scored as strengths: a higher score always indicates stronger resilience capacity, while a lower score indicates higher vulnerability. This avoids confusion when scores are combined across domains. We have set out the meaning of each score in Table 4.

This scoring pattern is applied across the three indicator groups, with each indicator using locally relevant descriptors. For example, income stability ranges from daily/irregular income (score 1) to regular and diversified income (score 4). Food insecurity ranges from chronic meal skipping (score 1) to being food secure (score 4). Social protection access ranges from being excluded (score 1) to full and reliable access (score 4).

Two points are worth highlighting in how scoring is applied:

1. **Precipitating factors are scored based on shock containment:** some indicators in the precipitating domain relate to shocks and losses. To keep scoring direction consistent, we score these indicators based on whether the household experienced severe and repeated losses versus limited or no losses within a defined recall period. A higher precipitating score, therefore, reflects better shock containment (lower disruption), not higher exposure.
2. **Anchors are designed for low-burden reporting:** indicators are framed around practical, observable situations. This ensures that the scoring reference remains feasible and consistent for community facilitators, regardless of local literacy levels.

This will function as the scoring reference for the tool and can be used to support consistent application across communities and monitoring rounds.

Table 4. Common scoring anchors used across the ASPIRE LLM indicator set

Score	Meaning (common interpretation)	What this would capture on the ground
1	Weakest condition/highest vulnerability	Severe deficit, repeated harmful coping, major barriers; shocks translate quickly into losses
2	Low strength/ fragile	Some capacity, but unstable; high risk of slippage during shocks
3	Moderate strength/basic stability	Basic buffers and partial stability; better able to cope and recover
4	Strongest condition/lowest vulnerability	Strong buffers/options; low barriers; better able to sustain gains across shocks

2.3.3 Aggregation method: how scores roll up to ladder status

The following aggregation method uses statistical analysis familiar to government statistics departments to ensure that household-level signals are converted into rigorous, comparable scores.

Once the 18 indicators are scored (1–4), the next step is to convert those scores into a ladder position in a way that is transparent and comparable across time and location. We propose doing this in three stages: (i) compute a domain score for each of the 3P factors; (ii) normalise the domain scores to a 0–10 scale using fixed benchmarks; and (iii) combine them into a single composite score that determines the ladder rung, as set out in the following:

Step 1. Construct the three domain score vectors (3P scores)

Each household H has three sets of six indicator scores, one for each domain:

- Predisposing scores: V_H^P
- Precipitating scores: V_H^{Pr}
- Protective scores: V_H^{Prt}

Each vector contains six values, each value taking an integer score from 1 to 4.

Step 2. Compute a domain magnitude score (RMI) for each 3P group

For each domain, we compute a Resilience Magnitude Index (RMI) using the Euclidean norm (the square root of the sum of squared indicator scores) to summarise the combined strength of the six indicators in each domain:

$$RMI_k = \| V_H^k = \| \sqrt{\sum_{i=1}^{6} x_i^2} \quad k \in \{P, Pr, Prt\}$$

This is a compact way to capture the cumulative strength within each domain: higher values mean the household has stronger conditions or buffers in that domain.

Step 3. Normalise each domain magnitude to a 0–10 scale (Group NRI)

To make scores comparable across contexts and across monitoring rounds, we normalise using fixed theoretical benchmarks rather than sample-dependent ranges.

- Lower benchmark: all indicators = 1

$$\| V_{min} \| = \sqrt{6}$$

- Upper benchmark: all indicators = 4

$$\| V_{max} \| = \sqrt{96}$$

Each domain RMI is then converted to a Group Normalised Resilience Index (NRI) NRI_k on a 0–10 scale:

$$NRI_k = \frac{RMI_k - \sqrt{6}}{\sqrt{96} - \sqrt{6}} \times 10$$

This normalisation ensures that the scores stay aligned to the ladder thresholds over time and do not shift simply because the sample composition changes.

Step 4. Compute the Composite NRI (0–10)

The overall household resilience score is then computed as a weighted average of the three group NRIs. In the baseline specification, we apply equal weights:

$$Composite \quad NRI \frac{NRI_P + NRI_{Pr} + NRI_{Prt}}{3}$$

If weights are adjusted in a specific country context, the weighting scheme should be reported transparently and applied consistently across monitoring rounds.

Step 5. Translate the Composite NRI into ladder rungs (R1–R4)

Households are classified into one of the four rungs based on the Composite NRI score. We use the following threshold bands (Table 5):

Table 5. Ladder classification thresholds based on Composite NRI (0–10)

Composite NRI	Ladder rung	Interpretation
0.0–2.5	R1: risk exposed	Weak baseline, high exposure, minimal protection
>2.6–5.0	R2: impact absorbing (absorptive resilience)	Partial strengths; coping possible but recovery remains fragile
>5.1–7.5	R3: stability building (adaptive resilience)	Stable baseline; shocks buffered; recovery and adjustment improving
>7.6–10.0	R4: empowered (transformative resilience)	Strong and sustained resilience capacity; low barriers; greater agency

These thresholds provide an operational basis for classification and for tracking movement over time. However, rung criteria should not be treated as purely technical cut-offs. We have provided a consistent set of thresholds and descriptors to guide implementation; however, in different contexts, rung interpretation (and, where necessary, threshold calibration) should be validated through participatory community consultation

and reflection with local practitioners. This is important both for legitimacy and for accuracy: communities and frontline teams are often best placed to confirm whether rung placement aligns with lived realities.

In addition to the Composite NRI (which captures the household's 'vertical' position on the ladder), our method also includes a Structural Consistency Index (SCI) that checks the 'quality' of resilience. It measures whether resilience gains are balanced across domains or skewed toward a narrow set of strengths. This is useful for identifying fragile progress and maladaptive patterns.

To measure the 'quality' of resilience, the SCI uses cosine similarity to compare the household vector against a balanced 'ideal' path.

The SCI is computed as the cosine similarity between:

- the observed household vector $\mathrm{V_H}$, and
- an ideal balanced trajectory vector $\mathrm{V_{ideal}}$

$$SCI = \cos(\theta) = \frac{\mathrm{V_H} \cdot \mathrm{V_{ideal}}}{\| \mathrm{V_H} \| \ \| \mathrm{V_{ideal}} \|}$$

A SCI score near 1 indicates that the household is progressing evenly across all domains (for example, gains in income are matched by gains in health and community influence). A lower SCI indicates 'skewed development', in which a household may have high income but remains vulnerable due to low human or agency capital.

SCI range	Interpretation
≥ 0.95	Strongly balanced resilience
0.90–0.94	Mild structural gaps
0.80–0.89	Moderate imbalance
< 0.80	High skew/maladaptive resilience

The SCI calculation and interpretation ranges are provided in Appendix 1 and can be used as a diagnostic flag.

