

Using individual-level measurement to strengthen resilience, water security and food security:

Insights from Adara's Remote Community Development (RCD) Project



Key insights

Individual-level measurement is important for revealing gendered differences in experiences of insecurity and resilience, for women and men. Findings showed higher levels of severe food insecurity among women (54%) compared with men (40%). Individual-level approaches also identified where men may experience different forms of vulnerability and disadvantage, including slightly higher levels of water insecurity (64%) compared to women (61%).

High water insecurity despite access to piped water suggests that access does not necessarily equate to availability or usability. This underlines that just measuring the presence of infrastructure may not reveal people's actual experiences or ability to reliably meet daily needs.

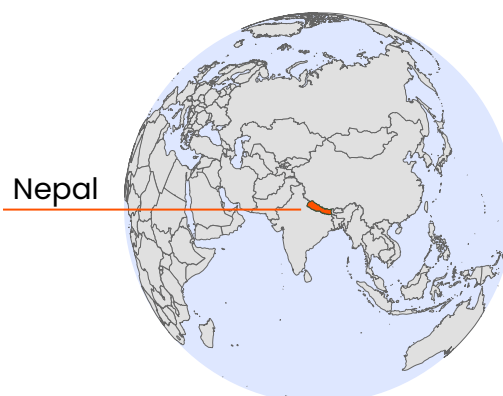
Background

The Revealing Resilience initiative works to expand the use of individual-level measurement to strengthen inclusive climate resilience and sustainable development. The initiative is funded by the Australian Government and led by the University of Technology Sydney – Institute for Sustainable Futures with the International Women's Development Agency's Equality Insights program.

In 2026, Revealing Resilience collaborated with Adara Development to support the use of individual-level measurement in an assessment on food security, water security, and climate resilience in Nepal's Humla District. This brief shares findings and learnings.

Remote Community Development (RCD) aims to improve the lives of people in remote communities through quality health, education, child protection, youth development and resilience initiatives.

With climate change driving increasingly severe and unpredictable weather patterns, community resilience and disaster preparedness has become an essential pillar of Adara's work. Through disaster-resistant infrastructure and climate-smart agriculture projects, RCD helps communities anticipate, withstand and recover from both natural and human-made disasters. RCD also works to enhance food security, strengthen sustainable farming practices and diversify food sources by improving agricultural skills, knowledge and technology.



¹ About the RCD program

Approach & Context

This study used four individual-level measures to assess food insecurity, water insecurity, resilience, and distress — the Food Insecurity Experience Scale (iFIES)¹, the Water Insecurity Experience Scale (iWISE)², the Individual Self-Evaluated Resilience Measure (iSERS)³, and the Participant Distress Measure (Distress-4)⁴. As distress was minimal for all respondents, this brief focuses on the the other three measures.

Data collection took place in Syada village in the Humla District, a mountainous region of Nepal. Random sampling was used to select 114 respondents from 66 households out of approximately 250 households in the village. More than half (54%) of respondents were women, and over 30 per cent were people living with a disability. A third of the respondents (33%) were over the age of 60 and 25 per cent were between 18 – 35 years old.

Key Findings

Climate Resilience – Drought

The Individual Self-Evaluated Resilience Measure (iSERS) measures individual climate resilience with reference to four climate events: floods, drought, landslides, and severe storms.

The study found moderate levels of drought resilience (89%) but very low capacity to prepare, adapt, and recover. We found that men and women have equal levels of awareness about drought, however, women are significantly less able to prepare, adapt, and recover from drought.

We also explored approaches to visualisation, to improve understanding of the results; ultimately landing on a three-category system that is color-coded.