2.3.4 Interpretation: what constitutes movement, in other words progress, stagnation or slippage, over time

The resilience ladder is designed for repeated measurement so that household trajectories can be tracked over time. Movement is interpreted through changes in the household's Composite NRI (and, where used, the SCI diagnostic) over successive reporting rounds. The aim is to generate evidence that is useful for learning for future programme planning by understanding: not only whether a household is improving, but whether gains are holding under stress, or where slippage is occurring, and what might be driving it.

We propose four practical signals for interpreting change over time.

1. Upward movement (progress)

Progress is recorded when a household moves from a lower rung to a higher rung based on the Composite NRI thresholds in Table 5. It can also be recorded when the household remains on the same rung but shows a sustained increase in Composite NRI across consecutive rounds, indicating strengthening resilience within that rung.

To avoid over-interpreting small fluctuations, we recommend defining a minimum meaningful change threshold during piloting (for example, a change of 0.5 on the 0–10 scale).

2. Downward movement (slippage)

Slippage is recorded when a household drops to a lower rung or shows a sharp decline in Composite NRI following a shock period. In contexts where climate impacts are frequent, a single drop may not be unusual. What matters is whether slippage becomes repeated or persistent, suggesting that households are not fully recovering before the next shock, or that support is not timely or adequate enough to prevent avoidable losses.

When repeated slippage concentrates in particular locations or groups, it becomes a strong signal for course correction. This should prompt a review of the underlying problems of these groups. Once identified, the response could involve improving early-warning triggers, removing access barriers, improving payment reliability or strengthening complementary resilience investments.

3. Stagnation

Stagnation is recorded when a household remains on the same rung with minimal change in Composite NRI across multiple rounds. This can reflect two different realities. In some cases, it may reflect a stable but low-resilience equilibrium. Households may be coping

but not moving beyond a vulnerability threshold. In other cases, stagnation may indicate that programmes are reaching households, but not in ways that create sustained gains (for example, transfers that are too small or too irregular, or investments that do not reduce the risks households face).

Identifying stagnation is important because it highlights the limits of coverage indicators: programmes may appear to be functioning, while household outcomes remain stuck.

4. Fragile progress and uneven movement (using the SCI diagnostic)

SCI provides an additional interpretation lens. A household may show improvement on the Composite NRI while remaining structurally weak in one domain (for example, stronger protective buffers but persistent baseline deficits, or improved baseline conditions but weak shock containment). In those cases, progress may be fragile and slippage may still occur when shocks intensify or compound. This should be treated as a diagnostic flag. A household can be recorded as showing fragile progress when the Composite NRI improves, but the SCI remains low or declines. Our method of combining the RMI and SCI, is conceptually supported by hybrid similarity metrics such as the Joint Distance Measure.[13]

It should also be noted that while the ladder is designed around a minimum structured dataset, we have also kept space for an optional qualitative layer, where it adds value, for example, photo, short audio clips, short videos, or micro-stories recorded with consent. These can help explain why certain patterns are appearing (persistent exclusion, repeated slippage, repairs not being done), without turning routine monitoring into burdensome qualitative research. Where available, this can strengthen learning and accountability alongside the core scores.

For ease of understanding, in Appendix 1, we have provided a worked example of how household data can be analysed and interpreted.

2.4 How data is collected from communities: the LLM model in practice

The ASPIRE LLM approach to community data collection draws directly from what we have already tested in India through MGNREGS, one of the world's largest public works-based social protection programmes. For MGNREGS, we developed the CRISP-M tool and combined it with a Climate Saathi/ Climate Friend (village volunteer) model. This 'people plus technology' approach moved monitoring beyond a top-down reporting exercise. It created a practical way for communities to verify what was happening on the ground, flag problems early and feed that evidence back into delivery and maintenance systems (see Box 1, page 20).

We have adapted the same approach for ASPIRE LLM, which uses a village volunteer facilitation approach to support short, structured household reporting, repeated over time, so that patterns of progress, stagnation and slippage become visible in a way that programmes can act on.

Building on these operational lessons, the LLM model combines three linked elements.

First, it uses short, structured household reporting. Households report by responding to a small set of questions aligned to the ladder indicators in Section 2.3. This captures what conventional monitoring often misses.

Second, it incorporates a village facilitation layer, comprising volunteers who support villagers with the monitoring process (similar to the Climate-Saathi role in India). This is what keeps the approach locally led in practice. Volunteers can support households who face barriers linked to literacy, disability, language, digital exclusion, mobility constraints or social norms. It helps ensure that locally led does not become digital only and that the monitoring process does not reproduce the same exclusion patterns that programmes are trying to address.

Third, it incorporates a feedback loop. Information is not collected as an extractive exercise. It is generated with a clear purpose: to help programmes spot delivery problems early, agree what needs fixing, track whether the fixes are working and share key messages with communities in a form that builds trust.

While CRISP-M was designed around resilience assets and landscape measures, ASPIRE LLM applies the same implementation logic to the full set of social protection functions that matter for resilience. This means LLM monitors both:

- how safety net support performs during climate stress (timeliness, adequacy, access and reliability of transfers), and
- whether resilience-building measures supported through programmes are functioning, locally relevant and reducing vulnerability over time.

This combined focus is important because social assistance (for example, in the form of cash, food aid, livelihood support) that arrives early can prevent distress coping in the short term, but households still need longer-term investments that reduce exposure and strengthen livelihoods.

BOX 1. THE CRISP-M EXPERIENCE IN COMMUNITY-LED VERIFICATION (MGNREGS, INDIA)

CRISP-M was developed to address persistent last-mile delivery and transparency challenges in India's MGNREGS programme. After resilience assets were approved and reported as completed, it was often difficult to identify what had been built, its location, whether it was functioning and who was benefiting, especially once works moved from construction to maintenance and long-term use.

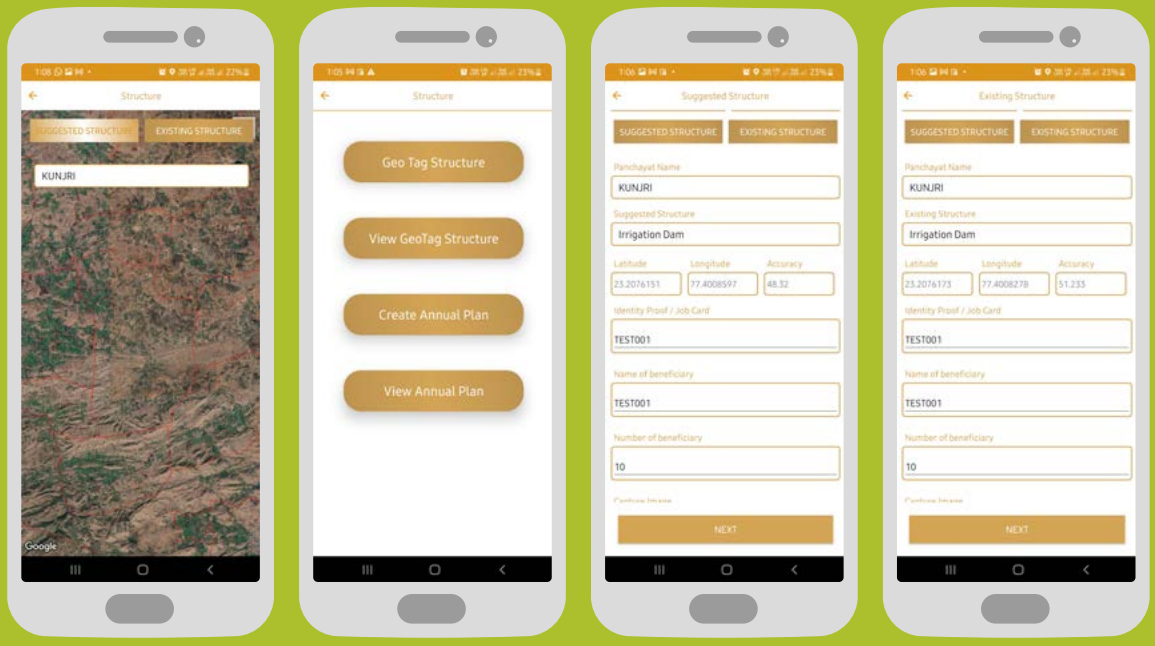
To bridge this gap, CRISP-M introduced a community-led verification layer that put simple monitoring tools in the hands of local facilitators rather than relying only on administrative reporting. A network of Climate Saathis (village volunteers, mostly women)[14] supported community members to use a mobile application and visit sites, (such as check dams, ponds, bunds and plantations) and upload time-stamped, geo-referenced photos and observations This created a practical 'proof of site' record and helped verify that the works on the ground matched what had been planned. It helped communities flag functionality issues early, for example, silted structures, breached bunds or plantations failing due to lack of water, so that repairs and maintenance needs could be raised before assets deteriorated further.

The model supplemented the existing MGNREGS monitoring and strengthened two-way accountability by enabling communities to: (i) verify reported progress against actual progress; (ii) report the condition of natural resource management assets; (iii) flag structures needing repair or maintenance; (iv) improve community awareness of assets and entitlements; and (v) make benefit flows more visible, including who was benefiting from the created assets.

The app shifted monitoring from being a top-down compliance exercise to being a learning and problem-solving process shared between communities and implementers. It supported local institutions to ask more informed questions. In Madhya Pradesh, for example, villagers used the tool to track water-harvesting assets and flag repair needs before the monsoon, which is particularly important as rainfall timing becomes less predictable. This protected irrigation assets that would otherwise have been lost. In several pilot villages, community reporting also highlighted discrepancies between reported and observed works, prompting follow-up and course correction by local administrations.

Recognising the value of this locally generated evidence, India's Ministry of Rural Development has institutionalised key elements of the approach. The core principle of geo-tagging and geo-location for verifiable monitoring has been mainstreamed, including requirements to geo-tag MGNREGS assets to strengthen transparency. The success of the 'people plus technology' model has also influenced broader national initiatives, such as the Jaldoot app,[15] which is used to capture water table data across India. This evolution from a pilot project to a national standard illustrates how community-led verification can function as a scalable delivery architecture for resilience.

Figure 5. Community asset validation and monitoring through the CRISP-M mobile app



Source: Bharadwaj et al., 2021[16]

2.4.1 Geo-tagging and geo-location: basic verification

A key feature of ASPIRE LLM is that household-reported information is geo-referenced, covering two elements: geo-location and geo-tagging. Geo-location automatically captures the precise coordinates (latitude and longitude) of the household or respondent at the time of reporting. Geo-tagging, at the same time, allows facilitators or households to manually attach location to specific digital content, such as a photo or a video. This builds on what we have already tested through community-led monitoring in India.

Geo-referencing serves two purposes. First, it provides basic verification that the information relates to a real place and a real delivery context. Second, it allows evidence to be aggregated for decision making.

Geo-referencing need not be complicated. At a minimum, the tool captures a household location point at the time of reporting. Where mobility or climate-induced displacement is common, the tool can add one simple prompt: whether the household is reporting from its usual location or a temporary one. This becomes important during shock periods, when households may have to relocate for safety, seasonal work or coping reasons. Capturing this information can help avoid misinterpretation and make migration/displacement and exclusion patterns easier to understand.

Geo-tagging also supports light-touch validation without adding burden. Location data can be checked against programme areas, hazard exposure zones or service catchments, and used to flag anomalies for follow-up. It also reduces duplication risk when monitoring rounds are repeated. However, it is important to note that the intent is not to turn LLM into a policing tool. The purpose is to ensure that the monitoring data is credible enough to guide course correction and investment decisions, while still remaining locally led.

Where relevant, households or facilitators can attach a photo, short video or voice note to the digital report as supporting evidence, for example when reporting relates to a public works asset, a damaged structure, or a disrupted service point. These inputs should be optional and used selectively so that reporting remains easy and does not create privacy or protection risks. In contexts where images are sensitive, such as where cultural norms restrict photography, the system should rely on location confirmation and structured responses rather than visual evidence.

2.4.2 Using artificial intelligence and technology to reduce burden and improve usability

ASPIRE LLM, uses technology and AI to make reporting easier for households and facilitators, reduce the time needed to enter data and improve consistency, all without turning the system into a complex digital product. Key features include:

- Smart prompting: rather than long questionnaires, the tool can guide users through short, structured questions in simple language, using skip logic so that households only see what is relevant to them. For example, if a household reports that it did not receive a transfer during a shock period, the tool can prompt a short follow-up to capture why (not registered, payment failed, did not know, could not travel, documentation barrier). This can make the inclusion gaps visible without asking every household the same long set of questions.
- Translation and accessibility: whether or not it is possible to gather information in local languages often determines who can participate in practice. AI-enabled translation can help deliver prompts in local languages and support audio-assisted formats where literacy is a constraint.
- Basic automated checks to improve consistency: these can run quietly in the background and confirm that required questions are completed, avoiding duplicate entries, flagging inconsistencies (such as, for example, very high ladder scoring alongside repeated severe food insecurity) and checking that location capture is functioning.
- Anomaly flagging for follow-up, especially as data volumes grow: the system can flag entries that appear unusual for a location or time period. For example, a sudden cluster of non-receipt reports in an area where payments are recorded as completed, or repeated slippage reports concentrated in one group. This does not mean the household report is wrong; often, it is the opposite. Anomalies are early signals of delivery failure, exclusion or emerging stress that programme systems may not have picked up.
- Help strengthen feedback loops: if households provide information but never see it reflected back, trust drops and reporting becomes extractive. Even simple feedback, such as a confirmation, a local summary shared back through community meetings or a dashboard view that facilitators can explain, helps reinforce that reporting has value and is linked to action.