About the iSERS:

- Six scored questions each with five-option responses
- An average of question scores is taken as the iSERS score, which allows for up to three skipped questions
- Final score out of 1, normalized from a score of 3.
- Higher scores indicate greater resilience; positively framed measure

High resilience [Scores 0.67–1.0]
Moderate resilience [Scores 0.34–0.66]
Low resilience [Scores 0.0–0.33]

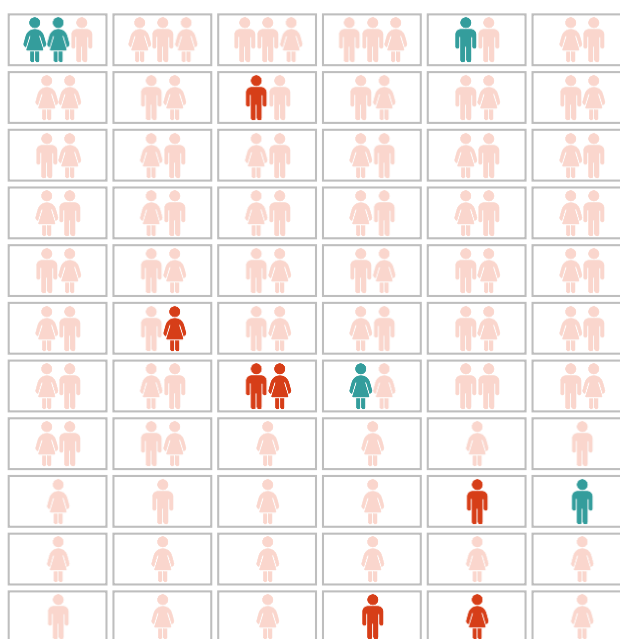


Figure 1. Individual drought resilience of each person surveyed, by gender with each box representing a household

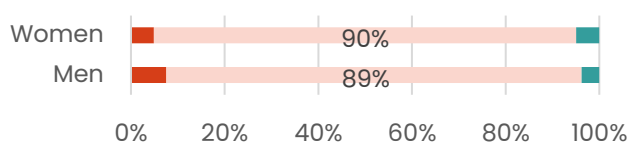


Figure 2. Drought resilience by gender

1. [FAO Food Insecurity Experience Scale \(FIES\)](#) – For simplicity, a simple sum was adapted instead of the recommended weighted sum. Three categories used for ease of interpretation.
2. [Young et al. 2021 \(10.1136/bmjgh-2021-006460\)](#) – For harmonisation across the iSERS and iWISE, three categories used for interpretation instead of the recommended two.
3. [MacArthur et al. 2026 \(10.1080/17565529.2026.2623010\)](#); UTS-ISF 2026 [iSERS Climate Module V2](#)
4. [MacArthur et al. 2025 \(10.1371/journal.pone.0326957\)](#); UTS-ISF 2026 [Distress Module V3](#)

Water Insecurity

The Individual Water Insecurity Experience Scale (iWISE) measures people's experiences of water insecurity including not having enough water or struggling to access clean and safe water. The study found severe levels of water insecurity overall, with 62 per cent experiencing severe water insecurity. The results also revealed men (64%) experienced slightly higher levels of water insecurity than women (61%), especially around hand-washing practices.

These high levels of water insecurity exist despite the availability of piped water in Syada, which suggests access does not necessarily equal availability or usability.

About the iWISE:

- For items, each with five-option responses
- "N/A" and "Don't Know" responses not used.
- Score is a sum – final scores out of 12
- Recommended to categorise into two groups; three used here to enable consistency with other measures
- High scores indicate less water security, negatively framed measure

Food Insecurity

The Food Insecurity Experience Scale (iFIES) measures people's experiences of food insecurity – including not having enough food or struggling to access food. The study found high levels of food insecurity overall, with almost half of respondents (49%) experiencing severe food insecurity. The results also showed differences between men and women, with women reporting higher levels of severe insecurity (54%) than men (40%).

About the FIES:

- Eight items with binary responses
- "N/A" and "Don't Know" responses not used.
- Sum – final scores out of 8.
- Typically recommended to be weighted sum, but for simplicity with a small sample, a simple sum was utilized
- High scores are less food secure, negatively framed measure

Secure [Scores 0-3]
Moderately insecure [Scores 4-6]
Severely insecure [Scores 7-12]