This technological layer is a critical enabler of the ASPIRE Roadmap's goal to create evidence streams that are useful for decision making and improving delivery. We are not positioning AI as the centre of the LLM approach; its role is to keep reporting light, widen participation and produce information that is sufficiently consistent to guide decisions over time.

2.4.3 Frequency: routine monitoring and shock-period reporting

To track movement on the resilience ladder, ASPIRE LLM needs a reporting cycle that reflects how shocks unfold and how households recover. For this reason, the LLM model combines two frequencies: routine monitoring and shock-period reporting.

Routine monitoring provides the backbone of the system. It captures gradual changes in household conditions and buffers over time, including whether resilience investments are contributing to sustained reductions in vulnerability. In most contexts, routine reporting can be quarterly or six-monthly, depending on programme intensity and feasibility. The purpose is to provide clear, reliable reporting on whether households are progressing, remaining stuck or showing early signs of decline occurring outside of major shock periods.

Shock-period reporting is triggered during periods of forecast or observed stress, when anticipatory and shock-responsive systems are meant to perform. The aim is not to repeatedly collect the full dataset. It is to capture a small set of time-sensitive inputs that determine whether early action is working in practice: whether households received support, whether it arrived in time, whether it was adequate and what coping choices households were forced to make.

A practical way to undertake shock-period reporting is by employing a light-touch 'pulse' format during shocks. This can be done in two short rounds: one at the early stage of the shock or immediately after the trigger point (to capture receipt and timeliness) and a second after the shock peak (to capture adequacy, losses avoided and early recovery signals). Where crises are prolonged, additional pulses may be needed, but the model should avoid repeated rounds unless there is a clear decision use for the information.

2.5 Data quality, safeguards and ethics

2.5.1 Consent, privacy and 'do no harm'

ASPIRE LLM is designed to make household experience visible in a practical and decision-relevant way. But it can only work if people trust it. Under LLM, household data collection is repeated over time and geo-referenced. These features make the approach useful but also make it sensitive. Therefore, the LLM approach is based on the following principles:

- **Consent needs to be informed and meaningful:** households should understand what is being collected, why it is being collected, how it will be used and who will be able to see it. Participation should always be voluntary, with a simple option to decline or stop without any consequence for programme eligibility or access. Where reporting is supported by a facilitator, the process should use a short, standard consent script, and facilitators should be trained to avoid pressurising potential respondents, especially in settings where households may feel they cannot refuse.
- **Privacy requires both technical and operational protections:** household identities should be protected by using unique identifiers rather than names in the dataset used for analysis and reporting. Geo-location data should be collected at a level of precision that supports learning and delivery improvement but avoids creating risks for households. In practice, this means that location data can be stored securely at full precision for verification but displayed and shared only in aggregated or blurred form (for example, at settlement or administrative unit level), depending on the user's role (see Section 3.2). Access to raw household-level data should be restricted to those entering the data, while most users interact through aggregated dashboards and summary outputs.
- **Where images or media are used, their collection should be optional by default and strictly governed:** photos, short video clips or voice notes can add value for verifying an asset issue or service disruption, but they can also reveal identities, assets and sensitive household conditions. The approach, therefore, needs clear rules. These could include: collect only what is needed, store data securely and avoid sharing household-level media beyond those who need it for verification, so that households can report safely without providing images.

A 'do no harm' approach is designed to ensure that no intervention has a negative impact on the people it intends to help. Achieving this also depends on how the information is handled once collected. If households report exclusion, delays, informal costs or discrimination, the system should not expose them to retaliation or backlash. This risk is real in contexts where local power dynamics shape access to entitlements and where reporting could be interpreted as complaint or criticism. For this reason, ASPIRE LLM has incorporated simple escalation and response protocols that protect households' identities. Issues should be handled without public exposure of individual cases. Community feedback can and should happen, but it should be based on aggregated patterns and not identifiable households.

2.5.2 Triangulation and validation (light touch but credible)

Because ASPIRE LLM relies on household-reported information, it requires a validation approach that strengthens credibility without turning monitoring into an audit exercise. The intent is not to prove the accuracy

of every individual response. It is to build enough confidence in the overall dataset to ensure it can be used for course correction, accountability and planning.

In practice, validation works best when it is layered. Under ASPIRE LLM, this can happen in four ways.

- LLM data can be checked against programme and administrative records. For anticipatory transfers, this can include payment lists, transaction status, delivery dates and grievance logs. If households report late or non-receipt in an area where payments are marked as completed, that is a practical signal for follow-up. This follow up can identify underlying causes such as failed transactions, incorrect details, access constraints or exclusion errors that may not show up in aggregated reporting. For resilience investments, triangulation can draw on asset registers, work completion records and maintenance logs to distinguish between those delivered on paper and those functioning in practice.
- LLM data can be read alongside risk and shock information. Early warning triggers, rainfall anomalies, drought indices, flood alerts or heat advisories provide contextual information for interpreting slippage patterns and shock-period reporting. If multiple households in the same location report livelihood disruption or food insecurity during a documented shock period, it strengthens confidence in the signal. If reports appear inconsistent with the hazard context, it flags a different kind of question, in other words, whether the shock period has been misclassified, whether households are responding to a different stressor (inflation, illness, conflict), or whether the prompt needs clearer framing.
- The system can use simple internal quality checks to keep the dataset clean. These can be practical checks rather than validation tests, including identifying duplicates, missing fields, implausible combinations (for example, strong ladder scores alongside repeated severe food insecurity) and location anomalies. These checks can be used to improve consistency and should not be designed to question the legitimacy of household reporting.
- There is a place for light-touch field validation, especially in early piloting or where anomaly clusters emerge. Field validation can include short call-backs to a small sample of households, quick verification visits by facilitators or local teams and community reflection meetings where trends are discussed and corrected, if needed. These steps also help guard against facilitation bias, misunderstanding of questions or uneven coverage across groups and locations.

These types of validation exercises can make the evidence-base credible while keeping the model workable at scale.

The ASPIRE Observatory: turning LLM into action and accountability

The LLM approach can deliver its full value only when the locally gathered information can begin to shape how programmes are run, funded and improved. Once the data is collected and analysed, the next step is therefore to make sure that it is accessible to the right decision makers, at the right level and in a form that can trigger effective decision making and follow-up. We have seen the importance of this in our earlier work on CRISP-M and the Climate Saathi model with MGNREGS. The same principle applies to LLM.

3

In this section, we introduce the Observatory framework as the bridge between locally generated information and system-level action. Building on IIED's existing evidence-collation platforms and the success of the CRISP-M dashboard, the Loss and Damage Observatory (introduced in Section 3.1) is being expanded to integrate ASPIRE LLM data. This process is currently underway through the national pilot in Senegal supported by Comic Relief, which is testing the data structures and role-based access protocols required to move from a single country pilot to a global view. In this section, we explain how the Observatory is structured across levels (community to subnational, to national, to a global view), what gets visualised and who can see it (through role-based access and feedback loops). We have also set out how the Observatory can support convergence in practice, helping to identify hotspots of repeated slippage, align investments across different actors and strengthen locally led adaptation and loss and damage responses.

3.1 How the Observatory is structured

In the previous sections, we outlined how ASPIRE LLM generates household-level evidence to bridge the gap between policy readiness and real-world outcomes. As of August 2025, this approach is being operationalised through a national pilot in Senegal, with the intent to scale the model across the nine countries where ASPIRE diagnostics have already been implemented. To ensure this data drives accountability, we are integrating it into an international Observatory framework.

We already have a foundation for this strategy. The Loss and Damage Observatory (https://lossanddamageobservatory.org) is an existing online platform that enables practitioners to share evidence on the economic and non-economic impacts of climate change. Currently, this platform serves as a comprehensive repository of locally led evidence, including case studies, practitioner insights, photos and videos, on how loss and damage is being experienced at the local level (see Figure 6).

Moving forward, we are expanding this platform to include the structured data generated through ASPIRE LLM. Supported by funding from Comic Relief, IIED is currently building the underlying data architecture to manage these new evidence streams. We envisage a four-tier information structure that will allow data to be used at progressively higher levels of decision making.

1. The foundation will be the community layer. This is where reporting will happen and where the first level of visibility will sit. Community-facing views will be designed to be practical and easy to use. They will show what households are reporting in terms of receipt of support, barriers and movement on the resilience ladder over time. This information layer will also support local dialogues about the information received, functioning similarly to a social audit. Community facilitators and local implementers can use the information to identify immediate delivery gaps, such as clusters of non-receipt, repeated exclusion or early signs of slippage and discuss with the community on how to address them.

Figure 6. Screenshot of current Observatory view

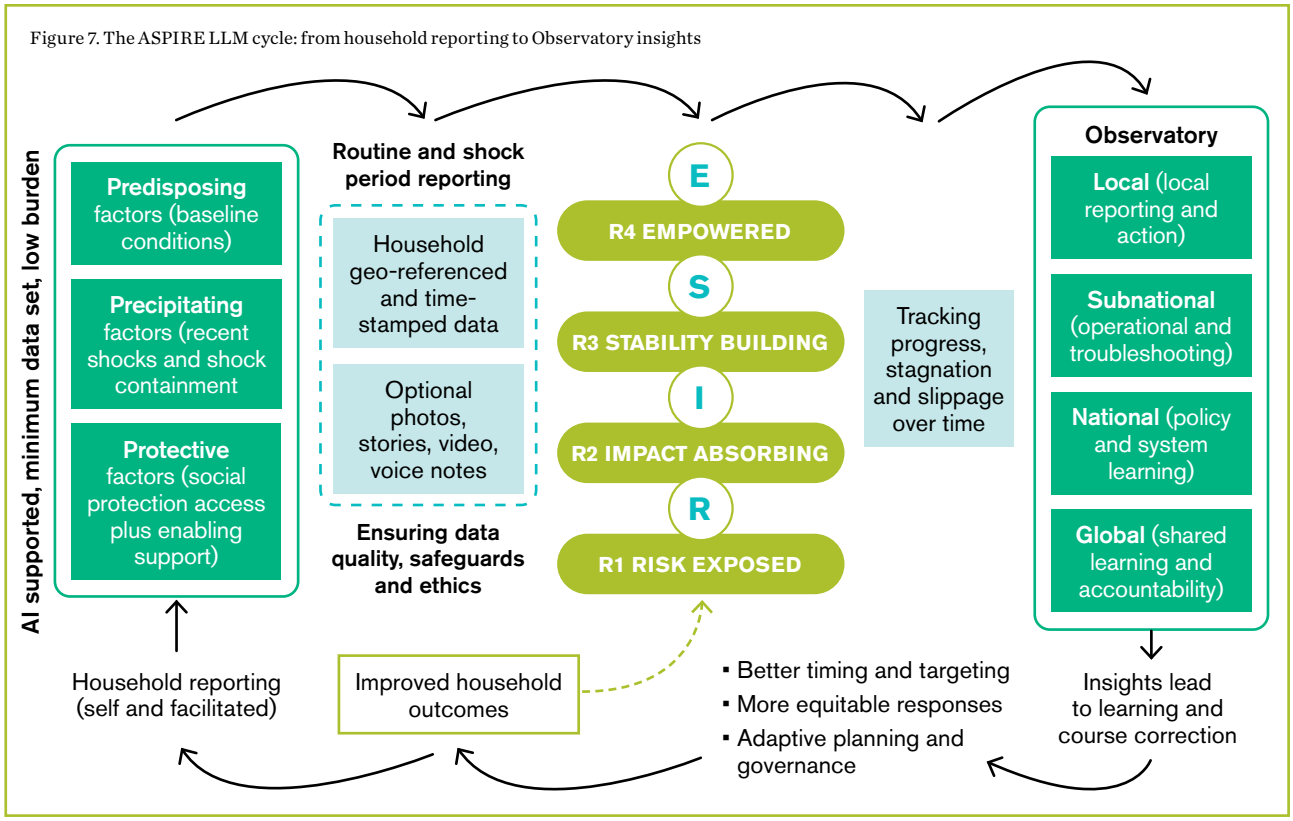
Available at: https://lossanddamageobservatory.org

2. The next layer will be the subnational layer (district, county or province, depending on the country). Here, community-level data will be aggregated and mapped to administrative boundaries and programme coverage. This layer will reveal variations which national averages can obscure, for example, where delivery is consistently late, where adequacy concerns are concentrated, which groups are repeatedly missing support or where resilience investments are not functioning as intended. As such, this layer will inform operational decisions regarding troubleshooting delivery, adjusting targeting and coordinating between departments.
3. The third layer will be at the national level, and will consolidate subnational data into a single view for policy and system-level learning and align with ASPIRE assessment at that level. It will support tracking whether anticipatory mechanisms are improving over time, whether reforms to systems and delivery are translating into stronger household outcomes and where persistent gaps remain. It will also make it easier to connect monitoring evidence to budget planning, contingency financing and national shock response coordination.
4. At the fourth layer, the global Observatory will map national outputs into a common structure so that trends can be compared across countries and tracked over time. The global Observatory is not intended to replace country systems or take ownership of country data. Its purpose will be to support shared learning and accountability: where progress is occurring, what type of delivery improvements are working and how different approaches perform under different risk contexts. The global Observatory will support peer learning and partner coordination. It will develop into an international resource for funders and governments investing in anticipatory social protection and resilience.

To make this multilevel model work, IIED and its technical partners are developing the data structure for the Observatory. This will form the data backbone, comprising a standard data structure and common indicators, consistent time stamping and aggregation rules. Household-level data will remain the source, but users will interact with it through role-appropriate, aggregated views (the access model is covered in Section 3.2). The structure is also proposed to be modular, where countries can start small, for example, with one subnational layer linked to a national view and expanded over time, while still maintaining a clear pathway to a global view.