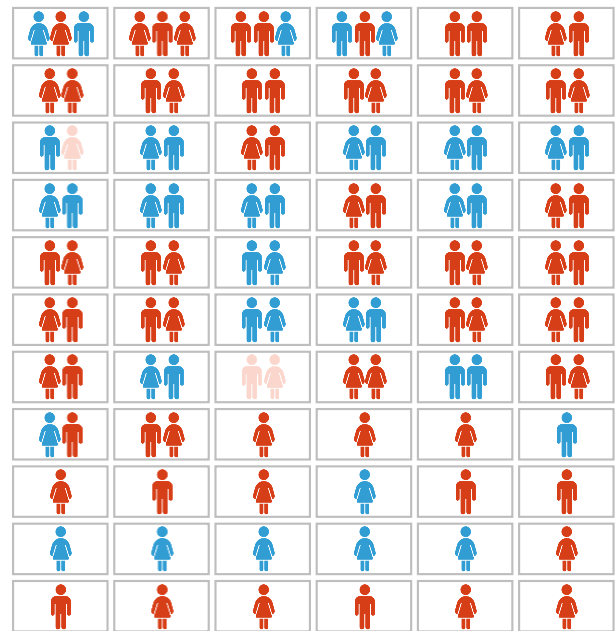


Figure 3. Individual water security of each person surveyed, by gender with each box representing a household

Secure [Scores 0-3]
Moderately insecure [Scores 4-6]
Severely insecure [Scores 7-8]
No score

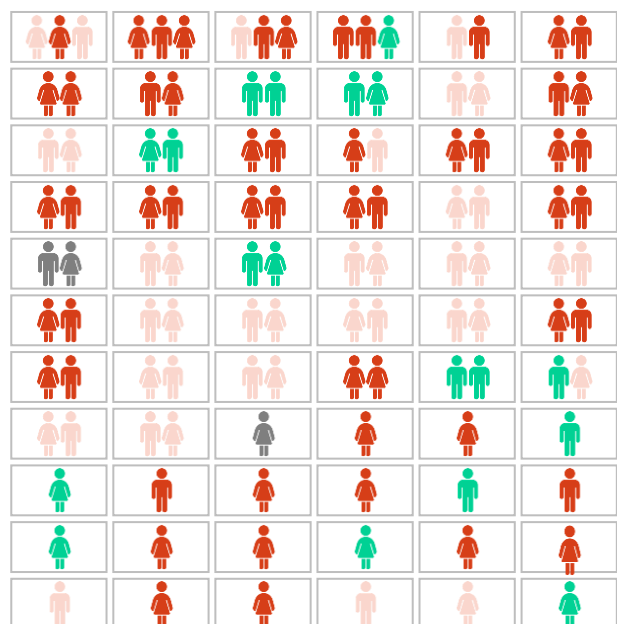


Figure 4. Individual food security of each person surveyed, by gender with each box representing a household

Project Recommendations

The following recommendations were devised by the Adara team based on the sensemaking reflections from this measurement activity.

- **Introduce targeted, gender-sensitive nutrition programming** that promotes equitable eating practices to strengthen food security amongst women.
- **Increase capacities for preparedness, adaptation and recovery**, with targeted approaches to strengthen women's resilience.
- **Ensure enumerator training includes dedicated guidance on disability** questions to strengthen disability-inclusive data collection, and ensure disability status is accurately and sensitively captured. Reflections highlighted that the enumeration team was not comfortable with the Washington Group Short Set of questions and wished for further support.
- **Identify the specific causes of water insecurity through detailed assessment and community feedback.** Based on the findings, interventions should focus on improving accessibility and equitable distribution of water and raise awareness on safe water storage and management.

Methodological Lessons

- While the data was not generalisable to the whole district, the project team still learned significantly and saw clear patterns about water and food security alongside climate resilience.
- The iFIES was valuable and shorter than other tools that RCD has used to evaluate food security.
- The use of colour-based thresholds and development of the people-icon plots that show individuals within households significantly helped with interpretation.
- Water access does not necessarily lead to water security and comparing these indicators can be valuable in the future.

Learning brief prepared by Jess MacArthur of University of Technology Sydney – Institute for Sustainable Futures with contributions from Adara Development.

Suggested citation: MacArthur, J 2026. Learning Brief: Using individual-level measurement to strengthen resilience, water security and food security: Insights from Adara's Remote Community Development (RCD) Project.