In this way, the Observatory will allow locally generated evidence to move from household-level experiences to subnational analysis and delivery improvement, to national planning and financing and to global learning and accountability (see Figure 7 for the full ASPIRE LLM cycle).

Figure 7. The ASPIRE LLM cycle: from household reporting to Observatory insights



3.2 What gets visualised and who can see it

For the Observatory to strengthen accountability and improve decision making, two issues will be important: the types of evidence presented and who can see them. Household monitoring is sensitive and household participation depends on trust. Maintaining this trust requires thoughtful management of the reported data: not all information should be made available to Observatory users in its original form. Instead, we have designed a role-based access model that displays a common set of indicators but provides different levels of detail depending on the user's role and geographical remit.

The Observatory will be more than a dashboard for viewing data. It will act as a dynamic repository that will bring together two evidence streams:

i. routine, geo-referenced monitoring data generated through ASPIRE LLM; and

ii. qualitative learning products, such as case studies, practitioner insights, photos, video and audio stories, that help explain why patterns are emerging and what is working on the ground.

By linking these two streams, the Observatory will provide the 'why' behind the 'what'. For example, while the LLM data may show a cluster of households slipping on the resilience ladder in a specific district, the qualitative case studies can explain that this was driven by a specific combination of crop failure and high debt, allowing for a more targeted response.

3.2.1 What gets visualised

We have kept the visualisation tool set tight deliberately, focusing on outputs that are directly linked to the purpose of LLM and useful for course correction. These include:

- **Resilience ladder distribution and movement over time.** This will show how households are positioned across the four rungs (R1–R4) in a location or programme area, and how that distribution shifts across monitoring rounds. It will also show the share of households experiencing progress, stagnation and slippage.
- **Shock-period performance signals.** During shock periods, the Observatory will show where households report receiving anticipatory support, whether it arrived in time, whether it was adequate and where non-receipt or payment failures cluster. This is particularly useful for quickly identifying delivery bottlenecks.
- **Access, inclusion and exclusion patterns.** The Observatory will be able to show who is being left out and why, including clusters of exclusion linked to documentation barriers, digital access, mobility constraints, information gaps or discrimination. Where possible, this information will be visualised through disaggregation and spatial mapping rather than long narrative reporting.
- **Resilience investment functionality and relevance.** For public works, assets and service-related measures, the Observatory will be able to track whether investments are present, functioning and maintained, and whether households report them as reducing risks in meaningful ways. Where available, this reporting can be complemented by photos, short clips or local narratives that explain what is working (or not) and why.
- **Hotspots of repeated impact and slippage.** By combining location, time and ladder movement, the Observatory will be able to flag areas where households are repeatedly slipping back after shocks, or where recovery is not being maintained. These hotspots are often where additional support, convergence of programmes or changes in delivery may become urgent.

3.2.2 User-specific access and data visibility

Different users require different levels of detail to undertake their roles within the ASPIRE LLM framework. Access to specific data layers is structured around four distinct user groups and their functional needs

1. **Communities and households** *(local view).* Community-facing views should be simple and prioritise accessibility. The priorities here will be feedback, transparency and trust. Communities should be able to see the key trends that their reporting is highlighting and use them in local discussion and social audit processes. To maintain safety, community-level access will not display identifiable household information and present aggregated views that protect privacy.
2. **Social protection officers and frontline teams** *(operational view).* Implementers of social protection and climate adaptation programmes require data that can support troubleshooting and course correction. Their view should make it easy to identify delivery problems (late transfers, non-receipt clusters, repeated exclusion), track whether issues persist across rounds and respond during shock periods. More granular filtering can be included by ward/village, programme component, or delivery channel, but only within clear safeguards.
3. **Government institutions** *(planning and performance view).* Government users need to be able to view information that combines data across programmes

and geographies to support planning, coordination and financing decisions. This view would show where the system is improving over time, where persistent delivery gaps remain and what kinds of barriers are preventing progress in certain places or for particular groups. This will include both routine trend views and shock-period summaries. National users do not require individual household information, but they do need sufficiently detailed subnational patterns to target reforms and resources.

4. **Funders and partners** *(strategic and accountability view)*. Funders and partners need a view that supports accountability and better investment decisions by focusing on long-term trends rather than narrow, compliance-based reporting. Their access will focus on changes in resilience levels over time and delivery performance during shock periods. The data will also support programme synergies (convergence): where programmes overlap, where gaps remain and where layered support is producing stronger outcomes. This view will be aggregated and designed to encourage learning and coordination rather than compliance reporting.

3.2.3 Transparency functions and feedback loops

Transparency is not achieved simply by publishing data; it depends on whether community-generated information influences decisions and whether communities can see that link. The Observatory will therefore have a feedback mechanism, through which local summaries can be shared during community meetings, periodic district-level reflections with implementers and clear response loops that show what has changed as a result of the monitoring evidence. Even small visible changes, such as correcting payment failures and addressing access barriers, can help build confidence that reporting has value.

In this way, the Observatory will be able to support two-way accountability. While communities already understand their own personal experience, the Observatory will allow them to see whether their specific challenges are part of a wider local pattern and provide the objective evidence needed to verify their claims to officials. This will empower them to demand fair and effective support, while helping implementers, governments and funders see where delivery is working, where it is failing and what needs to change.

3.3 How the Observatory supports decision making

The primary purpose of the Observatory is to ensure that monitoring data is presented in a way that triggers specific, timely actions by policymakers and practitioners. Its value lies in translating household-reported signals into patterns that can guide action. During shock periods, the Observatory can quickly identify problem areas by location or delivery channel, providing early signals that can guide course corrections.

By tracking movement on the RISE ladder, the Observatory can flag hotspots where recovery is not being maintained and households are repeatedly slipping down the rungs in the wake of shocks. This can support administrators to priortise action for those communities or regions that could be at risk of experiencing longer-term loss and damage.

Because monitoring is geo-referenced, it can be overlaid with programme footprints and investment locations, making it easier to see duplication, gaps and sequencing opportunities. This can support coordination across government programmes and provide funders and partners with a shared reference point to align support and reduce parallel reporting systems.

The Observatory can also strengthen LLA and loss and damage responses by showing household experiences over time, for example, where residual impacts are persisting, where needs are remaining unmet or where current responses are not sufficient. By linking locally generated evidence directly to programme adjustments and decision making, the Observatory can ensure that monitoring leads to proactive course correction rather than just retrospective reporting.

Looking forward: operationalising ASPIRE LLM

Transitioning ASPIRE LLM into a functioning delivery model will require a fundamental shift in how monitoring is conceptualised: moving from upward reporting to downward accountability. In practice, this will mean using locally led evidence to ensure the effectiveness, timeliness and reach of existing support to achieve measurable resilience at the household level.

4

Transitioning ASPIRE LLM into a functioning delivery model rests on three core principles:

1. Treating LLM as a delivery improvement mechanism rather than a compliance exercise. If it becomes a scorecard used to penalise frontline staff, households will stop reporting honestly, and implementers will stop engaging. Governance will therefore need to protect the learning function while enabling accountability through clear visibility of response actions.
2. Investing in the 'people layer' of the model. This will require active awareness building, training and ongoing support for village facilitators. This investment will ensure that monitoring does not reproduce existing patterns of exclusion and maintains trust.
3. Building confidence through responsive feedback loops. Participation depends on households witnessing that reporting leads to follow-up and improvements. Small, visible changes, such as correcting a payment failure or addressing an information gap, will help demonstrate that the monitoring process has tangible value on the ground.

4.1 Implementation roadmap and next steps

To operationalise ASPIRE LLM, we are adopting a structured approach that will help the system evolve from initial validation to full institutional integration:

- **Establishing a functional foundation:** the immediate priority is to confirm that the system can work in practice by testing the 18-indicator dataset and scoring anchors. As of early 2026, this is being operationalised through a Comic Relief-supported pilot in Senegal to ensure households can report without fatigue and that the data is useful for decision making.
- **Building systemic responsiveness:** once the core data flow is verified, the focus will shift to creating deliberate feedback loops. This will involve ensuring implementers use LLM insights to improve the timeliness of support and refine targeting pathways based on real-time household feedback.
- **Institutionalising to ensure scale and accountability:** the final objective will be to embed LLM within national social protection and disaster risk management policies and systems. At this stage, the Observatory will scale up to provide a comprehensive national and global view, allowing monitoring data to support high-level resource allocation and sustenance of the LLM approach.

4.2 Partnerships, governance and roles

To realise this vision, the roles of different actors will need to be anchored in a delivery architecture where each actor will contribute to a specific stage of the monitoring cycle:

- **Community facilitators:** hosted through trusted local organisations, facilitators will need to shift from being data collectors to advocates for inclusion. They will play an enabling role by supporting currently excluded households to participate, ensuring consent processes are followed and helping communities interpret the feedback received.
- **Implementing agencies:** government programme teams and delivery partners will need to treat the data as a performance improvement mechanism. They will need to adopt agreed response protocols, defining who follows up on alerts about late payments or exclusion and how actions will be communicated back to the community.
- **Government institutions:** to ensure sustainability, government ownership will be anchored in an inter-ministerial coordination group. Its role will be to set data governance rules and embed LLM trend reviews into existing national coordination mechanisms, to ensure that evidence triggers contingency financing and policy reforms.
- **Funders:** will need to shift from driving fragmented, parallel reporting requirements to aligning around a shared monitoring approach. By backing specific response actions and financing often underfunded components like community facilitation and capacity building, they can ensure LLM leads to delivery impact.

Operationalising LLM represents a vital step towards bringing communities closer to decision making. This approach is not about shifting formal authority overnight. It is about creating a routine channel through which household experience is visible, comparable over time and used to improve delivery. To make that happen, a shared commitment is needed to embed LLM into programme management, link it to response and protect trust while enabling action.

Appendix 1. Assessment approach and methodology (RISE resilience ladder)

This appendix summarises the assessment methodology used to position households on the RISE resilience ladder and track movement over time. We have designed the method to be simple enough to operationalise through low-burden, household-reported monitoring, but structured enough to allow comparison across monitoring rounds and locations.

How this methodology should be used in different contexts

We have based the proposed ladder rungs, indicator set and scoring anchors on field research and operational learning across multiple country contexts. At the same time, we don't assume that one template will fit all locations and circumstances. In practice:

- Rung criteria and scoring anchors should be tested and refined through participatory community consultation during piloting, so that the ladder reflects local realities, livelihoods and risk profiles.
- The 3P indicator set out in the main text is intended as a minimum starting point. Countries can modify indicator descriptors (and, where necessary, add a small number of context-specific indicators), so long as changes are documented clearly and applied consistently across monitoring rounds.

The aim is to keep the ladder comparable over time, while allowing enough flexibility for it to be credible and usable in different contexts.

A. Conceptual principle (scoring as strengths)

Across all three 3P domains (Predisposing, Precipitating and Protective), we score indicators as strengths:

- 1 = weakest/highest vulnerability
- 4 = strongest/lowest vulnerability

This is a deliberate design choice: a higher value always indicates stronger resilience capacity (or stronger shock containment), which avoids confusion when scores are combined across domains.

B. Household vector construction (3P at source)

Each household H is represented as three grouped sub-vectors under the 3P framework:

$$V_{H=}\{V_H^P, V_H^{Pr}, V_H^{Prt}\}$$

Where:

- V_H^P = predisposing strengths (baseline conditions and underlying vulnerabilities)
- V_H^{Pr} = precipitating strengths (shock containment/lower disruption over the recall period)
- V_H^{Prt} = protective strengths (buffers and recovery capacity)

Each sub-vector comprises six indicators, scored 1–4 using locally adapted descriptors agreed during piloting.

C. Group wise resilience magnitude (RMI)

For each 3P group, we compute an RMI using the Euclidean norm:

$$RMI_k = \| V_H^k = \| \sqrt{\sum_{i=1}^{6} x_i^2} \quad k \in \{P, Pr, Prt\}$$

This is a compact way to summarise the combined strength of the six indicators in each domain: higher RMI = stronger conditions/capacity in that domain.

D. Benchmark anchored normalisation (Group NRI: 0–10)

To make scores comparable across contexts and across monitoring rounds, we normalise each RMI using fixed theoretical benchmarks (rather than sample-dependent ranges):

- Lower benchmark (all indicators = 1): $\| V_{min} \| = \sqrt{6}$
- Upper benchmark (all indicators = 4): $\| V_{max} \| = \sqrt{96}$

Each group RMI is converted into a Group Normalised Resilience Index (NRI) on a 0–10 scale:

$$NRI_k = \frac{RMI_k - \sqrt{6}}{\sqrt{96} - \sqrt{6}} \times 10$$

Where:

- 0 reflects a very weak position (close to the 'all 1s' benchmark), and
- 10 reflects a very strong position (close to the 'all 4s' benchmark).

E. Composite resilience score (Composite NRI: 0–10)

The overall household resilience score is computed as a weighted average of the three group NRIs:

$$Composite \;\; NRI = \frac{W_{Pr} NRI_P + W_{Pr} NRI_{Pr} + W_{Prt} NR_{Prt}}{(W_P + W_{Pr} + W_{Prt})}$$

Baseline specification (equal weights):

$$W_P = W_{Pr} = W_{Prt} = 1 \Rightarrow Composite \;\; NRI = \frac{NRI_P + NRI_{Pr} + NR_{Prt}}{3}$$

If weights are adjusted in a specific country context (for example, if stakeholders decide protective capacity should be weighted more heavily in a given setting), the weighting scheme should be documented transparently and kept consistent across monitoring rounds.

F. Ladder classification (R1–R4)

Households are classified into one of four rungs based on the Composite NRI threshold bands in the following table. These thresholds provide a clear operational basis for classification and for tracking movement over time, and they should be stress-tested during piloting to ensure rung placement aligns with lived realities.

Composite NRI	Ladder rung	Interpretation
0.0–2.5	R1: risk exposed	Weak baseline, high exposure, minimal protection
>2.6–5.0	R2: impact absorbing (absorptive resilience)	Partial strengths; coping possible but recovery remains fragile
>5.1–7.5	R3: stability building (adaptive resilience)	Stable baseline; shocks buffered; recovery and adjustment improving
>7.6–10.0	R4: empowered (transformative resilience)	Strong and sustained resilience capacity; low barriers; greater agency

G. Structural Consistency Index (SCI): a diagnostic on the 'quality' of resilience

The Composite NRI tells us where a household sits on the ladder (the 'vertical' position). However, households can sometimes show gains that are narrow or skewed (for example, improved income but persistent health access barriers, or stronger scheme access but chronic debt stress). To flag this, we include an optional diagnostic: the SCI.

The SCI uses cosine similarity to compare the household vector against an 'ideal' balanced trajectory:

$$SCI = \cos(\theta) = \frac{\mathrm{V_H} \cdot \mathrm{V_{ideal}}}{\| \mathrm{V_H} \| \ \| \mathrm{V_{ideal}} \|}$$

A practical choice for diagnostics is to set the ideal vector at a balanced, stable pathway (rather than an aspirational extreme), for example:

- $\mathrm{V_{ideal}} = \mathrm{V_3} = [3,3,3,...,3]$

SCI interpretation bands:

SCI range	Interpretation
≥ 0.95	Strongly balanced resilience
0.90–0.94	Mild structural gaps
0.80–0.89	Moderate imbalance
< 0.80	High skew/maladaptive resilience

SCI is best treated as a flag, not a second headline score. It helps interpret how stable progress is likely to be under compounding risks.

H. Using the ladder for longitudinal monitoring

Households are tracked over repeated rounds using:

- Composite NRI (0–10) to track movement across rungs, and
- SCI (where used) to flag fragile or skewed progress.

In practical terms, this allows monitoring to distinguish between:

- progress that holds,
- stagnation (households staying stuck at a threshold), and
- slippage (households dropping down the ladder after shocks or due to repeated stress).

Importantly, the ladder is not meant to replace qualitative learning. Where feasible, ladder results are strengthened when they are complemented by short qualitative insights (for example, short stories, audio clips, or community reflections) that explain why patterns are emerging and what is driving movement.

I. Interpreting the three group NRIs (what each domain tells us)

In addition to the Composite NRI, the three domain indices are useful in diagnosing where constraints sit:

1) NRI_P: predisposing resilience (structural baseline strength)

NRI_P reflects the household's baseline starting position before shocks (income stability, housing safety, health access, education/skills, inclusion, debt burden).

Practical interpretation:

- Low NRI_P (0–3): chronic structural vulnerability; households are 'born into risk'
- Mid NRI_P (3.1–6): partial baseline strength; upward mobility possible but fragile
- High NRI_P (6.1–10): stronger baseline enabling anticipation and self-recovery

This domain points to foundational development deficits and structural barriers that constrain resilience.

2) NRI_{Pr}: precipitating resilience (shock containment)

NRI_{Pr} reflects how well the household contained losses over the recall period (climate shock frequency/severity, livelihood loss, illness/disability shock, displacement, house/land damage, food insecurity).

Practical interpretation:

- Low NRI_{Pr} (0–3): recurrent or severe losses; resilience eroded by events
- Mid NRI_{Pr} (3.1–6): some losses, but not catastrophic
- High NRI_{Pr} (6.1–10): better shock containment/lower disruption

This domain can also help identify where early warning, trigger design and response timing are not containing harm.

3) NRI_{Prt}: protective resilience (buffers and recovery capacity)

NRI_{Prt} reflects the household's ability to buffer shocks and recover (diversification, savings/insurance, networks, scheme access, early warning use, collective participation).

Practical interpretation:

- Low NRI_{Prt} (0–3): protection failure; even small shocks can be devastating
- Mid NRI_{Prt} (3.1–6): some buffers, but insufficient for major shocks
- High NRI_{Prt} (6.1–10): stronger adaptive and recovery capacity

This domain points to social protection effectiveness, institutional support and where layering resilience investments may be needed.

BOX A1. WORKED EXAMPLE: WHAT ONE HOUSEHOLD'S RESULT TELLS US

In one worked example, the household's results were:

- Composite NRI = 4.74 — R2 (impact absorbing/absorptive resilience)
- NRI_{P} = 4.24 (predisposing baseline: modest/fragile)
- NRI_{Pr} = 5.38 (precipitating: shock impacts partly contained)
- NRI_{Prt} = 4.60 (protective buffers: present but fragile)
- SCI = 0.96 (strong structural balance across domains)

What this implies:

This household is coping better than the most risk-exposed households (R1), but its resilience remains fragile and recovery is unlikely to hold under repeated or compounding shocks. The domain profile suggests that structural baseline constraints and limited protective buffers are the main reasons the household is not moving into R3. At the same time, the SCI result is important: the household's strengths are fairly balanced, which means progress is not being driven by one narrow gain (for example, a temporary income increase while other deficits persist). In practical terms, this household is not 'maladaptively resilient', but it is simply not yet strong enough.

How this can be used for course correction:

- If many households sit in R2 with similar profiles, it points to the need for stronger protective capacity (more reliable scheme access, stronger savings/insurance pathways, livelihood diversification and functioning community support systems).
- If NRI_{P} is consistently low, it suggests that households may remain stuck unless social protection is complemented by measures that reduce structural deficits (for example, improved health access, debt stress reduction or removal of inclusion barriers).
- If NRI_{Pr} drops sharply during shock periods, it signals that shocks are not being contained and that the timeliness/adequacy of anticipatory response (or the adequacy/performance of early warning triggers) may need to be adjusted.

The value of this kind of interpretation is that it turns a ladder score into insights for decision making, identifying not only 'where households are', but *why*, and what changes in delivery or investment choices are most likely to shift trajectories over time.

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Timely social protection support can protect communities most affected by compounding climate risks. But just linking these programmes to anticipatory action does not guarantee real-world outcomes. To close this delivery gap, we developed the ASPIRE locally led monitoring (LLM) approach. Moving from upward compliance-based monitoring to downward accountability, ASPIRE LLM empowers households to assess whether support is timely, adequate and inclusive. At its core is the RISE resilience ladder, which tracks household trajectories (progress, stagnation or slippage) across repeated shocks. Connected to a global Observatory, this locally generated evidence allows policymakers and funders to course correct delivery, ensuring climate finance builds verifiable, sustained resilience.

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